

# PERSPECTIVE PLAN 2023-2038

(Including five year development plan)  
Madhav Institute of Technology & Science  
(Deemed University)



MADHAV INSTITUTE  
OF TECHNOLOGY &  
SCIENCE  
GWALIOR – 474 005,  
M.P. (INDIA)



## Introduction

- **Madhav Institute of Technology & Science (MITS), Gwalior** was established in 1957 by His Highness Sir Jiwaji Rao Scindia, Maharaja, of the erstwhile state of Gwalior under open door policy of Govt. of India.
- The Foundation Stone of the Institute building was laid by the then President Dr. Rajendra Prasad, on 20<sup>th</sup> October, 1956 and subsequently, established in 1957.
- The building of Institute was inaugurated by the then President of India Dr. S. Radhakrishnan, on 11th December, 1964.
- On the occasion of Golden Jubilee Celebrations, the then president of India, Dr. Pratibha Devi Singh Patil graced the occasion as Chief Guest on 30<sup>th</sup> June, 2008. A commemorative Postal Stamp with first day cover of the institute was also released by department of Posts, India on this occasion.
- Madhav Institute of Technology & Science (MITS) was declared a Deemed to be University under the Distinct Category by the Ministry of Education, Government of India, in 2024. The institute is accredited by NAAC with an A++ Grade and is located in the northern region of Madhya Pradesh
- The institute has a lush green, campus spread in 44.6 acres.
- The Institute started with 3 disciplines; Civil, Mechanical and Electrical Engineering with a total intake of 120. Now, there are 17 under graduate and 10 post graduate Programmes in Engineering & Technology, Architecture & Planning, Computer Application and Management with a total strength of approximately 5000 students. There are about 100 Ph.D. scholars in different disciplines.
- As per the vision of the institute, "To create world class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society", the institute is committed to achieve and maintain quality through several different initiatives and endeavors. The mission is to maintain a dynamic approach and constantly upgrade & update efforts to fulfil stakeholder expectations in the ever changing global technological scenario.
- The NPTEL local Chapter of the institute ranked 2nd across the nation during January-April 2022 session. with AAA rating.
- The institute is listed in 251-300 band of NIRF -2021, promising band of ARIIA-2021 and is ISO 9001:2015 compliant. Many of the programmes are accredited by NBA.

- It is a recognized Centre of the Quality Improvement Programme (QIP) of AICTE for Ph.D. Programmes.
- The Institute has implemented TEQIP-II & TEQIP-III successfully and was declared as the best performer in the final performance audit.
- Offering 27 UG & PG degree courses along with Ph.D. in various disciplines.
- Institute is a QIP center of AICTE for Ph.D. programme under QIP & NDF schemes.
- DST established Entrepreneurship Development Cell, since 1988.
- Academic autonomy is granted by Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal, since 2002.
- UGC has granted academic autonomy to the institute for a period of six years w.e.f. July 2017.
- Institute is NAAC Accredited and few programmes are NBA Accredited.
- Institute has successfully completed TEQIP Phase-II & Phase-III project of MHRD, Govt. of India.
- Institute houses on-campus training Center of SKF India Pvt. Ltd & IBM India Pvt. Ltd..
- Institute is also an A-VIEW Resource Center of IIT-Bombay and IIT Kharagpur under MHRDs National Mission on Education through ICT.
- Established first Drone School of Madhya Pradesh in collaboration with Indira Gandhi Rashtriya Uran Akademi (IGRUA), Amethi.
- MoUs and Collaborations with Industries & Research Organizations (Annex-II).
- Promoting Research in core & emerging areas (Annex-III).
- Institute is Corporate Partner of International Civil Aviation Organization (ICAO), Montreal, Canada for TRAINAIR PLUS Programme.
- Completed various Research & Development projects supported by AICTE, DST and other funding agencies.
- The institute has implemented National Educational Policy (NEP-2020) for holistic & multidisciplinary education.
- MoU with Foundation for Innovation & Research in Science & Technology (FIRST), IIT Kanpur to enable, promote and incubate new technology/knowledge/innovation based start-ups, building a vibrant start-up ecosystem.

## Vision, Mission & Branding Statement

### Vision

“To create world class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society “

### Mission

- To provide quality education in technical and allied disciplines.
- To organize and arrange innovative courses in Engineering and Technology.
- To arrange vocational courses in the upcoming fields and innovative subjects to meet global advancement.
- To promote research in the fields of Technology and Science

### Branding Statement

“Mission to Innovate Technology for Society”

## Values Framework

**To promote the following core values among the HEIs of the country:**

- Contributing to National Development
- Fostering Global Competencies among Students
- Inculcating a Value System among Students
- Promoting the Use of Innovative Technologies in Teaching Learning

## The Society

Institute is managed by [The Scindia Engineering College Society \(SECS\)](#) which is registered under the Societies Registration Act No. 53 of 1950 (no. 337 of 1956). The Promoter of the society was His Highness Lt. Gen. [Maharaja Sir Jiwaji Rao M. Scindia](#), Maharaja of Erstwhile State of Gwalior in 1956.

The Scindia Engineering College Society, Gwalior is a not for profit society created specifically to run Madhav Institute of Technology & Science College, Gwalior. The society is exclusively for running educational activities and no other activities are being carried out or shall be carried out in the future under it.

The society is established to provide first class engineering college at Gwalior and to run, manage and administer the same. The registered office of the office is situated at Gwalior, Madhya Pradesh.

## Strength, Weakness, Opportunity and Challenges (SWOC)

SWOT analysis was carried out with the involvement of various stakeholders participation. All the important points related to SWOT were considered. Some of the important parameters taken into consideration for analysis were, teaching learning process, human resources, services, physical Resources, Finance and organization pattern along with its formalization procedures etc. The brain storming sessions in different groups were conducted to discuss the various parameters involving in the analysis of SWOT.

For the purpose of analysis, various comments received during discussions were analyzed and reported. In these various sessions, 72% students, 98% Faculty members and 80% supporting staff of various departments of the Institute participated. The outcome of the discussion during free flow of information is diagnosed and analyzed are reported below:



### Strength

- UGC autonomy and NAAC accreditation since 2017
- Autonomous under affiliated university since 2000
- Declared “Deemed to be University” under distinct category in the year 2024
- A blend of eminent persons from society, administration, academia and industry, constitute the BoG who are closely associated with the development of the institute
- The vast alumni base of the institute
- The institute has effectively implemented the Flexible Curriculum for 2017-2021 batch onwards and integrated NEP-2020 parameters and provisions from 2020-2021 batch onwards.
- The examination reforms have been implemented and are in practice.

- The institute NPTEL Local Chapter ranked 2nd among 4500 Institutions in India in 2022
- The faculty is experienced, well qualified and the retention is good.
- The institute has a state-of-the-art digital studio to facilitate development of MOOCs by the faculty.
- A beautiful building, green & environmentally conscious campus and excellent academic/other infrastructure

#### Weakness

- Financial constraints for removal of obsolescence & commencement of new demand based programmes/facilities.
- There is a need for strengthening industry collaboration for faculty training, conduction of corporate training programmes and industry sponsored research projects.
- Requirement of an auditorium, indoor sports facilities, & accommodation for students/staff
- Up-gradation of Networking of Campus

#### Opportunity

- The path has been paved for acquiring the status of a 'degree granting autonomous institute'.
- Multiple mode teaching-learning-evaluation system is developed by the institute enabling attainment of higher order thinking skills (HOTS)
- Effective tapping of the huge alumni potential of the institute as off campus-resource persons for the institute internship programme and for strengthening the start-up activities
- The faculty is developing their own MOOCs. About 10 courses are ready to be launched
- Active participation in community development programme for regional needs
- Strengthening collaboration with local industry for student projects and learning
- Very good air & train connectivity with other parts of the country, particularly to the national capital

#### Challenge

- To constantly update and upgrade curriculum, faculty skills and laboratory infrastructure to fulfil stakeholder/market needs
- The lack of exposure to new technology/facilities can become a hurdle for imparting high quality education to the students.
- Lucrative financial packages as well as facilities / resources provided by the



- private/foreign competitors can cause migration of good faculty members
- Due to fast changes in government policies (in education sector), new foreign universities, private universities are coming up, which will cause great challenges and competition.

