

THE PROJECT (TEQIP-III)

1 Introduction

The Project, Third phase of Technical Education Quality Improvement Programme (referred to as TEQIP-III) is fully integrated with the Twelfth Five-year Plan objectives for Technical Education as a key component for improving the quality of Engineering Education in existing institutions with a special consideration for Low Income States and Special Category States and support to strengthen few affiliated technical universities to improve their policy, academic and management practices.

2 Project Objectives:

The Project will focus on the following objectives:

- (a) Improving quality and equity in engineering institutions in focus states viz. 7 Low Income States (LIS¹), eight states in the North-East of India, three Hill states viz. Himachal Pradesh, Jammu & Kashmir, Uttarakhand and Andaman and Nicobar Islands (a union territory (UT)),
- (b) System-level initiatives to strengthen sector governance and performance which include widening the scope of Affiliating Technical Universities (ATUs) to improve their policy, academic and management practices towards affiliated institutions, and
- (c) Twinning Arrangements to Build Capacity and Improve Performance of institutions and ATUs participating in focus states.

3 Project Scope:

Only the Government and Government aided AICTE approved Engineering institutions/Engineering faculty/Engineering Teaching Department/Constituent Institutions of Universities/Deemed to be Universities and new centrally funded institutions in SCS will be the part of the project.

An estimated 180 Government and Government funded Engineering institutions and 10 Affiliating Technical Universities (ATUs) will be selected under different sub-components in one or two cycles.

4. Project Strategy:

The project will be implemented in alignment with the 12th Five Year Plan (2012-17), based on faster, sustainable, and inclusive growth. It emphasizes increasing the supply of highly-skilled workers to drive the economy, as well as helping low-income states catch up with their more advanced neighbours.

The Project will be implemented through the Ministry of Human Resource Development (MHRD) of the Government of India as a **Central Sector Scheme (CSS)**, wherein 100% funds will be provided as grants to the States, Institutions & ATUs.

¹ The LIS States are Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan & Uttar Pradesh.

A set of Government orders for States and UTs is to be issued to achieve a high and sustained impact of the Project. These orders are to give the project institutions adequate decision making powers that will enable and encourage them to deliver quality education and undertake research in an efficient manner. The primary focus is to increase empowerment of institutions for self-governance and create incentives for achieving excellence in engineering education.

The project institutions will be required to implement academic and non-academic reforms within their self-conceived development programmes that focus on quality and relevance, excellence, resource mobilization, greater institutional autonomy with accountability, research and equity.

Professional development programmes for engineering-education policy planners, administrators and implementers at the Central, State and University levels will be organized. The Project will also support development of more efficient governance activities.

The Project will lay major emphasis on monitoring and evaluation. The prime responsibility of monitoring will lie with the institutions themselves. The management structure at the Institutional level i.e. the Board of Governors (BoG) along with Head of the institution will monitor the progress of Institutional projects on a regular basis and provide guidance for improving the performance of institution in project implementation. The information from project institutions will be collected through a scalable web-based Management Information System (MIS). State Governments will also regularly monitor and evaluate the progress of institutions. The Government of India and the World Bank will conduct bi-annual Joint Reviews of the Project with assistance from the National Project Implementation Unit (NPIU). The monitoring will be based on Institutional Development Plans (IDPs) and Action Plans for ATUs prepared by each project institution and achievements will be measured through a set of performance indicators. The monitoring will focus on implementation of reforms by institutions, achievements in project activities under different sub-components, procurement of resources and services, utilization of financial allocations and achievements in faculty and staff development and management development activities.

In the project, the technical assistance to AICTE is planned which will include designing an assessment system to track student learning at different points of the undergraduate program. Surveys of students, faculty, non-teaching staff and administrators will deepen insight into how institutes address specific problems related to student learning. Assessments will be designed to provide feedback to institutes on how and where to improve, without putting undue pressure on students.

In this project, the fund will be linked to the Disbursement Linked Indicators (DLIs) and will be disbursed only after achieving and verification of some of the indicators.

5 Project Design:

TEQIP seeks to enhance quality and equity in participating engineering education institutions and improve the efficiency of the engineering education system in focus states.

The Project will support two components:

Component - 1: Improving quality and equity in engineering institutions in focus states

➤ **Sub-component 1.1 : Institutional Development for Participating Institutions**

An estimated 90 Engineering Education institutions meeting (progressively) the enabling mechanisms and based on quality of Institutional Development Proposals (IDPs), will be selected.

Institutions are required to define the activities in their IDP that they want to carry out in the project. These activities should be under the scope of the project and are those that fulfil the objectives of the project. However, some of the suggested activities under the scope of the project are given below:

- Procurement of Goods (equipment, furniture, books LRs, software and minor items) and Minor civil works.
- Improvement in Teaching, Learning and Research competence.
 - Improve student learning,
 - Student employability,
 - Increasing faculty productivity and motivation,
 - Establishing a twinning system,
 - Twinning arrangements with high performing institutions under Sub-component 1.3 to build capacity and improved performance
 - Recruitment and retention of high quality faculty (through better faculty appraisal systems and the faculty recruitment plan).
(Consultant services if required, can also be procured for the above said activities.)

➤ **Sub-component 1.2 : Widening Impact through ATUs in focus states**

An estimated 8 ATUs meeting the enabling mechanisms will be selected with matching contribution equal to project allocation.

The various activities are to be supported by the Action Plans from the ATUs. Some of the suggested activities are:

- **Procurement of Goods (equipment, furniture, books LRs, software and minor items)**
 - Establishing/improving ERP/management information system for student, staff and faculty data
 - Improving financial management and procurement
 - A modern HR system for efficient personnel management
- **Improvement in Teaching, Learning and Research Competence of affiliated institutions**
 - Mentoring of affiliated institutions and promoting of applications to UGC/NBA

- Increasing faculty productivity and motivation
- Twinning arrangements with ATUs under Sub-component 1.3 to build capacity and improved performance
- Preparation of massive open online courses (also referred to as MOOCs), facilitating access of institutions to MOOCs
- Filling up of faculty vacancies
- Developing credit-based systems such that students in institutions could use select e-learning courses as part of their degree programs
- Greater access to digital resources
- Integration with Swayam platform etc.
- Improving institutional governance
- Improve student learning
- Student employability
- Centralized Research hubs opened to all faculty

(Consultant services if required, can also be procured for the above said activities.)

➤ **Sub-component 1.3 : Twinning Arrangements to Build Capacity and Improve Performance of Participating Institutions and ATUs**

Institutions (already participated in TEQIP-I and/or II)/ATUs will be selected on a competitive basis based on pre-defined eligibility criteria. The evaluation will be based on quality of IDPs. The proposal should include establishing a mentoring system for twinning arrangements to build the capacity and improvement in performance of institution/ATUs participating under sub-component 1.1/1.2 respectively.

