



POORNIMA

INSTITUTE OF ENGINEERING & TECHNOLOGY



New Education Policy 2020

ISI-2,RIICO INSTITUTIONAL AREA,SITAPURA,JAIPUR-302022(RAJASTHAN), INDIA

New Education Policy 2020

The Vision of this Policy

This National Education Policy envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower. The Policy envisages that the curriculum and pedagogy of our institutions must develop among the students a deep sense of respect towards the Fundamental Duties and Constitutional values, bonding with one's country, and a conscious awareness of one's roles and responsibilities in a changing world. The vision of the Policy is to instill among the learners a deep-rooted pride in being Indian, not only in thought, but also in spirit, intellect, and deeds, as well as to develop knowledge, skills, values, and dispositions that support responsible commitment to human rights, sustainable development and living, and global well-being, thereby reflecting a truly global citizen. PIET aims to fulfill this vision by incorporating this policy of NEP 2020.

Preamble of NEP 2020 for PIET

PIET believes in the holistic development of the student as well as faculty comes under the category of Higher Education. Higher education significantly contributes towards sustainable livelihoods and economic development of the nation. As India moves towards becoming a knowledge economy and society, more and younger Indians are likely to aspire for higher education.

PIET aims to inculcate values based education by introducing the curriculum based learning. PIET will focus on more multidisciplinary undergraduate degree. Research and Publication has been focused for the achieving the Sustainable Development Goal. Faculty has been trained by various FDP, Workshop and Seminars to understand the role and responsibility for the holistic development.

Objective:

In view of the National Education Policy-2020 (NEP-2020) of the Government of India and the Guidelines of the University Grants Commission (UGC) for the Learning Outcomes-based Curriculum Framework (LOCF) under the Choice Based Credit System (CBCS), Curriculum and Credit Framework for Under Graduate Programme in Poornima Institute of Engineering and Technology.

To cater to the needs of students with diverse talents, aspirations and professional requirements, it is necessary to make qualitative changes in its undergraduate and postgraduate programmes. In this backdrop, the National Education Policy-2020 (NEP- 2020) has recommended a Multi-disciplinary Undergraduate Programme with multiple exit and entry options with Certificate/ Diploma/ Degree at each of the exit. PIET is adopting NEP-2020 curriculum framework from the Academic Year 2023-2024.

PIET NEP-2020 Regulations provide detailed procedure for implementation of different provisions of NEP-2020 in Higher Education in terms of Under Graduate Degree Programmes. The Regulations ought to preserve the academic autonomy of the Departments/ Colleges/ Institutes in formulating curriculum, outlining learning outcome descriptors, pedagogical approaches, evaluation methods and assignments of grades.

Chapter 1

Multidisciplinary/Interdisciplinary

The National Education Policy (NEP 2020) envisions an education system anchored in Indian culture that directly helps to converting India, or Bharat, into a just and thriving knowledge society over the long term. The Institute has adopted the National Education Policy's vision, which is to deliver high quality education to help our country's people resources grow into global citizens.

- At Poornima Institute of Engineering and Technology discussion among the faculty members were initiated on the key principles of NEP such as diversity for all curriculum and pedagogy with technological innovations in teaching and learning, encouraging logical decision making and innovation, critical thinking and creativity.
- In view of the NEP, Institute has initiated process of establishing new interdisciplinary centres integrating different departments in addition to the existing inter/multidisciplinary research and academics. Academic programmes are redesigned to include Multidisciplinary /Interdisciplinary courses as electives. All programmes are designed in such a way that students get maximum flexibility to choose elective courses offered by other Departments.
- Poornima Institute of Engineering and Technology has also already started taking appropriate steps and constituted a core committee headed by the Director/Principal of institute for Effective Implementation of National Education Policy-2020. The committee has prepared a detailed road map for phased implementation of NEP. A few programs/webinars on road map of NEP education have also been organized by the institute. Poornima Institute of Engineering and Technology being multidisciplinary Institute offering programmes in various disciplines has a unique academic governance structure for programmes and course creation. The structure being organized around various disciplines makes it conducive for ensuring multidisciplinary/interdisciplinary.
- The institute has taken the initiative of ensuring a minimum desired level of multidisciplinary across all its programmes. Institute has been and will continue to organize sessions with experts on NEP awareness and process amongst its faculty & students.
- Subjects have been offered in the PIET like Human Values and Professional Ethics, Sports Lab, Technical Communication to make it multidisciplinary.
- SPD has been organized on various multidisciplinary subjects like mental Health, Time Management, Stress Management, Indian Knowledge System.