## Goals

- Ensure outcome based education system for globally ranked knowledge, skills & values among students.
- Become a leading Institution for Education, Training, Skill development and life-long learning in emerging areas of Science & Technology.
- Centre of excellence for Innovative Research to contribute Society.
- Development of Infrastructure at par with International Standards.

## Objectives of deemed to be university

- To provide instructions, teaching and training in higher education, vocational and professional education and make provisions for research, innovation advancement and dissemination of knowledge as per dynamic environment to create higher levels of intellectuals with innovative abilities.
- To establish new courses institutions and courses as per the need of the community.
- To award degrees, diplomas, certificates and other academic distinctions on the basis of examination or any other method of evaluation.
- To provide meaningful learning opportunities to students of India and overseas.
- To set up collaborative provisions with foreign/international Universities to enable students of the University to leverage the advantages of faculty and students exchange, dual degree options and semester abroad programmes.
- To provide for higher education leading to excellence and innovations in such branches of knowledge as may be deemed fit, primarily at undergraduate, at post-graduate and research degree levels, fully conforming to the concept of University as defined herein.
- To engage in interdisciplinary/ multi-disciplinary/ trans-disciplinary teaching and research in addition to domain-specific specialization.
- To provide for high quality teaching and research recognized nationally and globally.

- To recognize, identify and foster the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development.
- **To provide multi-disciplinary and a holistic education across the sciences, engineering, technology, social sciences, arts, humanities, sports and other disciplines.**
- **To transform into Research Intensive University over a period of time.**
- Focus on research and innovation by setting up start-up incubation centers; technology development centres; centres in frontier areas of research; greater industry-academic linkages; and interdisciplinary research including humanities and social sciences research.
- To provide flexible and innovative curricula which include credit-based courses and projects in the areas of community engagement and service, environmental education, value-based education, etc.

### Specific Objectives

1. To acquire the status of "A degree granting autonomous institute"/"deemed to be university".
2. To strive for improvement in Ranking and Accreditation.
3. To improve institutional visibility and peer perception via ensuring Quality education for the holistic development of students.
4. To promote outcome based Education through Flexible curriculum system, mentoring system and reforms in examination.
5. To start programmes in Industry Partnership (Industry based programmes).
6. To establish Incubation Center for start-ups and center for business/technology development, training and support.
7. To establish centres/laboratories for research to promote collaborative interdisciplinary research to promote vibrant research in the frontier areas.
8. To establish a calibration central certified by a National Agency.
9. To strengthen industry collaboration for internship/ placement and joint research.
10. To honour credits earned by an individual from various institutions /platforms through Academic Bank of Credit (ABC).
11. To enhance Alumni participation in the growth of the institute.
12. To start corporate training programmes/ short-courses for Industry persons.



13. To collaborate with foreign universities/student exchange programmes.
14. To build collaborations with research organizations/ prominent institutions for external mentorship.
15. To start multilevel diversified skill based courses.
16. To recruit high quality teachers and to provide support and motivation to existing teachers for Faculty Development activities.
17. To promote professional development of students through training and activities for the inculcation of team work, communication skills, leadership skills, time management skills, soft skills and to develop innovation/entrepreneurship and critical thinking.
18. To offer Vocational Courses.
19. To enhance interaction & linkages with industry, society, government/ non-government organizations to promote socially productive activities.
20. To contribute the society through research & development activities.
21. To establish CSR model to contribute to societal goals.
22. To promote NEP-2020 recommendations to enable and encourage high-quality multidisciplinary and cross-disciplinary teaching and research across fields through Cluster Institutions.
23. To promote publication of high quality research papers (SCI & Scopus), Patents & Copyrights by teachers.

## **Fifteen Years Strategic Vision Plan with Five Year Rolling Implementation Plan**

### **(a) Academic Plan**

#### **Academics at Institute**

##### **➤ Flexible Curriculum**

The Institute has been granted academic autonomy from RGPV, Bhopal (State Technical University) since 2002 and UGC has also given the autonomous status from 2017 & in the year 2024 institute is declared “Deemed to be University” under Distict Category. As a consequence, the curriculum is being revised on regular basis through the Board of Studies (BoS), which is confirmed by the Academic Council. The curriculum development is aligned

with the local, regional, national and global needs and revision of curriculum also involves feedback from various stakeholders. The curriculum is dynamic and the courses are as per the current market and industrial need.

The institute has implemented Flexible Curriculum (as per the AICTE model curriculum) from the academic session 2017-18 onwards and the institute has also concluded its action plan for the effective integration of National Education Policy 2020, with focus on skill development, creativity, innovation and holistic development. The curriculum offers the provision of Minor Specialization and Honors by additionally earning 20 credits through SWAYAM/NPTEL platform based courses. These courses are approved by the respective BoS and offered to the students who are opting degree with honours or minor specialization. Moreover, the arrangement of Departmental Elective and Open Category courses through SWAYAM/NPTEL platform with credit transfer is in place and under this arrangement, the total number of 20,123 Credits have already been transferred to the transcript of students. To ensure the holistic development of students, Novel Engaging Courses (with the arrangement of four credits in the overall UG programme) in diversified areas have been included in the curriculum such as - Environment protection, Bhagwad Gita- An Introduction. The curriculum also recognizes attainments in the co-curricular activities through credits under its “Professional Development” component.

Further, to ensure that the students have the required domain knowledge, skills and attitude following factors are considered:

- (i) Reports of various reputed organizations like NASSCOM, Sustainable Development Goals by UN etc.
- (ii) Model curriculum prescribed by AICTE,
- (iii) Mapping with Program Outcomes (PO),
- (iv) Suggestions by industry experts and alumni,
- (v) Syllabi of various competitive exams like GATE, IES, etc. Curricula addresses the following national missions: Digital India (Incorporation of MOOCs & digital pedagogy in the curriculum), Unnat Bharat Abhiyan, Women Empowerment, and Skilling India (provision of Skill Based Mini Project) .

The provision to opt for Full Semester internship or major project in the final semester of UG programmes is in place. Many students have already completed their internships with good stipend and placement offer in the same industry after the internship.

The curriculum and relating practices are in line with the Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs) of the various Programmes. The curriculum also includes recent technologies and the opportunities existing at regional and global level with all necessary elements.

The Institute observes the attainments of PEO, PO& PSO for respective programmes which in turn relates to Vision and Mission of the Institution and Department as well. The outcomes as stated have been integrated in curriculum and displayed on the Institute website to facilitate access to various stakeholders, including the teachers and students.

- The Board of Studies proposes the curriculum. The syllabi are continuously updated in consultation with experts from industry, academia, alumni and students, taking advantage of the academic autonomy from the affiliating university since year 2002.
- The curricular structure is prepared after rigorous discussions and pedagogical workshops, both conducted in-house as well as with external experts. Keeping in mind the national and international needs, desired graduate attributes, and guidelines such as United Nation's sustainable development goals (UN-SDGs), a balanced structure is proposed.
- There are course committees at the department to address each vertical/sub-discipline. A structured feedback system is in place. The Board of Studies (BoS) meetings followed by the Academic Council meetings are conducted twice a year. Before the meeting, feedback on existing curriculum is collected from stakeholders.
- All faculty members are the members of the BoS along with nominated experts from the state, outside the state, alumni and industry persons.
- The points related to the institute policy are included and circulated by the Academic Development Cell (ADC).
- All the courses are developed by identifying the specific course outcomes, which are mapped with the POs and PSOs. Shortfall in POs the attainment is backtracked to identify gaps in COs and curriculum is accordingly revised or new courses are developed
- The provision of 'Professional Development' is made by assigning 02 credits, evaluated at the final semester, for extra & co-curricular activities.
- Professional Ethics, Gender, Human Values, Environment and Sustainability, Project Management, Disaster Management, Indian Constitution & Traditional Knowledge are mandatory audit courses.
- About 78 different optional courses are also offered in 'Novel Engaging Course' category.
- For preparing future ready engineers, courses such as Cyber Security, Intellectual property Rights, Data Science, Artificial Intelligence & Machine Learning are mandatory courses.
- Interdisciplinary learning and flexibility is already included through the provision of DEs/OCs/Honours degree/Minor specialization. Students can earn minor

specialization & Honours degrees in addition to UG degree by earning 20 additional credits

- There is a provision of full VIII semester internship at industry/research organization for making them job ready.