Institutions are required to define the activities in their IDP that they want to carry out in the project. These activities should be under the scope of the project and are those that fulfil the objectives of the project. However, some of the suggested activities under the scope of the project are given below:

- Procurement of Goods (equipment, furniture, books LRs, software and minor items) and Minor civil works
- Improvement in Teaching, Learning and Research competence
 - Improve student learning
 - Student employability
 - Increasing faculty productivity and motivation
 - Establishing a twinning system
 - Twinning arrangements with institutions under Sub-component 1.1 to build capacity and improved performance
 - Individual Institutional mentors

(Consultant services if required, can also be procured for the above said activities.)

Component-2: System Level initiatives to strengthen sector governance and performance

This component will support MHRD and key apex bodies in engineering education, including AICTE and NBA, to strengthen the overall system of engineering education. The activities are:

- Provide technical assistance to AICTE and NBA,
- Professional development of Technical Education and TEQIP administrators in the project States and project institutions,
- Initiatives for Effective Governance System of institutions at the level of Board of Governors,
- Implementing Direct Benefit Transfer System to ensure fund transfer electronically to SPIUs and institutions, and
- Project monitoring & evaluation.
- All institutes and ATUs in the Project, as well as those government and government-aided institutes who participated in TEQIP I and II but are not participating in TEQIP III and ATUs not in focus states, will be linked to the National Knowledge Network. Last mile connectivity will be provided by the Project.
- 24/7 broadband connectivity and Wi-Fi access in all academic and administrative buildings and hostels.
- Developing or establishing technology learning centers at all universities which affiliate engineering colleges

6 Sustainability of the Project institutions:

The overall project focus on institutional development has sustainability built in the design of the project. The project's emphasis on well-functioning government bodies, more delegated authority to manage their affairs, and capacity to generate own revenues, involve changing behaviour of key players at a fundamental level. TEQIP I and II required institutes to put aside specific funds for the ongoing maintenance and development of the institute once the project period ended; this will continue in TEQIP III.

- TEQIP III institutes will be required to deposit at least 8% of their revenue every year into a Sustainability Fund. In TEQIP II, this amount has been growing every year – we expect the same trend in TEQIP III.
- A key aspect of the Twinning Arrangements proposed in the project is to develop long-term relationships between colleges. This will help sustain reforms in teaching, learning, research and institutional governance envisaged under the project. Similarly, the IITs and IIMs have been working on strengthening internal systems for sustaining reforms.
- The Faculty Recruitment envisaged for each focus state will build a system for recruiting and retaining adequate numbers of high-quality faculty. This Plan will be expected to provide a long-term solution to the problem of faculty recruitment and retention (not just during the project period).
- The governance-related reforms under the Project, such as UGC autonomy, high-quality BoG and accreditation are expected to put colleges on a long-term path of excellence, which will include innovations in areas relating to internal revenue generation

DETAILED PROJECT DESCRIPTION

COMPONENT 1 : IMPROVE QUALITY AND EQUITY IN ENGINEERING INSTITUTIONS IN FOCUS STATES

Sub-component 1.1 : Institutional Development for Participating Institutions

1. Objective:

To focus on improving quality and equity in engineering education in all government and government-aided institutions and technical universities, including ATUs, in seven low-income states (LIS), three hill states, all states in the North-East of India, and Andaman & Nicobar Islands.

2. Scope:

Following types of educational institutions will be eligible for submission of IDPs and if selected, for funding under this Sub-component:

- Government and government aided affiliated institutions from seven Low Income States (LIS), 8 States in North-East of India, three Hill states (Himachal Pradesh, Jammu & Kashmir and Uttarakhand) and Andaman and Nicobar Islands (a union territory (UT)),
- Technical Universities/ Deemed to be Universities or their Engineering Faculty/ Departments/ Constituent Institutions, and
- 08²National Institutions of Technology (NITs) in North East of India.

These institutions (approximately ninety of them) would be eligible for submitting IDPs if the enabling mechanisms (as described in Section 4) are in place and if selected would receive project funds, for the improvement plans projected in their respective IDPs, in two cycles

Following types of educational institutions/departments **will not be** eligible for being funded directly under this Sub-component:

- Polytechnic institutions,
- Architecture, Management and Pharmacy institutions or departments,
- Master of Computer Application Departments/institutions, and
- Private unaided institutions.

3. Strategy:

The objective of this sub-component is to improve the learning outcomes and employability of graduates and the research pursued under post-graduate programs.

Institutions which meet the enabling mechanisms will receive project funds in Cycle 1. These institutions will receive specialized support from NPIU, SPIU and mentors in framing their comprehensive and coherent Institutional Development Plans (IDPs), which would define the key needs of the institutions, planned set of reforms and activities thereof, timeline for activities and measures of success. All IDPs will be based upon iterative

²The NITs in Tripura, Arunachal Pradesh, Meghalaya, Mizoram, Manipur, Nagaland, Sikkim & Jammu & Kashmir.

consultations with a wide range of stakeholders, including faculty, institution administrators, students, parents and industry.

Cycle 2 institutions are those which do not have the enabling mechanisms in place. These institutes will benefit from “seed persons”, non-financial assistance and seed money of approx. Rs.50.00 Lac in respect of each institution from MHRD through SPIUs to motivate, facilitate and achieve the enabling mechanisms. Seed persons are expert mentors who can work with the state government and the institutions to identify a path to achieving the enabling mechanisms, and to help with the preparation of the IDPs. In addition, seed money shall be used for specific activities with the objective of motivating faculty and students to work toward improvement of their institutions and to provide some immediate support to students’ learning. These will be:

- training of staff in financial management and procurement processes
- campus Wi-Fi
- e-library
- campus environment plan and
- smart classrooms

The seed money will be available to institutions on a rolling basis that is, as soon as they have met the enabling mechanisms and have comprehensive and coherent IDP October 2018, will receive project funds to be used in accordance with their IDPs. The activities to be funded under the IDPs will be the same as for Cycle 1 institutions.

Institutions which do not meet the enabling conditions by October 2018 will not receive any grant under the project.

Institutions participating in this Sub-component cannot apply for Sub-component 1.3.

4. Deliverables:

The institutions participating under this Sub-component will be responsible for the following set of deliverables:

- a. Increase in the average score of students participating in tests designed to measure technical and critical thinking skills
- b. Increase in percentage points of NBA accredited Undergraduate programs and Post-graduate programs
- c. Increase in Transition rate of undergraduate engineering students from the first year to second year
- d. Percentage of students from traditionally disadvantaged groups in total enrolment in participating institutions
 - i. SC/ST
 - ii. Women
- e. Direct project beneficiaries
 - i. Total number
 - ii. Female beneficiaries

- f. UGC autonomous status
- g. Increase in percentage of PhD students in total enrolment in engineering disciplines
- h. Percentage of sanctioned faculty positions in participating institutions filled by regular or contract faculty, contracted as per AICTE norms
- i. Number of Faculty Trained in either their subject domain, pedagogy or management
- j. Percentage of externally funded research and development projects and consultancies in total revenue
- k. Student, Staff and Faculty Satisfaction Survey
- l. Improved employer satisfaction with engineers recruited in the past year
- m. Board of Governors or Institution/ Department Management Committee meets at least 4 times every calendar and publicly discloses the minutes of all meetings
- n. Annual report in prescribed format

5. Evaluation and Selection:

Selection will be based on attaining the enabling mechanism and the Institutional Development Proposals (IDPs) prepared using the prescribed formats. Information given in the formats should be **verifiable**, concise and supported by documents.