Chapter 2

Academic bank of credits (ABC):

Poornima Institute of Engineering and Technology, Jaipur (PIET) is affiliated to Rajasthan Technical University, Kota (RTU) and Rajasthan Technical University is an official member of the National Academic Depository which is a government endeavour to offer an online repository for all academic awards under the Digital India Programme. From 2020 onwards, Rajasthan Technical University is uploading students' mark sheets and degree certificates through the NAD platform.

ABC may allow students to tailor their degrees or make specific modifications and specifications instead of following the rigid, regularly prescribed degrees or courses of a single institute, or independent colleges. It is achievable through multiple entry and exit so that students can graduate according to their time preferences by providing mobility between different institutions of higher education.

The Institute is considering and will soon put into practice the idea of an academic bank of credit. The Institute has established a committee for this goal in order to provide the groundwork for a road towards an effective integration of ABC in its academic programmes.

Action Plan for further implementation under NEP 2020:

1. PIET proposes to update its program's scheme and syllabus with Electives. Interdisciplinary courses & Multiple Entry –exit options in the semester level.
2. To implement ABC on annual basis as per NEP 2020.
3. To identify partner universities for ABC transfer amongst each other and to inform about it to the students.
4. PIET will identify programs to be offered to other participating Universities of the ABC scheme of UGC.
5. Mark statement structure and result processing systems would be upgraded to make them compatible with the ABC structure after appropriate approval from authorities.
6. **Credit Based Choice System (CBCS):** The CBCS provides choice for students to select from the prescribed courses (core, elective or minor or skill-based courses). Under the CBCS, the requirement for awarding a degree or diploma or certificate is prescribed in terms of number of credits to be completed by the students.
7. **Course:** Usually referred to, as 'papers' is a component of a programme. All courses need not to carry the same weightage. The courses should define learning objectives and learning outcomes. A course may be designed to comprise lectures/ tutorials/laboratory work/ field work/ outreach activities/ project work/ vocational training/viva/ seminars/term papers/assignments/ presentations/ self-study etc. or a combination of few of these.
8. The curriculum combines conceptual knowledge with practical engagement and understanding that has relevant real world application through practical laboratory work, field work, internships, workshops and research projects.
9. PIET has launch Integrated UG with entry-exit facility. These academic programmes will have lateral entry facility in all the years of study.
10. First Year ends with the award of a Certificate, second year with a Diploma, third year with a UG degree and fourth year ends with Honours/Research Degree.

Action

- In PIET MOOC, SWAYAM NPTEL courses has been introduced for the students.
- Students were given incentives on the successfully completion of this course.

Chapter 3

Skill development:

At present PIET has created an eco-system to hone career relevant skills of the students by establishing **PBIC**. Skill enhancement in students is ensured through various methodologies. Like The PBIC conducts various career-oriented activities, in association with various industries and organizations. The departments identify the requisite skills essential to achieve the graduate attributes. The programmes have skill based experiential learning as a core component of every program. PIET organises workshops etc. which are specifically aimed at imparting precise skill sets to the students; for example, Photography, music etc The Institute is making sincere efforts for providing value-based education to the learners and make them responsible citizens and ensuring social justice and empowering the underprivileged and vulnerable sections of the society .Skill based projects, field visits & internships are regularly conducted across all disciplines. PIET has well placed incubation policy and full support to its students for incubation.