### ➤ **Teaching-learning and Evaluation**

- In order to unburden the students from high stake end-term examinations, the weight of continuous evaluation is slowly being increased. Presently the ratio of continuous to end-term evaluation has been increased from 30:70 to 40:60.
- Continuous evaluation of theory course consists of 20% weightage to learning through quizzes and assignments, mini projects etc. and 10% each to two mid-semester examinations. To promote modern tool usage, laboratory courses have a "Skill Based Mini Projects" component with 20% weightage and the other 20% weightage is given to lab-work/sessional.
- The Learning Management System, MOODLE (Modular Object Oriented Dynamic Learning Environment) is effectively used by faculty and students of the institute for teaching, learning and assessment purposes providing a student centric 'any-time-any-where' format of learning.
- MOODLE is also very effectively used for continuous and online end term evaluation, setting MCQ based question paper and conduction of exam.
- The lecture plans are prepared according to the 'Multiple Mode Teaching Learning Pattern' (MMTLP) developed by the institute. The lecture plan reflects the mode and pedagogical methods of teaching.
- The "Digital Teaching-Learning Action Plan" was prepared during the COVID period by customizing the PRAGYATA guidelines of Ministry of Education, (then MHRD), New Delhi to the scheme, scope and needs of engineering education.
- Some Department Elective and Open Category Courses are offered through MOOC platform (NPTEL/SWAYAM) and credits are directly transferred.
- MITS is a NODAL center of Virtual Labs (An Initiative of Ministry of Education under the National Mission on Education through ICT) from 21st July, 2020 onwards in association with IIT-Delhi. Some experiments are conducted in virtual mode also.
- The Examination Control System is automated resulting in extensive improvement in the efficiency and transparency of the whole process. Valuation is conducted digitally and answer books are displayed to the students.
- The examination reforms based on 'Outcome Based Education' have been implemented. The end-semester evaluation for theory courses is conducted in

multiple modes viz, Pen & Paper, Assignment plus Oral and Multiple Choice Questions.

➤ **Student Support and Mentoring**

- The institute curriculum and practices are designed to achieve all three domains of learning; knowledge, skills & attitudes.
- The first two domains are addressed through curriculum, pedagogy and various academic activities, working in well-equipped laboratories, skill based projects and assignments.
- For the development of a good attitude and behavior, ethical conduct, team spirit and soft-skills there is provision of activity based learning through focused courses, presentations, proficiency evaluation, group learning and various activities in the campus which are organized by the students.
- The Institute has established Students Development Cell for promoting and organizing extracurricular and co-curricular activities. There are 65 student clubs on campus which are active year the round.
- There is a practice of conduction of 'Orientation Programs' at the onset of semester to brief them on 14-specific points related to academic, extracurricular and career related activities to be conducted during the semester. Separate support and sessions are conducted for the lateral entry students to address the curriculum gaps for transition to the degree programme.
- The slow learners are identified by the course faculty and regular remedial classes, extra assignments and quizzes are conducted for slow learners. Similarly, support is provided to the fast learners also.
- The institute follows a 'Mentor-Mentee System'. Besides this, personal counselling is given to students through a full time, qualified professional Student Counsellor.
- A number of sports and cultural activities/competitions are organized by the institute every year wherein the students play an important role in planning and organizing the activity.
- The institution also has a transparent mechanism for timely redressal of student grievances. Students are represented in several academic & administrative committees of the institute.
- In-house internship programmes are conducted mandatorily for students in first year and second year while internship support is provided to the third year students on a need basis.

### The academic plan for the next fifteen years

The academic plan for the next fifteen years for following activities/process is prepared considering the SWOC analysis, requirement of Quality Assurance agencies and NEP-2020 recommendation for the Holistic, Multidisciplinary, Value Based Education and Flexibility to learners.

**(i) Curriculum Reforms**

**(ii) Examination Reform & Evaluation process**

**(iii) Teaching Learning & Evaluation Process**

#### (i) Curriculum Reforms

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Curriculum Design & Development			Twice/Year	Dynamically
2	Introduction of new courses focused on employability/entrepreneurship/skill development			Introduced as open electives	Technology Based
3	Revision of Syllabus as per current Societal & Industrial Need			Twice/Year by conducting syllabus revision workshops	Continuous Improvement
4	Industry & alumni involvement in the program design and Curriculum			Direct & Indirect	Continues Improvement
5	A Balanced Structured Curriculum for attaining the Program Outcomes (POs) & Program Specific Outcomes (PSOs)			Implemented from 2017-18	Continues Improvement
6	Implementation of Academic Flexibility through Flexible Curriculum System			Implemented from 2017-18	To be continued
7	Curriculum Enrichment via audit courses			Implemented from 2018-19	Dynamically
8	Implementation of Feedback System to collect feedback from Students, Teachers, Employer & Parents for Curriculum development			Through Online feedback mechanism	To be continued
9	Conduction of Value-added courses to impart transferable and life skills			Implemented from 2017-18	Need Based



10	Provision of Internship (in-house/Industrial) in every academic year of study	In-House Summer Internship Program started in 2017-18 for I year & Industrial Internship is mandatory for II & III Year students, Provision of full semester Internship in final year with industry/ organizations	To be continued
11	Encouraging for Industrial Projects to solve the real time Industrial problems	Partial Financial Support for Industrial and Interdisciplinary projects	All Deserving
12	Review & Corrective measures on implementation of OBE: <ul style="list-style-type: none"> <li><input type="checkbox"/> Mapping courses and the POs &amp; PSOs.</li> <li><input type="checkbox"/> Framing COs for every course.</li> <li><input type="checkbox"/> Availability of COs embedded in the syllabi.</li> <li><input type="checkbox"/> Course Articulation Matrix (Mapping of CLOs with COs) table.</li> <li><input type="checkbox"/> Program Articulation Matrix (Mapping of CLOs with POs) tables.</li> <li><input type="checkbox"/> Development of assessment tools and processes used to gather the data upon which the evaluation of Course Outcome is based.</li> </ul>	The Cos, Pos and PSOs are prepared and revised as per NBA guidelines. The attainment level of each COs is evaluated and corrective measures are taken for improvement in attainment levels.	Continuous Improvement

	<input type="checkbox"/> Attainment of Course Outcomes of all courses with respect to set attainment levels. <input type="checkbox"/> Development of assessment tools and processes used for assessing the attainment of each of the POs & PSOs. <input type="checkbox"/> Evaluation of each PO & PSO. <input type="checkbox"/> Review and improvement in attainment levels of Cos, Pos & PEOs.		
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## (ii) Teaching Learning & Evaluation Process

Years	2023-2028	2028-2033	2033-2038	Status	Intervention
Academic Reforms: Adapting Cafeteria Approach against the existing Rice-Plate Approach					
1	Adherence to academic Calendar			100% adherence to academic calendar	To be continued
2	Learning Management System: Effective teaching with the use of e-learning resources, ICT tools & Institute MOODLE, MOOCS, SWAYAM			Up to 100%	100%
3	Teaching-learning through ICT enabled classrooms & Smart Class rooms			100% classrooms are effective	100%
4	Pedagogical initiatives (real life examples, collaborative learning, ICT supported learning, interactive classrooms, e-resources & latest techniques)			Up to the level of 70%	100%
5	Effective Students mentoring system			Scheme is very effective since 2016	Enhance Effectiveness
6	Implementation of effective support system for weak students & to encourage bright students (identification, action taken, impact observed)			Up to 70%	100%