6. Funding pattern:

Institutions having Autonomous status by UGC/Deemed to be Universities/ CFIs will receive INR 15 crores. Other Institutions under this Sub-component will receive INR 10 crores.

For planning of fund requirements under various groups of activities, refer Section-6. Further allocations may be made based on institutional performance against certain benchmarks, on a basis to be determined by MHRD in agreement with the World Bank from time to time. Allocation may also be reduced for non-fulfilment of benchmarks.

7. Possible activities under this Sub-component:

The institutions selected in this Sub-component should determine which activities they need to undertake in order to meet the objectives of this Sub-component; such activities should be set out in the Institutional Development Proposal and may be amended time to time as per Institutional requirement with due approval by the institution's Board of Governors. Possible activities that institutions may wish to consider include:

- Procurement of Goods (equipment, furniture, books LRs, software and minor items) and Minor civil works for improvement in teaching, training and learning facilities
- Improvement in Teaching, Learning and Research Processes
 - Improve student learning
 - faculty and staff training

- increasing capacity for postgraduate education and establishing teaching and research
- improving transition rates of all categories of students and improving non-cognitive skills of students
- instituting academic and non-academic reforms including program flexibility
- Student employability
 - increasing interaction with industry
 - student career counselling and placement
- Increasing faculty productivity and motivation
 - sponsored research, consultancy and other revenue generating activities
- Establishing a twinning system
 - Twinning arrangements with high performing institutions under Sub-component 1.3 to build capacity and improved performance
- Recruitment and retention of high-quality faculty (through faculty reforms fund)

The details of possible activities under the Sub-component 1.1 are :

(I) Improvement in Teaching, Training and Learning facilities

Procurement of Goods [equipment; furniture; books & LR's, softwares; and minor items] and minor civil works that may be required under the Project for improvement in teaching, training and learning facilities. A maximum of 60% (Sub-component 1.1) & 50% (Sub-component 1.3) of total project allocation can be made for procurement by each project institution for this activity.

The various possible sub-activities may be as follows:

- (a) ***Modernization and strengthening of laboratories, establishment of new laboratories and R&D activities :***
 - modernization and strengthening of laboratories for existing UG and PG programmes
 - establishment of new laboratories for new and existing UG and PG programmes
 - Equipment needed for research and consultancy projects
- (b) ***Modernization of Classrooms:*** Classrooms could be modernized with Smart Boards and Computer linked LCD Projectors with screen, which would capture better attention of the students than mere oral lecturing. V-SAT, Video Conferencing and Audio-Conferencing facilities can also be considered for Guest lectures or class lectures depending upon need and feasibility. Classrooms need to be well-lit and ventilated.
- (c) ***Updation of Learning Resources:*** Continuous updating of Learning Resources (books, e-books, e-journals, CDs and professional software) and procuring the same is part of the improvement to be brought about in the teaching learning process. Course specific software to improve teaching learning process may be procured, as required. The faculty needs to be encouraged and trained to use these time saving modern facilities.
- (d) ***Procurement of Furniture:*** Furniture may be required for modernization of existing laboratories, establishment of new laboratories, libraries, Computer Centres and classrooms. Provision would need to be made for such procurement in the Institutional Development Proposal.

- (e) **Establishment/Up gradation of Central and Departmental Computer Centres:** Institutions may need to focus on modernize/upgrade Computer Centres to meet curricular and research requirements. It is desirable that Computer Centres be kept open for extended periods beyond working hours and on non-working days. Proper connectivity with Campus-wide Networking is essential. Purchase of the required Computers at one go may be avoided; it may be phased to ensure that the latest systems are procured.

Institutions would need to enter into Annual Maintenance Contracts after the expiry of warranty period for the computers and associated hardware procured under the Project. Wherever possible, replacement of computers/components by the suppliers/manufacturers to ensure upgradation of the computers procured may be considered.

- (f) **Modernization/Improvements of Supporting Departments³:** Upgradation of teaching and training facilities in the supporting Departments may be considered and included in the IDP so that their contribution is enhanced.

- (g) **Modernization and strengthening of libraries and increasing access to knowledge resources:** Libraries, which are part of every institution, promote self-learning and also support the teaching learning processes. There is a widespread need to keep the libraries open to the maximum extent. There are institutions where libraries are kept open for 24 hours a day throughout the week.

Modernization of libraries could include conversion to Digital Libraries, which would occupy lesser space and make space available for other activities. The institutions can also become member of Indian National Digital Library in Engineering Sciences and Technology Consortium (INDEST-AICTE Consortium). Purchase of books should be through CDs to the extent possible. Even old books, which are available on CDs, should be located and purchased. There needs to be a CD Bank with proper identification and accessibility. The library could be reorganized with adequate computers and connectivity to hostels and Departments through Campus-wide Networking. Subscription to the latest e-Journals could be made. The IDP should clearly indicate the actions that are proposed to be taken for Modernization of Libraries including the cost involved.

- (h) **Minor Civil Works:** The minor civil works to be undertaken by the institutions are to be prioritized as suggested below:

- Repair works: The works under this category could be repair of old structures and/or non-functional components of the existing building.
- Refurbishment works: The works under this category could be related to changing the existing functions of a room to a new proposed function. For example: provision of electrical, water supply and/or waste disposal arrangements in an existing room which is proposed to be used as a laboratory.
- Extension to Existing Buildings: Institutions can construct an additional area in continuation to an existing building within the campus. However, institutions will need to provide justification on the extension works proposed.

Note : *The project institution should follow scrupulously the agreed rules and procedures as set out in the Financial Management and Procurement Manual.*

³ Physics, Chemistry, Mathematics and English/other languages

(II) Improvement in Teaching, Learning and Research Competence

The aim of the academic processes should be to improve the learning outcomes and employability of undergraduates and the research pursued under post-graduate programs. The activities will also address fundamental system-level challenges.

The various possible sub-activities are as follows:

(a) *Improve student learning*

- **Faculty and staff training**

This activity should be closely linked to the overall goals of the institution as also to fulfil individuals' justifiable professional aspirations.

1. **Faculty training** (Applicable for faculty of engineering discipline and supporting departments)

The suggested activities to be conducted are:

(i) *Qualification Upgradation :*

Institutions are expected to encourage faculty to upgrade their qualification from Bachelors to Masters and from Masters to Doctoral degree. If the facilities are available within the institution, the same need to be maximally utilized. Alternatively, the faculty could be deputed to other institutions (within India) for enhancement of qualification. Part-time or sandwich programmes may also be made use of where feasible and necessary.