- a. Summer vacation is proposed for conducting Internships/ field studies/ exploring/ Scientific Innovations/conducting social/community outreach programmes and such other similar field/work related programmes to have in-depth information of subjects through direct observation and analysis in their natural settings.
- b. Piet focusing on skill development and holistic-multi-disciplinary learning/education across disciplines that would help develop all capacities of human beings-intellectual, aesthetic, social, physical, emotional, ethical, and moral-integrating other skills along with specialized immersion in academics.
- c. Promote credit-based courses on community engagement and service, environmental and value-based education.
- d. Faculty members are encouraged to design courses having components of job-oriented skills. They are also encouraged to adopt innovative methods of Teaching-Learning for imparting the same and to have suitable assessment practices.

Action Plan for further implementation under NEP 2020:

- In future PIET will offer a bouquet of skill-oriented courses in each of the schools of the Institute to offer courses based on Credit System.
- PIET will expand the services of PBIC collaborate with the industry to offer more skill enhancement courses to increase the employability of students.
- PIET will work in the domains of hospitality management, food production and many such domains for provisioning more skilled manpower to society with intend of critical thinking & innovation.
- PIET will launch skill oriented courses for women & girls candidates to deliver equity amongst society.
- Faculty members are also trained to create MOOCs & research.
- PIET will expand faculty development efforts by training them to adopt effective teaching-learning process and research practices.

All Departments/ Colleges/ Institutes to network with Industry/ R&D Labs/ PSUs/ Govt. Departments/ Academic Institutions to facilitate opportunities for students internships with industry, artists and craft persons to improve employability of students.

Chapter 4

Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using

Meaning of IKS)

IKS is a collective range of Indian Knowledge that has exhibited in systematized ways of knowing. Starting from the oldest compositions of knowledge i.e, the Vedic literature to the country's native and tribal folklore, the Indian Knowledge is spread as a spectrum. There is a vast repository of knowledge available not only in Sanskrit, Pali and Prakrit, but also in all native Indian languages. This has been remaining unexplored for the last several decades. PIET tries to focus on arranging the Student Development Program on the Indian Knowledge System.

Indian Knowledge encompasses the Foundational knowledge, Science, Engineering & Technology, Humanities and Social Sciences through a structured classification. IKS (Indian Knowledge System) has evolved over millenniums. It has a wide range of several beaches such as Astronomy, Ayurveda & Yoga (Health and Well-being) Mathematics and Computing, Languages and Linguistics, Metallurgy, Rasa-Shastra, Public Administration, War Technology. Management Science and many more.

PIET Institute offers various value added programmes in domain of Indian Languages, Culture and art.

1. In collaboration with agencies many events have been conducted like Annual Feast AROHAN, and Blood donation Camp, various awareness drives on Self- Safety Workshop and Vigilance Awareness Week, road shows and interactions are conducted to promote our culture and heritage are organized.
2. Various cultural events are regularly organized on Indian knowledge systems, languages, culture and values.
3. To promote local music, art, languages, and handicraft, outstanding local artists and craftspeople are encouraged to serve as Artists-in-Residence and master instructors.
4. Expert Session has been organized to understand the importance of IKS.
5. PIET make student visit to Historical places during Student Inducation Program to get them an understanding with the rich and glorious history of the country.
6. PIET by the various clubs make student visit to Art and Craft Communities to learn their art and craft.
7. PIET organize Literary events including Speech Competition, Debate Competition about the Sharing the life and work of contemporary original thinkers who have made seminal contributions in their field, using IKS framework, would motivate students to explore various dimensions of IKS.
8. PIET encourage faculty must be informed about the opportunities to conduct original research in the IKS domain.
9. PIET encouraged the faculty and Students to do MOOC courses from SWAYAM on the IKS and keep themselves updated.

Action Plan for further implementation under NEP 2020:

1. The Governing Council of institute has directed the various departments to ensure incorporation of courses in all programs that can help us to establish "Arohan" to develop the scope of local languages, culture, traditions, etc.