7	Student's feedback on teaching process and Corrective measures.	Online feedback system & actions accordingly. 02/Sem.	Enhance Effectiveness
9	Flexible Curriculum Scheme: - Core Courses - Electives and Open Elective Courses - Inter-Disciplinary Courses - Credit Transfer Provision for Online Courses including courses of foreign Universities - Industry training/Course Crediting - Add-on/Audit Course Crediting etc. - NEC Novel Engaging Courses Provision of minor specialization & Honors	Implemented w.e.f 2017-18	Enhance Effectiveness
10	Assuring Quality of assignment and its relevance to COs (to promote self-learning, survey of contents from multiple sources, assignment evaluation and feedback to the students, mapping with the COs)	Implemented	To be continued
11	Question paper analysis based on HOT & LOT and gap analysis & corrective measures.	Implemented	To be continued
12	Developing mechanism for students grievances about evaluation	Manual System	Online System
13	Digitization of Evaluation Process	Online Evaluation System has started w.e.f. 2017-18 as a pilot project & started as complete	Complete Digitization

		online evaluation from 2018-19	
14	Digital Examination Process	Objective	Subjective
15	Innovative practices for Identification of students projects and allocation	Under Progress	100% Implementation
16	Classification and relevance of the projects and their contribution towards attainment of POs and PSOs	Under Progress	100% Implementation
17	Establishing Industry supported laboratories	SKF, IBM	01/ Program
18	Industry involvement in partial delivery of any regular courses for students	Under Progress	Effectiveness Enhancement

### (iii) Examination Reform & Evaluation process

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Implementing effective Process of internal semester question paper setting and evaluation (effective process of question paper setting, model answers, evaluation and its compliance)			Implemented	To be continued
2	Implementing effective system to ensure the questions from outcome/learning levels perspective			Implemented	To be continued
3	Implementing effective system to ensure evidence of COs coverage in class test/mid-term test.			Implemented	To be continued

<b>Curriculum Design &amp; Development</b> <table border="1"> <tr> <td>2023-24</td> <td>Twice/Year</td> </tr> <tr> <td>2033-2038</td> <td>Dynamically</td> </tr> </table>	2023-24	Twice/Year	2033-2038	Dynamically	<b>Revision of Syllabus as per current Societal &amp; Industrial Need</b> <table border="1"> <tr> <td>2023-24</td> <td>Twice/Year</td> </tr> <tr> <td>2033-2038</td> <td>Continuous Improvement</td> </tr> </table>	2023-24	Twice/Year	2033-2038	Continuous Improvement	<b>Introduction of new courses focused on employability/entrepreneurship/skill development</b> <table border="1"> <tr> <td>2023-24</td> <td>Introduced as open electives</td> </tr> <tr> <td>2033-2038</td> <td>Technology Based</td> </tr> </table>	2023-24	Introduced as open electives	2033-2038	Technology Based
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<b>Provision of Internship (in-house/Industrial) in every academic year</b> <table border="1"> <tr> <td>2023-24</td> <td>In-House Summer Internship</td> </tr> <tr> <td>2033-2038</td> <td>To be continued</td> </tr> </table>	2023-24	In-House Summer Internship	2033-2038	To be continued	<b>Encouraging for Industrial Projects to solve the real time Industrial problems</b> <table border="1"> <tr> <td>2023-24</td> <td>Partial Financial Support for Industrial</td> </tr> <tr> <td>2033-2038</td> <td>All Deserving</td> </tr> </table>	2023-24	Partial Financial Support for Industrial	2033-2038	All Deserving
2023-24	In-House Summer Internship								
2033-2038	To be continued								
2023-24	Partial Financial Support for Industrial								
2033-2038	All Deserving								

**Review & Corrective measures on implementation of OBE:**

- ❑ Mapping courses and the POs & PSOs.
- ❑ Framing COs for every course.
- ❑ Availability of COs embedded in the syllabi.
- ❑ Course Articulation Matrix (Mapping of CLOs with COs) table.
- ❑ Program Articulation Matrix (Mapping of CLOs with POs) tables.

2023-24	The COs, POs and PSOs are prepared and revised as per NBA guidelines
2033-2038	Continuous Improvement

Adherence to academic Calendar

2023-24	100% adherence
2033-2038	To be continued

Learning Management System: MOODLE/ICT TOOLS/MOOCs

2023-24	Up to 100%
2033-2038	100%

Teaching-learning through ICT enabled classrooms & Smart Class rooms

2023-24	100% classrooms are effective
2033-2038	100%

Effective Students mentoring system

2023-24	Scheme is very effective since 2016
2033-2038	Enhance Effectiveness

Developing mechanism for students grievances about evaluation

2023-24	Manual System
2033-2038	Online System

Question paper analysis based on HOT & LOT and gap analysis

2023-24	Implemented
2033-2038	To be continued

Student's feedback on teaching process and Corrective measures

2023-24	02/Sem.
2033-2038	Enhance Effectiveness

Implementation of effective support system for weak students & to encourage bright students

2023-24	Up to 70%
2033-2038	100%

Pedagogical initiatives (real life examples, collaborative learning, ICT supported learning, interactive classrooms, e-resources & latest techniques)

2023-24	Up to the level of 70%
2033-2038	100%

Digital Examination Process

2023-24	Objective
2033-2038	Subjective

Digitization of Evaluation Process

2023-24	Online Evaluation System has started w.e.f. 2017-18
2033-2038	Complete Digitization

Assuring Quality of assignment and its relevance to COs

2023-24	Implemented
2033-2038	To be continued

Establishing Industry supported laboratories

2023-24	SKF, IBM
2033-2038	01/Program

Classification and relevance of the projects and their contribution towards attainment of POs and PSOs

2023-24	Under Progress
2033-2038	100% Implementation

Flexible Curriculum Scheme:

- Core Courses
- Electives and Open Elective Courses
- Inter-Disciplinary Courses
- Credit Transfer Provision for Online Courses including courses of foreign Universities
- Industry training/Course Crediting
- Add-on/Audit Course Crediting etc.
- NEC Novel Engaging Courses
- Provision of minor specialization & Honors

2023-24	Implemented w.e.f 2017-18
2033-2038	Enhance Effectiveness

Industry involvement in partial delivery of any regular courses for students

2023-24	Under Progress
2033-2038	Effectiveness Enhancement

### The Five Year Academic Plan

Following academic provisions which are already implemented in the Institute are considered for the preparation of **Academic Plan for next five years (2023-2028)**:

- **Multidisciplinary Education:** Provision of Minor Specialization
- **Choice and Flexibility:** Provision of Honours
- Cross Disciplinary Thinking: Open Courses
- Online Education: Credit Transfer Through SWAYAM/NPTEL/ MITS MOOCs



- Accessibility and Flexibility: Blended Teaching Learning
- Holistic Education and Informal Knowledge: Novel Engaging Courses
- Skill Development and Creativity: Skill based Projects
- Facilitation of Proficiency Development, Natural Science & Skill courses and Mandatory Audit Courses in scheme of study & examination
- In-house Internships for skill development
- Industrial/External Working Exposure: Full semester Internship
- All Round Involvement/ Professional Development: Extra Curricular Activities in the Curricula
- Moving Away from High-stake Examinations (unburden the students): Continuous and Comprehensive Evaluation
- Humanities and Arts Integration with STEM: Mandatory Value based Courses
- Innovative/Multidisciplinary Research: Research Internship
- Industry Readiness: Industry Collaborative Courses
- Industry Partnership Programmes: Industry Collaborated Degree Programmes
- Industry Readiness: Vocational Courses
- Enrichment of Faculty and Staff knowledge: Facilitation of Training
- Innovative Teaching, Learning & Assessment: Criterion Based Grading
- Cross Disciplinary and Interdisciplinary Thinking, Innovation: Interdisciplinary Projects
- Entrepreneurship: Skill based Courses in Local/Regional Language & Start-up Activities
- Future Skill Areas and Innovative Domains: New UG Programmes in Diversified Domains as per Societal and Industrial Need
- Certificate Courses in Future Skill Areas and Innovative Domains
- Industry Executive Training: Courses for Industry Persons
- Degree with Research to offer Flexibility and Choice
- Multiple Entry & Exit Option
- Academic Bank of Credit (ABC) for Accountability of Credits Earned Through Various Platforms
- Open Distance Learning (ODL): provision for Courses and Grades Acquired Through Distance Learning