(ii) *Enhancing knowledge and research competence:*

- **Subject upgradation and research competence :** Subject knowledge upgradation is to make the faculty aware of the advances in knowledge, technologies and research methodologies for improving his/her own performance and for the benefit of students. Short-term and long-term courses are available within India including Summer Schools arranged by Government organizations, institutions and professional Societies. Faculty should be on the lookout for appropriate opportunities.
- **Continuing Education Programmes (CEPs) :** The CEPs at project institutions are to be targeted at the working professionals. The duration of the programmes must be at least one week (5 working days). The participants should preferably be representatives of industries, faculty from other AICTE recognized Engineering institutions and a few faculty of the host institution. The Continuing Education Programmes should be conducted preferably in cutting edge technologies.
- **Participation in Seminars, Conferences, Workshops, etc.:** Faculty is to be encouraged to participate in seminars, conferences and workshops, both National and International. Participation in these would give a good exposure on the developments taking place in different areas. The faculty participating in these should be encouraged to visit close-by institutions and laboratories of his/her interest. Besides, accrual of benefits to students and in their own researches, such participation is expected to bring about collaborations with

academic institutions and R&D organizations within and outside the country. The institutions are required to establish such collaborations through MoUs.

(iii) **Pedagogical Training** : The need for Pedagogical Training at institution using the latest teaching methodologies is strongly felt for improving the teaching and training competence of faculty. The target is to cover maximum number of faculty from the project institutions.

2. **Staff training** :

The staff in an Engineering Education institution fall under two categories:

- (i) **Technical Staff**: The Technical Staff in laboratories and workshops need to be trained in their functional areas including operation and routine maintenance of both the existing and new equipment. They also need training on workshop instructions, upkeep of institutional service facilities, etc. The technical staff also need to be motivated and encouraged to participate in training and to use the newly acquired expertise for the benefit of students and the institution. Institutions are expected to encourage staff to upgrade their qualification. If the facilities are available within the institution, the same need to be maximally utilized. Alternatively, the staff could be deputed to other institutions (within India) for enhancement of qualification. Part-time or sandwich programmes may also be made use of where feasible and necessary
- (ii) **Administrative Staff**: The Administrative Staff also need training in respective functional areas, particularly in the use of modern office equipment, software, office automation, maintenance of records, procedures, etc. The training should also cover motivation for time and material efficiency, and friendliness towards faculty and students.

• **Increasing capacity for postgraduate education and establishing teaching and research**

Increased capacity of PG and PhD programmes is of crucial importance for meeting the large requirements of faculty and for meeting the needs of the Industry. It is also essential to encourage Graduates to join Masters programmes and also pursue Research programmes for being employed as faculty. Institutions receiving funds under the Project are encouraged to seek enhancement of Masters degree seats from AICTE so as to increase the enrolment in Masters programmes.

The institutions could also provide Research Assistantships through TEQIP funds to the meritorious Doctoral students that do not get scholarship through Govt of India or any other scheme. The Research Assistantships are to be provided by institutions as per the prevalent UGC/AICTE norms. The students receiving Research Assistantships will be required to devote 8-10 hours per week for teaching/research.

The assistantships can also be provided to the PhD students in supporting departments viz. Physics, Chemistry and Maths only.

• **Improving transition rates of all categories of students and improving non-cognitive skills of students**

Institutions need to identify those students who need extra support and the type of support needed to reduce their risk of dropping out of college. Some of the reasons for these students needing extra support include: low entry level marks (i.e., inadequate preparedness for the

rigorous engineering curriculum), irregular attendance of classes, lack of self-confidence, low proficiency in the medium of instruction (English) or even in the main vernacular language.

Some possible interventions to improve the performance of weak students are given below:

- Diagnosing Student Weaknesses and Continuous Tracking of Performance
- Improving Performance in Academic Subjects
- Improving non-cognitive skills of students
- Peer Learning Groups
- Appointing Faculty Advisers for Students
- Timing of Remedial Courses and Repeat Exams.
- Improving teacher effectiveness
- Bridge courses

The activities are detailed out in the Equity Action Plan which should be a mandatory part of the IDP.

- **Instituting academic and non-academic reforms**

The eligibility criteria for selection of institutions envisage willingness for implementation of academic and non-academic reforms. For non-academic reforms, institutions are expected to utilize their own funds.

- 1. **Academic Reforms:**

- **Curricular Reforms:** The main purpose of revision of curricula and syllabi for Engineering Education disciplines at UG and PG levels is to effectively prepare students to meet the labour market requirements. Involvement of employers including core Industry in curricular reforms is an essential requirement.

Project institutions, which are affiliated to Universities, will need to get the revisions in the curricula approved by the Competent Authorities till they attain Autonomous Institution status.

Institutions, which are autonomous, can carry out the curricula development and revision themselves by establishing mechanism that would ensure that the curricula meet labour market requirements.

All new and revised curricula, among others, need to imbibe the following:

- 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 Student Performance Evaluation:** Evaluation of students has to be done on a continuous basis, in order to provide opportunities for improvement. Students should be encouraged to participate in tests designed by the National Testing Agency as described in Component 2. Publication of results in the shortest period and allowing the students to see the evaluated papers are some of the innovative measures that can be adopted.

Students and faculty will benefit largely from this reformation of student evaluation process. The faculty may identify the academic weaknesses and then counsel the students as to how they may improve their performance. A brainstorming by faculty with students can help to identify various options for performance improvement. Transparency, fairness, consistency and accountability in grading must be ensured. The aggrieved student may be allowed to see the evaluation. Weak students should be given every opportunity to improve. This will develop a greater respect for the institution by the students. The details are given in the Equity Action Plan.

- ***Performance appraisal of faculty by students:*** Evaluation of faculty performance on a periodic basis should be implemented. The results of this should be used for taking remedial actions for improvement of teaching learning process. The main purpose is to help faculty member to improve his/her teaching/training skills. The assessment by students and the counselling which may follow such assessment needs to be aimed at helping faculty recognize weaknesses and remedy them to improve student learning. An exit assessment taken at the end of the course gives an insight into the total effectiveness of the course, learning achievements and shortcomings and may be useful for future delivery of the course by the faculty. Faculty must be taken into confidence during each assessment and the benefits to the faculty/student and the improvement in quality of education should be well explained. Faculty should be continuously motivated to improve performance. This will ensure a proper mix of proficiency and efficiency in the quality of instruction offered to students.
- ***Faculty incentive for Continuing Education (CE), Consultancy and R&D:*** The initiatives taken by faculty should be encouraged through proper incentives and clear guidelines. All faculty are to be encouraged to participate in organizing and/or attending CE programmes, to offer consultancy to Industry and to take part in R&D activities in the institution. Institution should prepare at the beginning of every semester, a faculty engagement chart which should indicate not only the faculty teaching commitments, but also his/her expected involvement in administration, Continuing Education, collaborative activities, research and development activities including curriculum and laboratory development, consultancy, etc. Faculty efforts for good achievements in this direction should be suitably recognized by the BoG. Institutional efforts for consulting to Industry and involvement in R&D should also be adequately encouraged.