2. Institute also plans to offer some professional courses in regional language for better delivery amongst all local students
3. Governing Council members and faculty of various schools have been enlightened and encouraged in the workshop on NEP 2020 to incorporate the aspects of Indian Knowledge System in curriculum, giving more emphasis on local and regional languages.
4. Collaborations with partner universities, world-class universities and experts to design and teach multidisciplinary courses on Indian Knowledge Systems, Languages, Culture and Values.
5. Certificates, diplomas, multidisciplinary programs and degrees on Indian Knowledge Systems and Indian heritage.
6. Propose to organize Annual International Conference to promote our culture , heritage and values.
7. All faculties must be exposed to the common underlying philosophical foundation across disciplines in the IKS.
8. PIET will train the master trainer and provide material and to enable teachers to understand the continuous and vibrant tradition of IKS. These materials may be developed by a team of subject experts so that there is consistency in the source material used for instruction.
9. PIET will work on a database of authentic books, papers, articles, and videos should be created. Faculty should be invited to contribute to the database, with a mechanism for peer review to assess the quality of the submitted material.
10. The IKS Induction programme should ideally be of 30 hours in a 10-10-10 format.
11. At least one to two lectures on the fundamental vocabulary of IKS must be conducted to familiarize faculty with the common terms used in IKS.

Chapter 5

Focus on Outcome based education (OBE):

The NEP-2020 policy document mentions the word ‘outcome’ about 40 times while ‘learning outcomes’ is repeated around 20 times.

Outcome based education was first introduced by William Spady in 1988.

“Outcome-Based Education (OBE) is a student-centric teaching and learning methodology in which the course delivery and assessment are planned to achieve stated objectives and outcomes. It focuses on measuring students’ performance i.e outcomes at different levels.”

The thrust is on what a student is able to do after completing a course or programme. Being student-centric, it empowers students to choose why and how they would like to study. For outcome-based learning, a certain framework model has to be developed and followed; the first step is to identify desired outcomes, design outcome-based curriculum, adopt and use appropriate teaching-learning pedagogical tools and design suitable assessment to measure attainment of the learning outcomes.

In this process, the teacher is a co-learner and collaborator and has the role of a mentor and facilitator. He has a challenging role to create opportunities to enable students for critical thinking so as to develop application and problem-solving skills promoting higher order learning of application, analysis and synthesis.

For outcome-based education, it is primary to understand ‘learning objectives’ and draw the difference between ‘learning objectives’ and ‘learning-outcomes’. A learning objective is the teacher’s purpose for creating and teaching a course. These are the specific questions that the teacher wants this course to raise (input). In comparison, learning outcomes are the answers to those questions (output). These are specific, measurable knowledge and skills that the learner will gain by taking this course.

Learning objectives are usually viewed from the teachers’ perspective i.e, what does the teacher want to achieve? While learning outcomes are seen more from the learner’s perspective or it is what will the program/ course teach him, as a learner?

The outcomes should be specific (well defined), achievable (realistic), and measurable (analysis, synthesis). The members of the Board of Studies should therefore consider these points which will prove helpful in designing course content and learning outcomes accordingly.

The learning outcomes for a course or for a programme should be written in future tense like a student will be able to, language has to be simple so that learner can understand it easily.

Appropriate and acceptable verbs have to be used like to draw, to design, to distinguish, to analyse, to critically appraise, to synthesize, to develop, to think innovatively. Unacceptable verbs like to know, to understand, to appreciate, to enjoy, to believe etc., shouldn’t be used to define the learning outcomes.

Thus, outcome-based education requires restructuring of the curriculum which is known as learning outcomes-based curriculum framework which was adopted by UGC in 2018 under LOCF.

PIET has adopted the teaching pedagogy and the methods of assessment used are important in achieving and reflecting the attainment of specific goals as outcome-based education is not mere accumulation of credits but attainment of higher-order learning.

PIET advocates developing and adopting pedagogy which emphasize on holistic development of learners like experiential learning, discussion-based learning, art integrated learning, flipped classroom etc. A teacher has to have a thorough understanding of the different pedagogies and then adopt the method which is most effective for the students in his classroom.