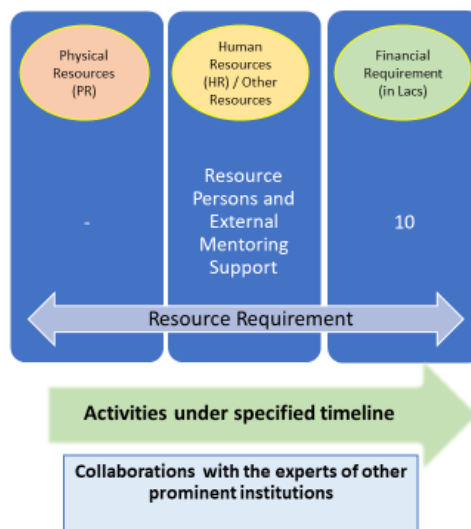
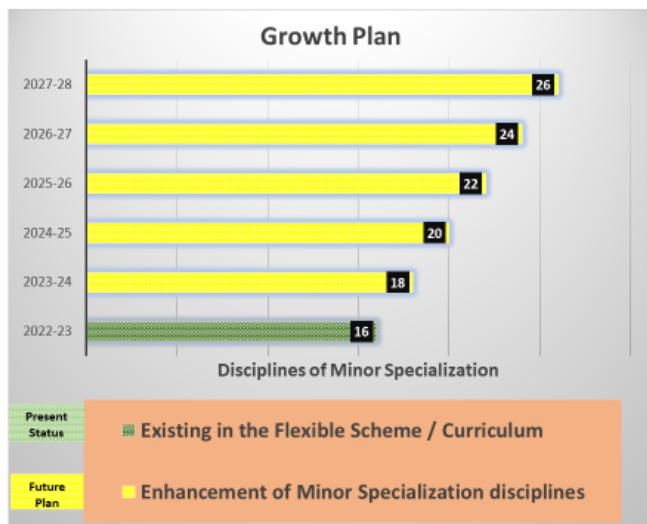
**Attributes**

**Strategies**

## Multidisciplinary Education

## Provisioning of Minor Specialization through additional credits

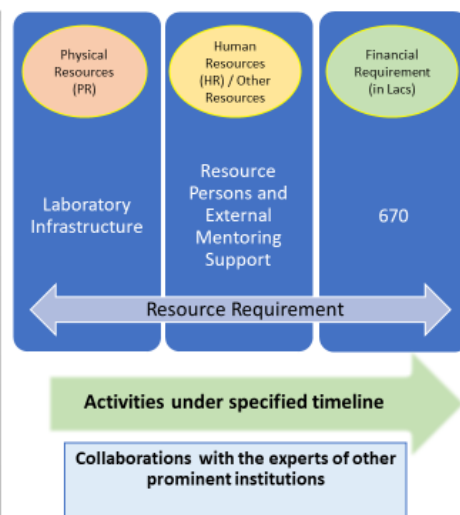
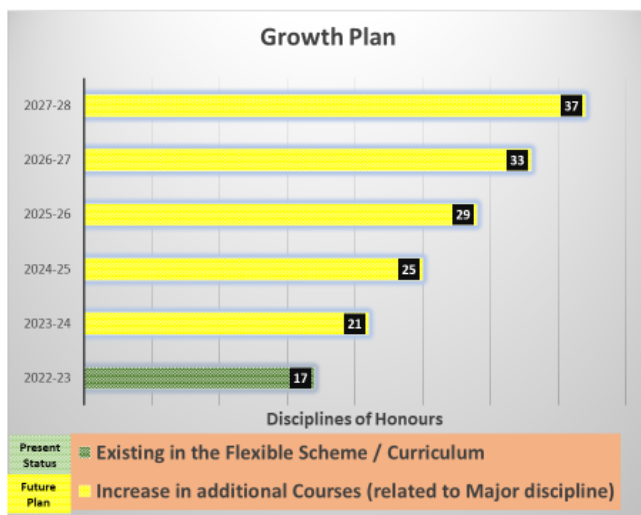
### Multidisciplinary Education: Minor Specialization



## Choice and Flexibility

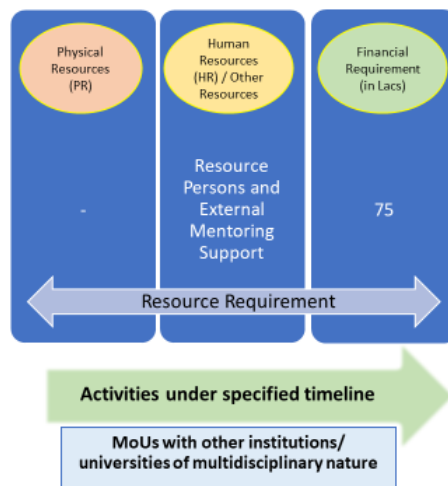
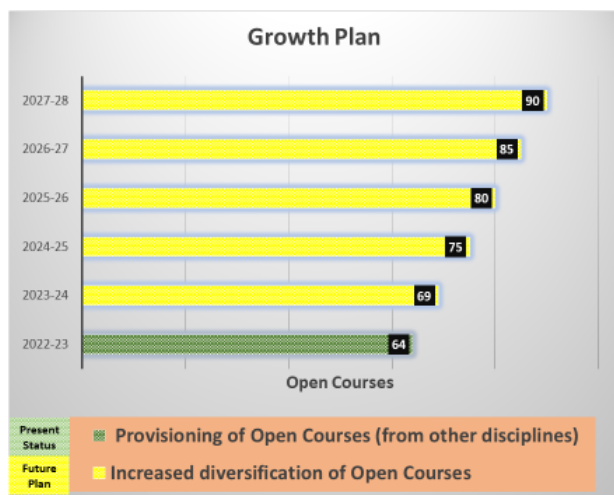
## Provisioning of Honours through additional credits

### Choice and Flexibility: Honours



<b>Cross Thinking</b>	<b>Disciplinary</b>	<b>Provisioning of Open Courses (from other disciplines)</b>
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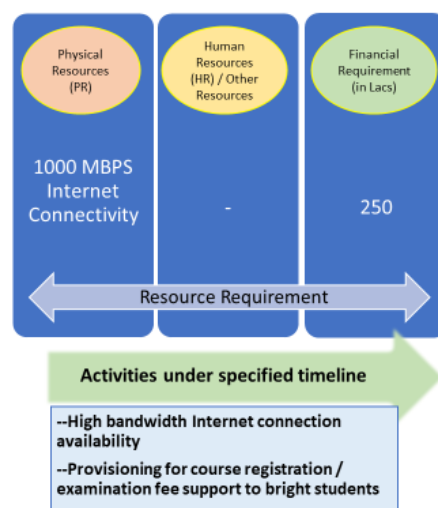
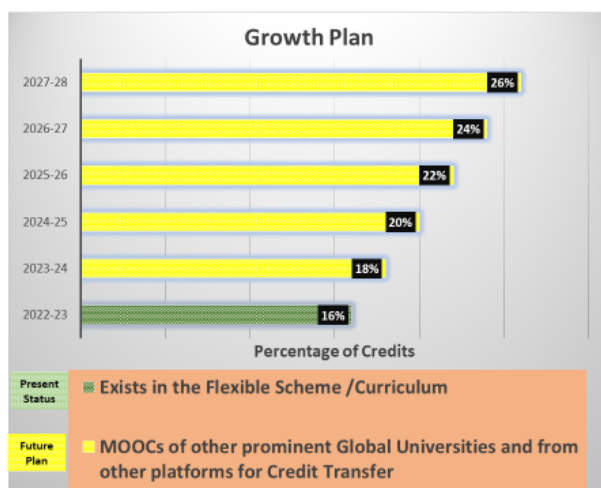
### Cross Disciplinary Thinking: **Open Courses**



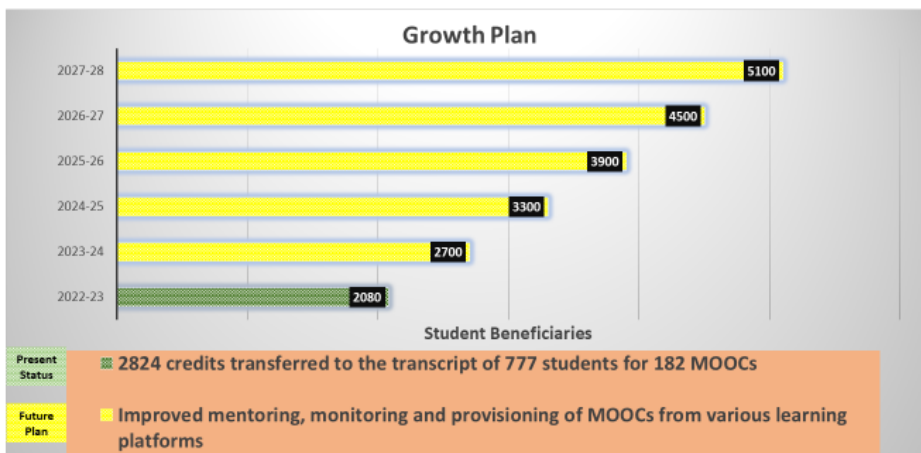
### Online Education

- Provisioning of MOOC based courses from various learning platforms / other institutions
- Credit transfer facilitation through MOOC based learning platforms / other institutions
- Development of Institutional MOOCs for credit transfer