2. Non Academic Reforms :

- (i) ***Exercise of autonomies-- Academic, Administrative, Managerial and Financial:*** For institutions selected under the Sub-component 1.1, obtaining Autonomous Institution status during the Project is mandatory. Institutions are also expected to obtain and exercise reasonable levels of Administrative, Financial and Managerial autonomies.
- ii) ***Establishment of Corpus Fund, Faculty Development Fund, Equipment Replacement Fund and Maintenance Fund:*** Establishment of the four Funds is essential to ensure that the developmental activities continue beyond the Project period. It is, therefore, compulsory that all institutions establish the Four Funds and put substantial amount in each Fund, as per the prescribed mechanism from the institutions own funds but not from the project funds
- (iii) ***Generation, retention and utilization of revenue generated through variety of activities:*** In accordance with the eligibility criteria for States and Union Territories, all project institutions are to be permitted to generate, retain and utilize the entire revenue generated by them including income from tuition fee and other fees and charges from

students. All project institutions are expected to increase revenue generation from a variety of activities such as conducting self-financing teaching and training programmes, testing services, consultancy and research, innovations, patents, commercialization of R&D outputs, sharing of high-tech equipment with Industries, public usage of infrastructure for academic activities, etc. (see Annex-I for details).

Institutions are to utilize the revenue for building up the four funds, development activities, offering incentives to faculty and staff, instituting awards and rewards for students, faculty and staff, etc. with approval from the BoG in accordance with rules developed in consonance with Government Guidelines, if any. These rules need to be in place in each institution within 2 years of joining the Project. Institutions are to periodically report increases in the IRG generated.

- (iv) ***Filling-up existing teaching and staff vacancies:*** Project institutions are to be authorized by States/UTs to fill-up all faculty vacancies on a regular basis (over and above the benchmark value). Till such time that these vacancies are filled-up on a regular basis, appointments on 11-month or longer contract need to be permitted by the States/UTs.

Where needed, the Board of Governors may recruit the desired faculty with incentives. The institutions should also make utmost efforts to fill staff vacancies.

- (v) ***Delegation of decision-making powers to senior institutional functionaries with accountability:*** Delegation of adequate powers to senior functionaries like Deans and HoDs with accountability is expected to help better implementation of institutional projects. The powers and responsibilities of the Director/Principal, Deans, HoDs, Professors and other senior faculty in the department, laboratory in-charges and other functionaries should be clearly spelt out in a decentralized administrative environment. Even junior faculty and staff should know their authority and responsibility for which they would be held accountable.

As a measure of financial reforms, adequate financial powers to the Director/Principal of the institution and other functionaries are to be delegated by the Board of Governors. All actions of the Director in connection with Continuing Education, consultancy, faculty development, seminars and conferences should be reported to Board of Governors.

(b) Student employability

• increasing interaction with industry

Industry-Institute-Interaction Cell (IIIC) can be formed in the institution to promote links to benefit students and faculty and to promote collaborative interdisciplinary research for offering solutions to real life problems.

- (1) The key activity areas in which Industry can participate for the benefit of the institutions are:
- Participating in curriculum design, curriculum implementation, student assessment, training of students, exposing students to new technologies, and providing experts for certain instructional sessions;
 - Providing opportunities for student groups to undertake problem-solving projects;
 - Providing exposure to faculty on industrial practices and latest technologies;

- Participating in such bodies as the Board of Governors, Academic Council, Boards of Studies, faculty recruitment, etc.;
- Assisting institutions in establishing new laboratories, providing literature on new technologies, and offering their shop floors as substitutes for laboratories;
- Training students, faculty and technical staff in new technologies and processes;
- Collaborating in sandwich programme offerings;
- Participating in joint R&D activities;
- Delivering expert lectures;
- Industry senior personnel serving as adjunct faculty;
- Utilizing institutional resources (manpower and physical) for industrial manpower training;
- Developing Postgraduate Education in areas of current and potential high demand; and
- Providing assistance for improving employability including entrepreneurial training, specialized skill training, and training in softer skills required by Industry.
- Conducting short term training programmes in collaboration with institutions.
- Students' internship in Industry.

(2) The key areas in which academic institutions can benefit Industries:

- The existing expertise available with project institutions can be utilized by the Industries for technology assessment, up-gradation and absorption.
- Laboratories in the institutions, especially in select areas of excellence, can be shared with industries on agreed terms.
- Develop innovations, products and technologies which can be adopted by Industries.
- Faculty can be deputed to Industry for problem solving and for joint projects.

- **Student career counselling and placement**

The Career Counseling Cell of the institution shall provide placement assistance to the students in relevant industries/company and also help the students of the institutions in their career planning, preparation for selection tests, summer placement, internship and final placements.

The Career Counseling Cell shall be working on liaising with the senior executives of reputed industries/company for the development of the effective communication links with many prominent industrial and professional organizations.

The Career Counseling Cell shall be making all-out effort to match student's career aspirations with the requirements of the industries or organizations. Keeping in view the demand and preference of the various industries, the Cell shall also be looking for the development of the students. In this direction, various activities like Aptitude test, Group Discussion, Guest Lectures from corporate personalities shall be organized from time to time by the placement cell for the students.

- Program Implementation
- Consultation
- Classroom Instruction
- Assessment
- Career Information

- Counseling
- Placement
- Referral
- Outreach
- Follow-up
- Work Experience

c. increasing faculty productivity and motivation

- Sponsored research, consultancy and other revenue generating activities

The selected institutions are to promote increased participation of faculty in research, R&D projects and consultancy, for example through merit recognition and fiscal and career incentives. Institutions that already have Doctoral programmes should encourage Masters Students to join Doctoral programmes, as explained in the paragraph above. Institutions need to market their services to the industry. The industry should be encouraged to give live problems to the institution for solutions. The faculty who have expertise should be encouraged to take up consultancy assignments, which would directly and indirectly benefit the institution, faculty and students. Internal Revenue Generation (IRG) should receive a boost, and some of the income should be shared with faculty, staff and students as per the norms approved by the Institute's Board of Governors (BoG). Regular interactions through consultancy are likely to promote a healthy and useful relationship between industries and institutions. Care should be taken that consultancy services offered to Industry do not affect the teaching schedules and processes. Institutions need to develop a strategy for enabling faculty to secure consultancy assignments and to complete them timely and successfully. The strategy in this regard is to be detailed in the IDP.

The institution is also expected to encourage UG and Masters students to get associated with Industry oriented/sponsored research programmes under the guidance of senior faculty. This is expected to increase their interest in higher education and research.