PIET thrust on the development of the multiple pedagogical approaches like flipped classroom, case-based instruction, project-based learning, art-integrated learning, experiential learning, group discussions, brainstorming, role plays, field-based learning like visits to industrial units, research labs and other institutes suggested for teaching-learning will promote constructive learning and active involvement of learners to achieve the pre-defined goals.

PIET ensure on implementing the feedback and counseling of the students and faculty to improve the quality of imparting knowledge. .

PIET ensures the role of the teacher is no longer just a mere transmitter of information or knowledge but he has to turn into a facilitator, counselor, mentor, course designer, content creator, ICT expert, evaluator, reflective practitioner and life-long learner.

PIET focused on the assessment. It is a key to check the attainment of learning goals and the effectiveness or the changes to be made in the pedagogy used by the faculty. Thus, the assessment and evaluation system needs to be robust. Assessment has to be continuous and comprehensive with more emphasis on formative assessment and in-semester activities (continuous internal assessment) rather than giving more weightage to summative assessment (end semester exams) as envisaged in NEP-2020.

Assessment design should map to check the attainment of learning outcomes or a criterion-based grading system has to be evolved which will check the level of each goal achieved. Rubrics in matrix form as an assessment tool is useful to grade students against each criterion or standard.

PIET understand the need to design and adopt assessment modes which correspond to higher levels of Taxonomy – application, analysis, synthesis and evaluation.

PIET give liberty to its faculty members that they Either used independently or in combination any of the following methods can be used; time-constrained tests, open book tests, problem based, assignments, practical assignment reports, portfolios, case-study, presentations, viva-voce interviews, composite MCQ, computerized adaptive tests, peer and self-assessment.

The outcomes of any program or course to be achieved are linked with specific pedagogical approaches adopted and the appropriate tools used for both formative/diagnostic assessment and summative evaluation.

OBE has been adopted by PIET since its inception. Program outcomes, Program Education objectives are being drafted designed and notified for each program on Institute website and Institute. Course outcome have been appropriately defined for each course and are properly mapped and assessed for calculating the attainment of the same every year and same is used to plan the improvement in academic processes of the Institute in forthcoming years. Outcomes are assessed and attainment analytics are used to improve the academic quality. In future the process outlined above would be further strengthened and attainment levels will continue to be monitored closely to modify the pedagogy and /or the evaluation, in line with NEP 2020 objectives.

Chapter 6

Distance education / online education:

PIET has been working with an objective to wade through the process of Distance Education and online learning methodology.

PIET has entered in to the second cycle of NAAC accreditation and will working on getting its institute autonomous. In future after getting the autonomous status PIET will venture into the Distance Learning education.

Online Education

Looking in towards the need of the students from socio-economically disadvantaged backgrounds require encouragement and support to make a successful transition to higher education. Universities and colleges will thus be required to set up high-quality support centers and will be given adequate funds and academic resources to carry this out effectively. There will also be professional academic and career counselling available to all students, as well as counselors to ensure physical, psychological and emotional well-being.

PIET has been working on the online learning methodology by the following

- After the covid online education has been regular feature of PIET.
- PIET offers Guest Lectures and Expert Session for the students to make them understand the subject elaborative. For using the online education PIET has been offering ERP technology. Attendance has been taken through the online technology.
- PIET offer TCSiON LX to upload the lecture notes and study material which they can access anywhere at their own ease and pace of understanding.
- Faculty also provides authentic website link to the students to update and upgrade their notes time to time.
- PIET encouraged and motivated students to enroll students, Faculty members and staff to enroll themselves in the MOOC courses and gives incentive to the on the successful completion of the same.
- Online lectures have been provided students to get the knowledge at their own convenience.

PIET once getting the autonomous status will work in the direction of vocational courses. Vocational education is perceived to be inferior to mainstream education and meant largely for students who are unable to cope with the latter. This is a perception that affects the choices students make. It is a serious concern that can only be dealt with by a complete re-imagination of how vocational education is offered to students in the future.

Chapter 7

Motivated, Energized, and Capable Faculty

The most important factor in the success of higher education institutions is the quality and engagement of its faculty.

PIET chose the faculty based on the norms prescribed by the UGC time to time.