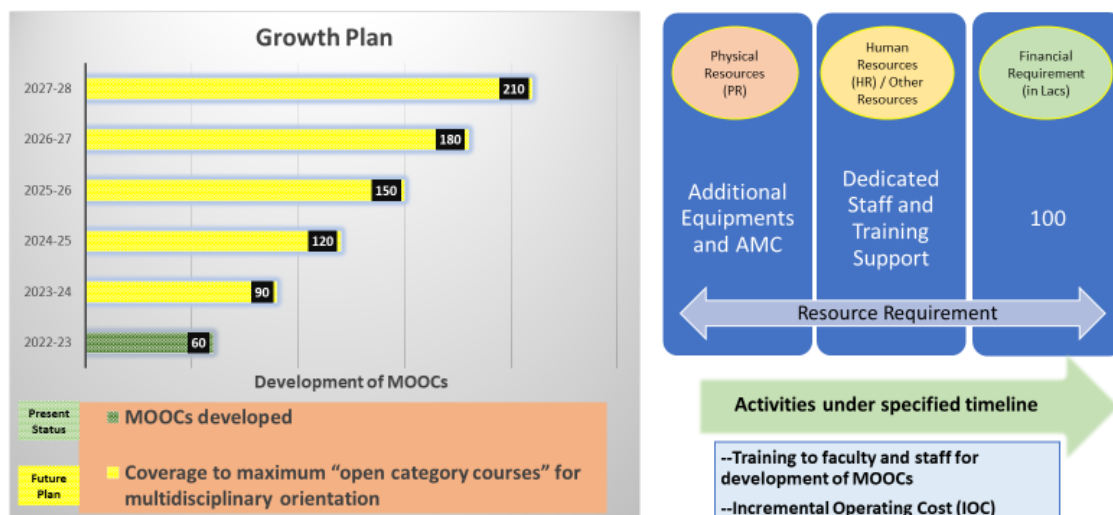
### Online Education: **SWAYAM/NPTEL/MOOCs**



## Online Education: Credit Transfer Through SWAYAM/NPTEL/ MOOCs



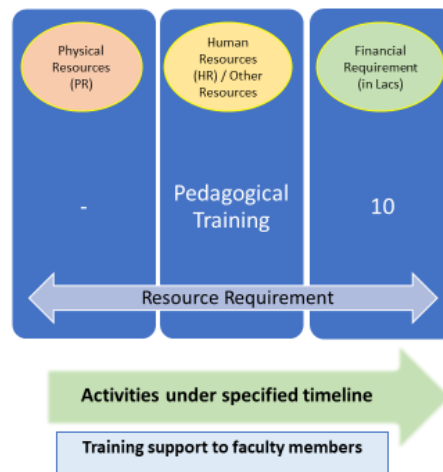
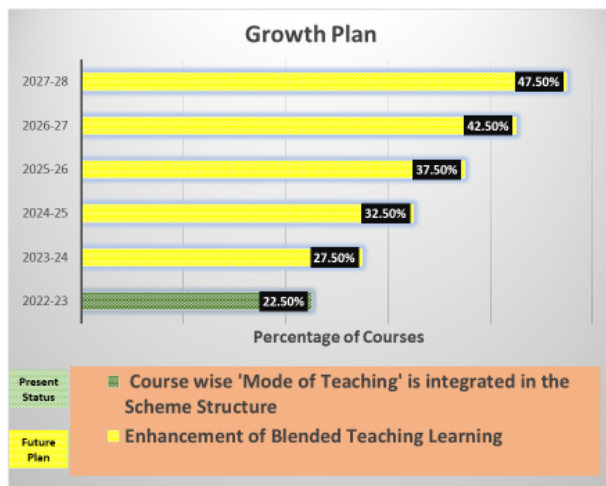
## Online Education: MITS MOOCs



**Accessibility and Flexibility for Teaching Learning**

**Provisioning of Blended Teaching Learning under various modes of Teaching Learning, as per the nature of the course**

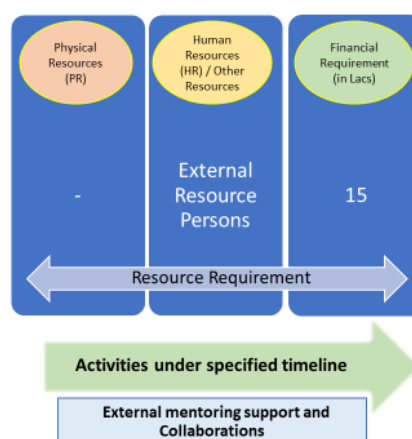
### Accessibility and Flexibility: **Blended Teaching Learning**



**Holistic and Multidisciplinary Education, Knowledge of Many Arts" or "Liberal Arts", Integration of all branches of Creative Human Endeavour**

- Provision of "Novel Engaging Courses" through mentoring system
- External mentoring from various other institutions

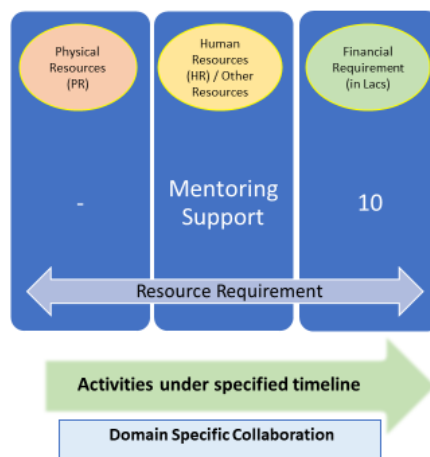
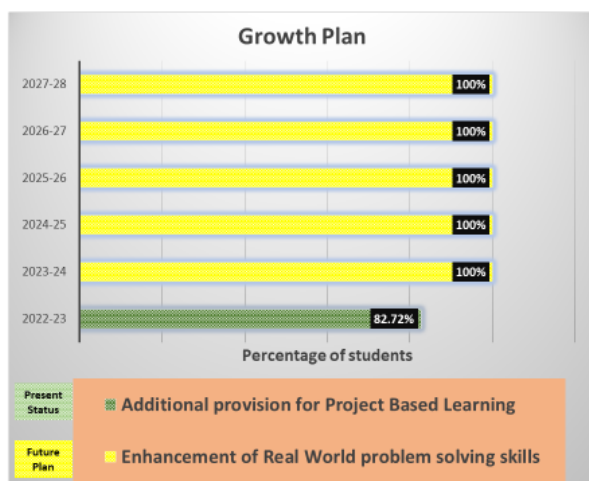
### Holistic Education and Informal Knowledge: **Novel Engaging Courses**



## Skill Development and Creativity

- Provision of Skill based Projects for effective learning

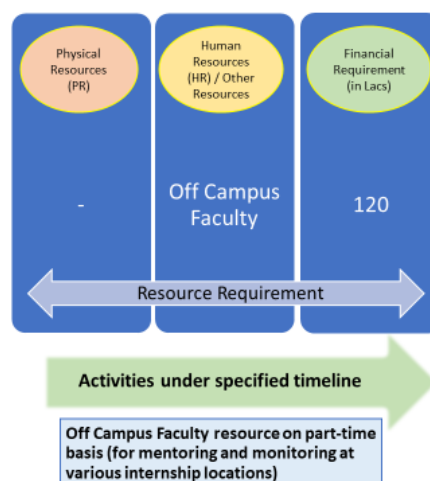
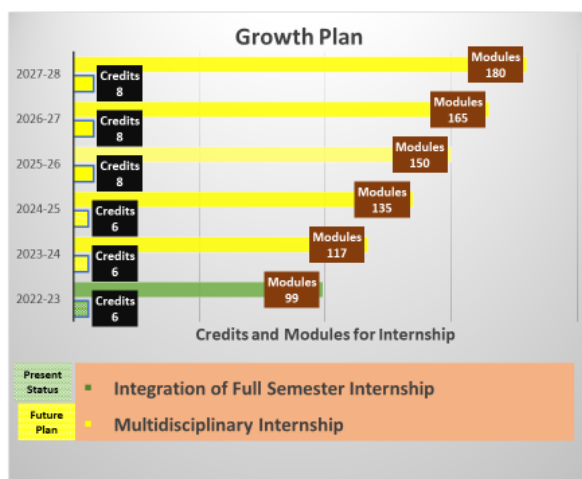
### Skill Development and Creativity: **Skill based Projects**