Institutions are also expected to offer "Seed grant" for research to faculty members and / or students to venture into innovative research and to strengthen research culture in institutions.

d. Establishing Twinning System: The twinning system will be based upon

- **Twinning Arrangements to Build Capacity and Improve Performance:**

The institutions under Sub-component 1.1 will make twinning arrangements with high-performing state-government engineering institutions (earlier participated in TEQIP-I & or TEQIP-II) selected under Sub-component 1.3. The primary objective of the twinning arrangements will be to support the priorities identified by Sub-component 1.1 institutes in their IDPs and Action Plans respectively. Sub-component 1.3 institutes will provide training and guidance to build the capacity of participating institutes. Twinning arrangements will be formalized through Twinning Agreements between the two institutes. The focus of these Agreements will be knowledge transfer, exchange of experience, optimizing the use of resources and developing long-term strategic partnerships. The exact nature of twinning activity would be determined mutually between the two institutes, but could include interactions at four levels: board of governors (BoG); institute's management/leadership; faculty and students. For instance, activities could entail faculty and student exchange, joint conferences, and management coaching with close contacts between the members of the two BoGs, the two principals, and the deans.

- e. **Recruitment and retention of high quality faculty (through better faculty appraisal systems and the faculty recruitment plan) in focus States** : The project will support states in filling sanctioned posts through hiring of contract faculty at the entry level as per AICTE norms on qualifications and pay, by funding the cost (upto 75%) of such faculty during the project period. Such funding will be based on an understanding with state governments that well-performing faculty hired using project funds will be retained post project, all else unchanged, and any of these faculty retained in the final year of the project will be paid exclusively from state funds.

Establishing a Teacher Enhancement Fund (TEF): This aims to provide additional compensatory funding to technical colleges in order to address the differential in salaries currently existing between regular and non-regular faculty members. In this regard, following points can be considered:

- Establishing a mechanism for which a lump-sum amount of money will be provided to participating institutions to hire faculty members.
- Establishing of a “trust fund” with shared contributions from TEQIP-III, the state government and technical institutions that gradually will build-up reserves to be used in the future to fund differential in salaries for non-regular faculty, at termination of TEQIP-III, in order to support the long-term sustainability of the aforementioned funding mechanism.

The fund utilized for this activity will be made available by MHRD separately under Faculty Reforms fund. This will be over and above the institutions' project allocation.

Note : The approving authority for these activities is BoG / Competent Authority of the institutions except few cases of procurement (including services) where World Bank's No objection is required. In addition, institution may also conduct other activities (not listed here) under the scope of the project and those fulfil the objectives of the project with the approval of BoG/Competent Authority of the institution.

EQUITY ACTION PLAN (INDIGENOUS PEOPLE'S POLICY FRAMEWORK)

1 Objective:

To ensure that all students and faculty in the project institutions have equal opportunity to avail the benefits of the Project with substantial improvement in the performance of students with special attention to the needy and ST and SC categories

2 Scope:

All project assisted institutions will be responsible for preparing and implementing the Equity Action Plan (EAP) as an integral part of project implementation for TEQIP-III.

3 Strategy:

Every institution faces a different challenge to improve academic performance. In addition to the caliber of students in an institution, its facilities, management, quality and efficiency of the teaching faculty, and measures to address students' felt needs including relating non-cognitive skills and behavioral issues have a bearing on student performance. The Project institutions are to make Equity Action Plans (EAP/IIPF) to improve learning outcomes for students and employability of graduates with special attention to the needy ones including those from the SC and ST categories. The project aims to ensure that all participating institutions improve the transition rate of First Year (enrolled) students to the Second Year (a key performance indicator of the project). Institutional targets are set for all students with special attention to socially and economically underprivileged groups including SC, ST, OBC and Women students. Achievement must be maintained during subsequent years so that high graduation rates are achieved by every institution. All Institutions should include Institutional EAP in their Institutional Development Proposals. The EAP should be a part of each Institution's MoU with the concerned project authorities.

The NPIU and the SPIUs will assess the efforts of project institutions in the implementation of the Equity Action Plan to ensure equity at all levels in the project institutions.

Measures for Improving Academic Performance of students: Institutions need to identify and support students who need extra support. Various criteria might be used to identify the students in need, including for example, those who fail more than 40 or 50 percent of their subjects in a given year, lose a year or more during their degree programme, or consistently get low marks. Some students may fail to secure employment at the end of their degree programme because of overall low performance or inadequate skills at the completion of the course. Some of the reasons for these weaknesses are: low entry level marks (i.e., inadequate preparedness for the rigorous engineering curriculum), irregular attendance of classes, low self-confidence, weak language skills in English, which is the medium of instruction or even in the main vernacular language. Generally it is observed that weaker students do not communicate their difficulties and do not seek help due to factors including low self-esteem or even self-inflicted stigma. In addition, students may not do well because of a number of institutional factors, including vacancies in faculty and technical staff positions, deficiencies in faculty teaching skills, lack of library facilities or restricted opening times, poor academic support, inadequate

student support services, lack of effective monitoring of student performance, or regular feedback to students, inadequate hostel facilities, poor quality placement offices, etc.

Some possible interventions to improve the performance of students with special attention to the needy:

1. The participating institutions should strive to ensure that all students perform well academically and achieve their post-institution goals i.e. securing good jobs or entering post-graduate courses, according to their choice, suited to their capabilities, and in line with the education they have received. Institutions must also ensure that all the faculty be well trained in Pedagogy especially with regard to addressing the needs of weak students. Some possible interventions to improve the performance of weak students include the following.
2. ***Diagnosing Student Weaknesses and Continuous Tracking of Performance*** through academic screening on entry and steps to bridge the knowledge gaps in specific areas requiring attention. It is essential that such screening tests are professionally planned and executed, which could benefit from a number of commercially available test modules. In addition, institutions should ensure that tests are appropriate (some test assess academic achievement while others test learning skills and others yet test the psychological profile of students). Properly devised tests on entry and at the start of semesters can provide information about specific areas where a student needs help. Such tests can be particularly be helpful before ‘tough’ subjects begin each semester, and efforts can be made to strengthen classroom strategy and additional academic support by a student mentor, or faculty. The institutions will establish procedures and mechanisms to monitor the progress of students at various stages of the academic tenure. Reviewing student attendance in connection with performance and advising students to attend classes and make up missed classes will be emphasized.
3. ***Improving Performance in Academic Subjects***. Students can be helped with **remedial classes** during semester hours or during vacations can be helpful. Additional classes can be held during institution hours when no classes are held but **teachers** are available to help students address their weaknesses. Extra inputs could be provided in more innovative ways such as: **tutorial classes** where students interact with each other and also with a faculty / PG student. The institutions will prepare and offer “**Bridge Courses**” for the students in need during the first year which could include extra classes, notes and guidance where teachers are available to students formally and informally. Institutions should also remember that having the same faculty simply re-teaching the same classes to the same students – without variation in approach or teaching methodology – is unlikely to be successful.
4. ***Enhancing English and Communication and Presentation Skills***. One key factor affecting academic performance of students and employability of graduates is their inability to effectively communicate in the English language. The EAP/IPPF therefore emphasizes taking measures to help students improve their proficiency in English. The strategy could include English language labs, tutorials for technical and everyday English, opportunities to make presentations in the classroom, etc. Language and soft-skills development should be provided throughout the degree programme and not only in

the final semesters in preparation for job interviews. Interactive and confidence-building programmes should also be implemented.