PIET offers and equipped with the basic infrastructure and facilities, including clean drinking water, clean working toilets, blackboards, offices, teaching supplies, libraries, labs, and pleasant classroom spaces and campuses.

Every classroom shall have access to the latest educational technology that enables better learning experiences.

Teaching duties also will not be excessive, and student-teacher ratios not too high, so that the activity of teaching remains pleasant and there is adequate time for interaction with students, conducting research, and other university activities.

Faculty will be appointed to individual institutions and generally not be transferable across institutions so that they may feel truly invested in, connected to, and committed to their institution and community.

PIET faculty has been empowering by providing and promoting innovative teaching methodology, research, and service as they see best will be a key motivator and enabler for them to do truly outstanding, creative work.

Action Plan to implement:

- PIET provide incentives to the Faculty for the best result, paper publication, Patent filling and registration. Promotions policy, recognitions, and movement into institutional leadership. In PIET All leadership positions and Heads of institutions will be offered to persons with high academic qualifications and demonstrated administrative and leadership capabilities along with abilities to manage complex situations.
- In PIET for the upgradation of the Faculty expertise and knowledge Workshop, FDP and Expert session has been organized.
- PIET gives opportunity to the faculty members to exhibit their leadership and management skills by organizing various curricular and extracurricular activities.
- PIET give equal opportunity to each faculty members to register themselves for the Seminar and provide them academic leaves for the same.
- PIET offers interaction with the stakeholders and faculty members to understand the best practices of the institute.
- Each institution will make a strategic Institutional Development Plan on the basis of which institutions will develop initiatives, assess their own progress, and reach the goals set therein, which could then become the basis for further public funding. The IDP shall be prepared with the joint participation of Board members, institutional leaders, faculty, students, and staff.

Chapter 8

Roadmap and Implementation of NEP 2020 Policy

1. PIET is committed to execute and envisaged the NEP 2020 in the institute. We have been making efforts to get our vision to be materialized and could be fruitful for the students, faculty and institute. A recommendation committee will be formed to supervise the efforts been taken, monitor it and give feedback on the same. Some followings efforts will be made in the future by PIET:
 - a. revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences;
 - b. reaffirming the integrity of faculty and institutional leadership positions through merit- appointments and career progression based on teaching, research, and service;
 - c. establishment of a National Research Foundation to fund outstanding peer-reviewed research and to actively seed research in universities and colleges;
 - d. governance of HEIs by high qualified independent boards having academic and administrative autonomy;
 - e. “light but tight” regulation by a single regulator for higher education;
 - f. increased access, equity, and inclusion through a range of measures, including greater opportunities for outstanding public education; scholarships by private/philanthropic universities for disadvantaged and underprivileged students; online education, and Open Distance Learning (ODL); and all infrastructure and learning materials accessible and available to learners with disabilities.
2. For recognizing high impact research and contribution. A system of multiple parameters for proper performance assessment, for the purposes of ‘tenure’ i.e., confirmed employment after probation, promotion, salary increases, recognitions, etc., including peer and student reviews, innovations in teaching and pedagogy, quality and impact of research, professional development activities, and other forms of service to the institution and the community, shall be developed by each HEI and clearly enunciated in its Institutional Development Plan (IDP).
3. All faculties must be exposed to a common underlying philosophical foundation across disciplines in the IKS.
 - a. At least one to two lectures on the fundamental vocabulary of IKS must be conducted to familiarize faculty with the common terms used in IKS.
 - b. A strong emphasis must be placed on providing exposure to the primary texts (Sutra Text) of IKS which is required for deeper understanding.
 - c. The refresher courses must focus on the development of courses under the following categories:
 - To connect with the oral tradition of IKS, one practical session on the ancient technique of memorization, with a few examples from primary texts, would be helpful.
 - A few immersive sessions on Yoga, Meditation, Ayurveda, and Classical Music should be arranged to give teachers some grounding in the experiential aspects of IKS.
 - One session on Ayurveda with reference to self-exploration (Ayurvedic

PersonalityTest) will be very helpful at a personal level.