## Industrial/External Working Exposure through Internship

- Provision of full semester Internship with industry/ organizations
- Scope enhancement (inclusion of SMEs, businesses artists, craft persons etc. for the enrichment of external working environment)

### Industrial/External Working Exposure: **Internship**

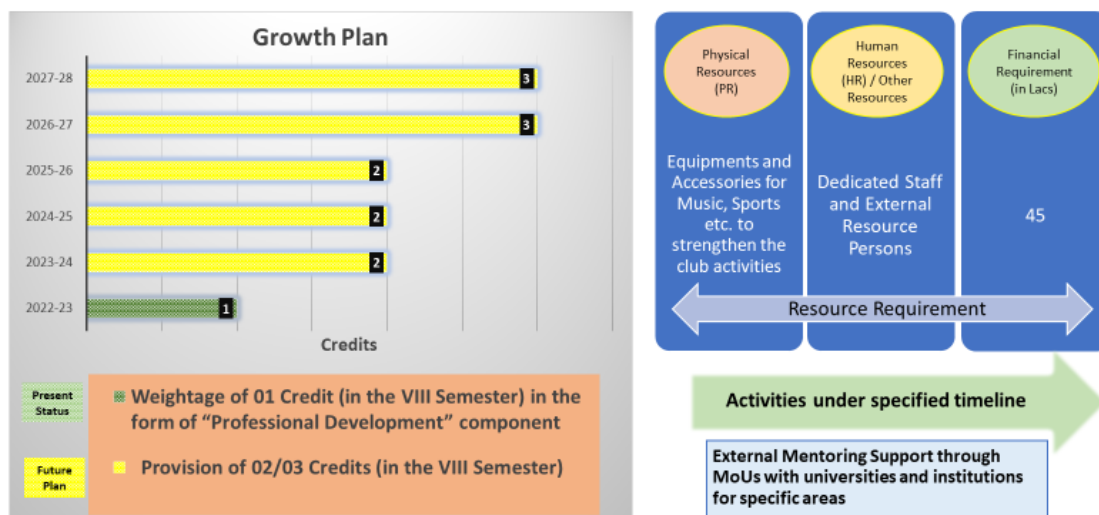




### All Round involvement

- Inclusion of Extra Curricular Activities and attainments in the Curricula through credits (Professional Development)

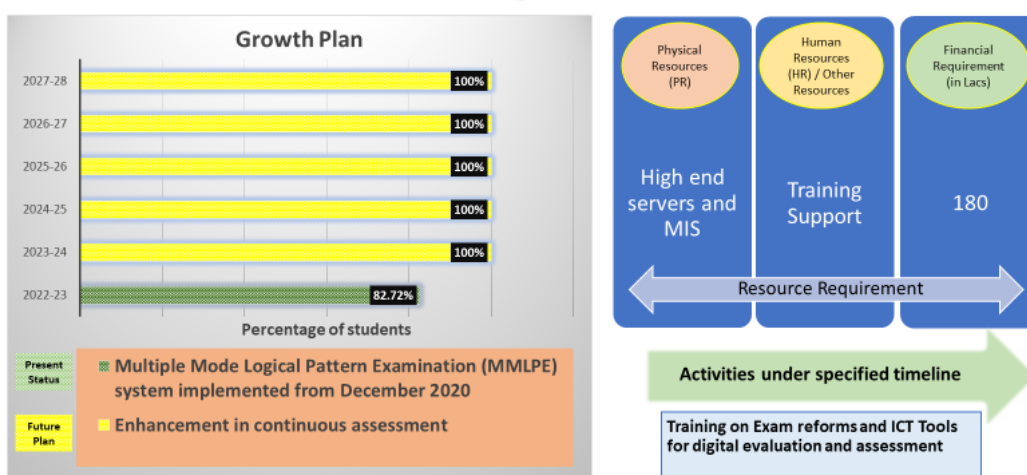
### All Round Involvement: Extra Curricular Activities in the Curricula



### Move Away from high-stake examinations (unburden the students)

- More continuous and comprehensive evaluation
- Implementation of Multiple Mode Logical Pattern Examination (MMLPE) System
- Emphasis on internal assessment and evaluation through well structured mechanism

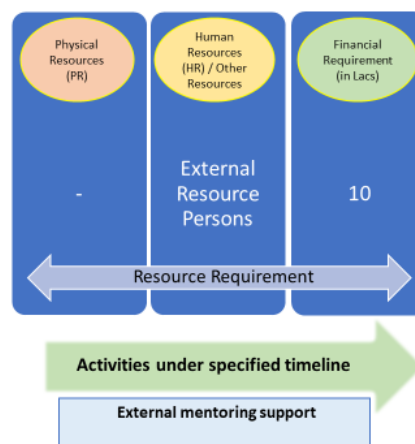
### Moving Away from High-stake Examinations (unburden the students): Continuous and Comprehensive Evaluation



**Integration of “Humanities and Arts” with STEM: Science, Technology, Engineering and Mathematics as STEAM**

- Provision of Mandatory Value based Courses for positive learning Outcomes
- Enhancement of scope by provisioning more value based courses, as per NEP 2020

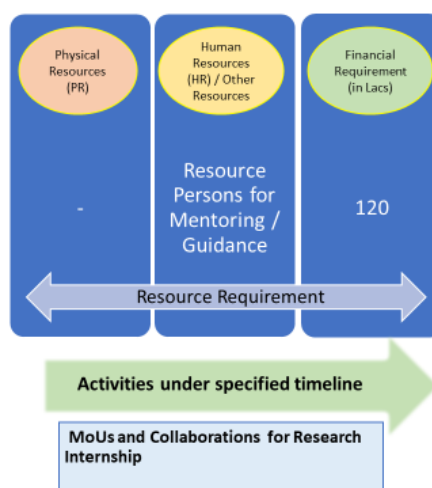
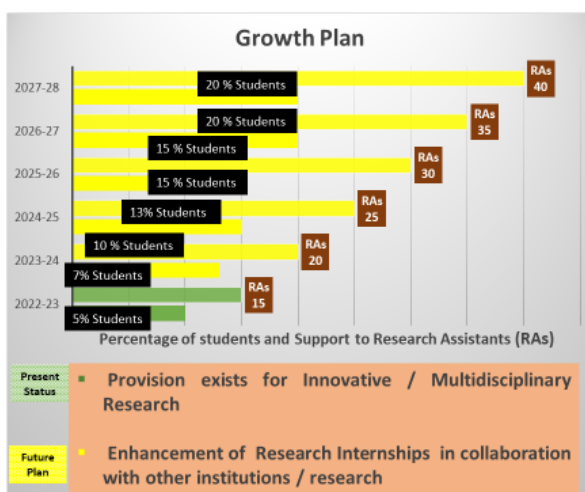
### Humanities and Arts Integration with STEM: **Mandatory Value based Courses**



**Innovative / Multidisciplinary Research**

- Promote research activities by extending support to Research Assistants (RAs)/ students/ faculty members
- Provision for Research Internship for active engagement of students with the practical side of their learning