5. ***Building Students' Non-cognitive Skills.*** Non cognitive attributes refer to academically and occupationally relevant skills and traits which may not be purely intellectual or analytical in nature. Non cognitive skills are personality and motivational habits and attitudes that aid academic and professional performance of students. Non cognitive traits, skills, and characteristics include perseverance, motivation, self-control, and other aspects of conscientiousness. Non cognitive skills deficit may accumulate over time and affect overall success in life. Non cognitive skills development can help in reversing or limiting delays or deficiencies in cognitive development and academic performance. The EAP could include conducting non-cognitive labs to help students understand and deal with their habits and traits accounting for their learning deficiencies and poor academic performance.
6. ***Promoting Peer Learning Groups and Fostering School Spirit.*** Certain institutions have established peer learning groups during TEQIP-II, which has benefitted students. Peer learning groups help students share their experiences and address their academic difficulties. Students often like to study in groups, and forming groups of 10-12 good and weak mixed students can be effective. They can revise lessons and undertake group projects also. Good students can help weak ones – the act of tutoring also helps good students.
7. ***Student Mentors and Faculty Advisers for Students'*** peer-to-peer mentorship and tutoring worked well in some institutions during TEQIP-II, since students feel comfortable with other students. Faculty mentors played an integral role in observing and monitoring student progress and serve as guides throughout students' higher education experience. Therefore, TEQIP-III will emphasize 'vertical' integration with senior students mentoring juniors and facilitating student-faculty interactions with faculty acting as resource person to the student groups. Faculty Advisers (FA) can be appointed to support Student Mentors aiding a group of 6-8 students entering the first year. The process can help establish a close relationship with fresh students, orienting them regarding institution practices and monitoring their progress through semesters. Students in all four years may need this guidance as different problems develop at different times. The relationship can be more informal than formal, allowing students to ask for help when they need it and share their problems without fear. The FA could identify any non-academic reasons for a student's weak or declining performance, and accordingly advise her/him on appropriate remedial measures. The FA can also mediate between a student and other faculty, if necessary, or seek help from an HOD, Dean, Principal, etc., and get in touch with parents when necessary. Faculty may be given some professional training in mentoring and counseling to play this role.
8. ***Better Scheduling Remedial Courses and Repeat Exams.*** An important difference that emerged between institutions in the Equity study that partly explains why some institutions have a large backlog of students in the final year is the timing of the repeat exams that can be taken by students who fail in several subjects. In the better situation, make-up exams are held within a month or so of the original exams, while in the other

institutions they are held a semester or a year later. This has two important negative fall-outs – the students have a heavy load as they must take exams simultaneously for both the new semester's subjects as well as for the subjects they fail; and they cannot attend classes in the subjects they have failed as either the syllabi or the institution do not allow this. Thus, they do not get any additional teaching in the subjects in which they are weak unless they resort to coaching classes or other private means. This may in turn result in cumulative failures, leading some students to take six, seven or even more years to complete the four-year engineering course! In the better situation, on the other hand, remedial classes are provided by the institution during the month before the repeat exams, which is usually during vacation, and the combination of the additional teaching and exams immediately thereafter enables the students to go on to the next year without a burdensome backlog. A committee appointed by NPIU could help develop a Guidance Note on how to execute transition support plans.

9. ***Improving teacher effectiveness*** will require several measures including the following:

Updating Domain Knowledge to enable faculty members keep abreast of latest developments in domain knowledge. (ii) Training in Pedagogy will support teachers in select undergraduate institutions to undertake refresher training in pedagogy to enhance their effectiveness. (iii) Fostering Positive Teacher Behaviors will involve behavioral training to the teachers to enhance their self-understanding, improve their sensitivity, leadership and management skills. A third important area for improvement of teacher performance is their behavior toward students (especially weak ones). An important 'first resort' is to counsel teachers who show bad behaviors, help and guide them. Besides having a formal Counselor, Faculty Mentoring program could be introduced to help faculty members that are younger and may seek help. (iv) Faculty Appraisal can be undertaken with using self-assessment forms and under the oversight of the HOD, Deans, Faculty Committee, etc. It can usefully include student evaluations but also monitor content delivery in accordance with the course file (ref. Guidance brief).

10. ***Supporting Innovation and Knowledge Sharing***: TEQIP-III will support the institutions of excellence to bi-annually organize innovation and knowledge sharing forums for the benefit of students and young researchers from surrounding institutions. These events will promote competition amongst institutions to show case innovations and enable students to share their learning experiences, facilitate interaction with industries and private/public R&D institutions and thus expose them to break through technologies.
11. ***Implementation Arrangements***: Each participating institution will prepare and include the EAP/IPPF in the Institution Development Plan submitted for funding. There shall be institution level student-faculty committees to approve and monitor the implementation of the EAPs. The Dean, Students' Welfare will be generally the nodal officer responsible for implementing the EAP. The institutional arrangements will integrate professional capacity and expertise to plan and implement actions in fulfilment of the EAP/IPPF. The NPIU, SPIUs and other project institutions will have a nodal officer responsible for monitoring and supporting the EAP implementation.
12. ***Monitoring and Evaluation***: The EAP/IPPF implementation shall be monitored as a part of the overall project monitoring. TEQIP II has built a strong web-based MIS, which

has helped in project monitoring and evaluation, specifically in using performance information to provide incentives to institutions. In TEQIP III, a special effort will be made to build on existing MIS systems wherever possible, and ensure the MIS is adapted to each institution's specific needs, allowing it to report on TEQIP III indicators as well as other indicators deemed useful for the institution's own internal decision-making. The MIS system will also be designed to generate the data on the students' performance with special attention to the vulnerable categories. In addition, the project will work with the AICTE, the NBA and ATUs to harmonize their reporting requirements, to further simplify the reporting process for institutions. A core database, linked to existing MIS systems at institutions will be created and maintained, with server access provided by the MHRD. For institutions without an MIS in place, a supplementing database will be created and linked to the core database. This will enable the MIS system to provide policy-makers, at national, state and institutional levels, a summary analysis of the collected data through an interactive, web-based application capable of generating reports for all TEQIP III indicators and providing the unit level data required for the computation of each indicator. The system will incorporate a series of validity checks to avoid spurious data entry. An IT firm will be hired for the development, installation, training, and capacity building for the TEQIP III MIS and databases. The MIS will be funded through Component 2. Training provided to M&E staff at the national, state and institutional levels will strengthen M&E capacity.

The Table below summarizes the EAP/IPPF Actions for the students and faculty.

Details of Equity Action Plan

S. No	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
(i)	To identify weaknesses in all students and take remedial steps	Institutions to plan and administer diagnostic tests at the beginning of each semester in order to identify the types of assistance required. Accordingly, institutions will execute bridge courses/remedial teaching (e.g. extra classes, tutorials to be conducted by other faculty) and other measures to bring all students to the required level of proficiency to cope with the main subjects	Project institutions	Diagnostic tests and plans completed at the beginning of each semester; remedial measures carried out continuously thereafter	Percent of students transiting from First to Second year with all first year courses passed
(ii)	To improve language competency, soft skills and confidence levels	The preparation of guidance tools for teachers to transact with students that are culturally or linguistically less exposed to professional technical education / by including English as part of the main syllabus	Project institution	Continuous	Better transition rates for first and second year students

S. No	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
(iii)	Institution to improve non-cognitive and soft skills including communication and presentation skills through their wide use in curricula / project based work, and where needed, to provide special skills training to students with priority to the weak students	To be decided by the institution. This could include special labs or workshops or sessions with external experts/ consultants	Project institutions	Continuous	Improvement in job placement of students, especially among those with disadvantaged backgrounds
(iv)	Give under-qualified teachers priority in opportunities to upgrade their domain knowledge	Institutions to identify needs and indicate in their Faculty Development Plan how they would build equity to upgrade faculty qualifications and skills	Project institutions and SPIUs	Yearly	Increase in the percentage of teachers enrolled in M. Tech. and Ph. D. reported yearly
(v)	Training of teachers in subject matter and pedagogy, particularly to improve the performance of weak students	Training Needs Analysis (TNA) to be carried out for all teachers in all project institutions by appropriately qualified/trained experts, especially to teach weak students	Project institutions and SPIUs	TNA to be done before the preparation of Institutional Development Proposals; reporting every six months and remedial actions on a continuous basis	Percent of planned training completed as reported/ aggregated 6 monthly
		All institutions to prepare Faculty Development Plan for the Project period (using identified providers for Pedagogy or National Training Calendar for subject training), giving priority to the teachers with the most significant gaps in knowledge and skills as diagnosed by the TNA	Project institutions and SPIUs		
		All teachers are to be covered by training in pedagogy including teaching of weak students, helping students with special needs achieve their learning goals, and an understanding of equity and equality, students' rights and entitlements, i.e. non-discriminatory practices	Project institutions and SPIUs		

S. No	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
		Domain training is to be done on the basis of need/link up with industry to keep abreast of cutting edge technology	Project institutions and SPIUs		
		Institutions to report to the SPIUs on progress in training plan every 6 months (by name, department, individual characteristics (including SC/ST/OBC, M/F, age, years of service, level, degree qualifications), type and duration of training received, etc., and the SPIUs to send aggregated reports to the NPIU	Project institutions		
		Training providers to furnish training evaluation results (which indicate the extent to which the gaps in a trainee's knowledge or skills including teaching of weak students have been addressed) to Institutions and the SPIUs	Project institutions and SPIUs		
		In addition the Project would carry out Satisfaction Surveys to assess training achievements	Project institutions and SPIUs		
(vi)	Make campuses physically and socially gender-friendly; especially provide adequate and suitable facilities to women students and faculty	Institutions to specify in their IDPs what actions they would take to ensure a gender—friendly campus—both 'soft' actions, and minor civil works where necessary	Project institutions	At the time of IDP and actions implemented as proposed	Institutions to provide descriptive reports of actions taken including number of beneficiaries
(viii)	Hold innovation and Knowledge Sharing Workshops yearly to improve knowledge sharing	The SPIUs and key Institutions to organize workshops with thematic focus	NPIU / SPIUs	Yearly	
(viii)	Sharing information and knowledge about engineering courses and institutions	By organising rural camps at the school level	SPIU / State Govt. Dept. dealing with secondary and technical education	Yearly	
(ix)	Provide appropriate infrastructure for physically challenged students	By providing ramps, lifts, toilets and hostel facilities	Project institutions	As required	

S. No	Items	Actions	Implementation Agency	Frequency	Monitoring Indicators
(x)	Special efforts for training/ internship/ placement of weak students	By greater networking with industry	Project institutions	Continuous	
(xi)	A two tier grievance redress mechanism (GRM)	Introduce, and publicise widely, a two tier GRM at the (i) institution; (ii) State level. In addition to a hotline (telephone), an email address would ensure anonymity.	Project Institutions and SPIUs	Continuous	
(xii)	Ensure that institutional mechanisms to protect and address the needs and concerns of women students are established.	Strengthen/ establish Gender Committees in each institution	Project Institutions/SPIUs	Continuous	
(xiii)	Develop a standard model for tracking of student progress *				
(xiv)	Peer Learning Groups of students	Develop Peer Learning Groups of students for joint study and joint projects (Senior student and faculty may be the resource person)	Project Institutions	Continuous	
(xv)	Appointing Student Mentors and Faculty Advisers for Students	Assigning Student mentors for 6-8 junior students and Appointing Faculty Advisers for 10-15 Students/student mentors. Faculty Advisers can guide the students and monitor their progress	Project Institutions	Continuous	

* Shall be developed by the experts (from IITs and NITs)

Indicative Category-wise Funding for Key Activities per Project Institution (Government Funded, Government Aided Institution, NITs) selected under Sub-component 1.1

S. No.	Key activities	Category of Expenditure (Head of expenditure)	Percentage (%)	Cost (Rs. in crore) for non-autonomous institution	Cost (Rs. in crore) for autonomous institution/New NITs
1	Procurement of Goods (equipment, furniture, books LRs, software and minor items) and civil works for improvement in teaching, training and learning facilities	Procurement	Up to 60%	6.00	9.00
2	Improvement in Teaching, Learning and Research competence' <ul style="list-style-type: none"> ▪ Improve student learning ▪ Student employability ▪ Increasing faculty productivity and motivation ▪ Establishing a twinning system <ul style="list-style-type: none"> ○ Twining arrangements with high performing institutions under Sub-component 1.3 to build capacity and improved performance 	Academic	At least 30%	3.00	4.50
3	Incremental Operating Cost	IOC	Up to 10%	1.00	1.50
TOTAL			100	10.00	15.00

Note:

- The Incremental Operating Cost means the costs of operation and maintenance of equipment, office expenses, hiring of vehicles, consumables, salaries and allowances of regular and contract faculty and staff against posts created under the Project. It will also include travel costs incurred for the Project Management activities i.e. visit to the NPIU, the SPIU, Universities, etc.
- Procurement of consultant services, if required, for the activities bulleted at Sr. No. 2 are permitted. The expenditure on procurement of consultant services is to be booked against the “Academic” head of expenditure. The services of consultant are to be procured by following the World Bank norms and procedures through the PMSS.
- Fund from Procurement and IOC Head of expenditure can also be re-appropriated to Head of expenditure for academic activities but not vice versa.