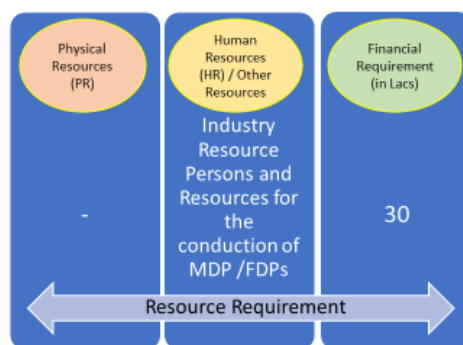
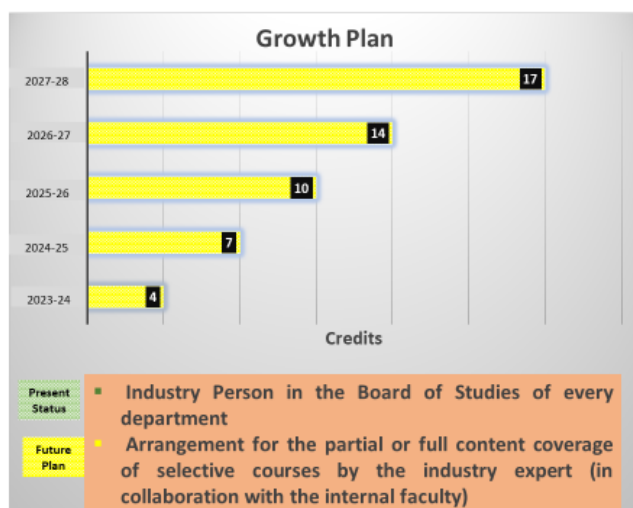
### Innovative/Multidisciplinary Research: **Research Internship**



## Industry Readiness

- Provision of Industry Collaborative Courses
- Provision of Industry Partnership Programmes
- Provision of Vocational Courses

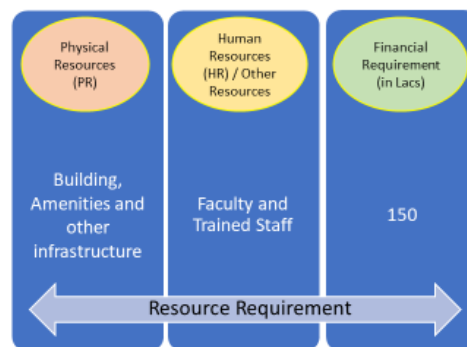
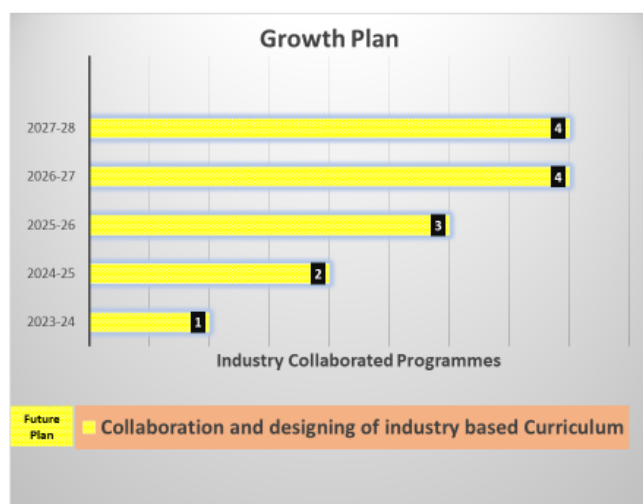
### Industry Readiness: Industry Collaborative Courses



#### Activities under specified timeline

Strengthening the Industry – Institute Interface through MoUs and Collaborations and MDP/FDPs

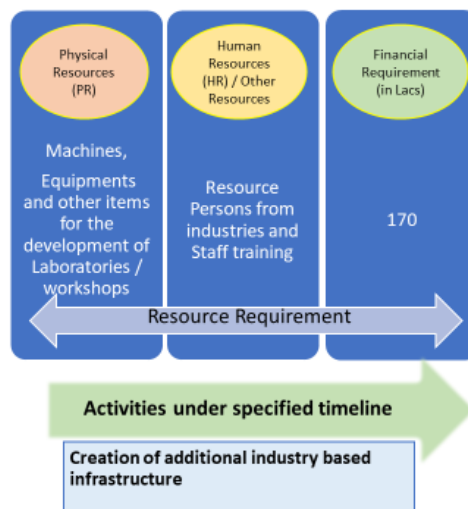
### Industry Partnership Programmes: Industry Collaborated Degree Programmes



#### Activities under specified timeline

Industry Collaboration, Physical Infrastructure and Manpower

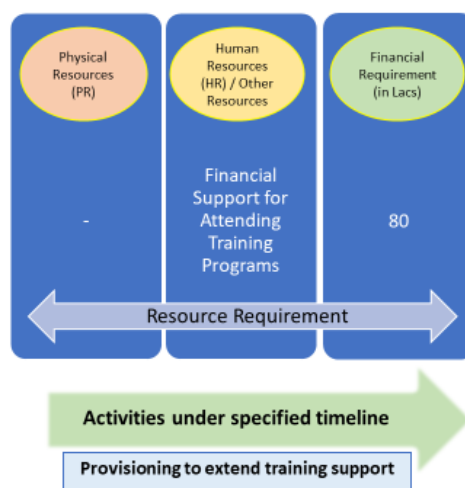
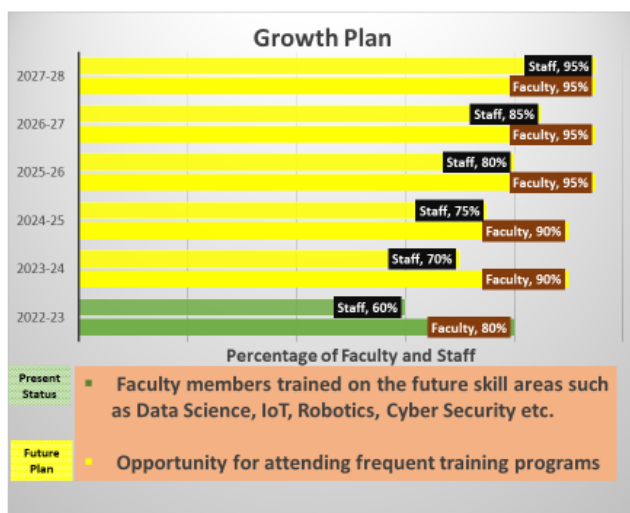
## Industry Readiness: **Vocational Courses**



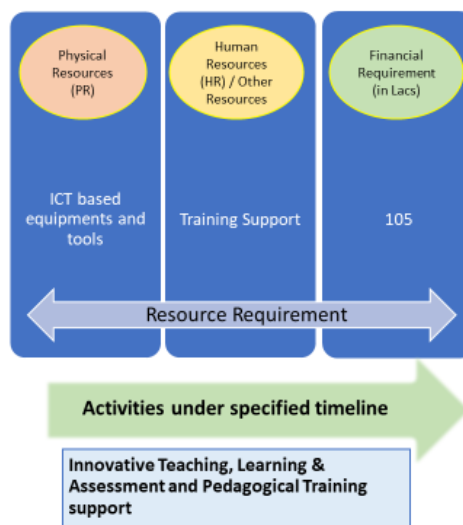
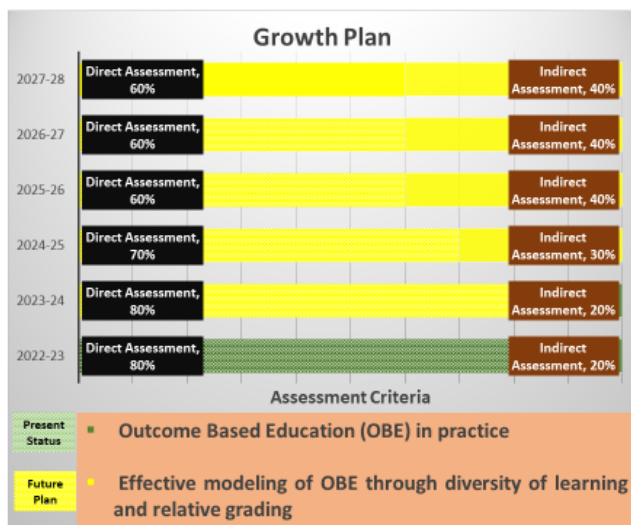
### Facilitation of Training and Innovative Teaching, Learning & Assessment

- Training of faculty members and technical staff for enrichment of their knowledge
- Adoption of Criterion Based Grading
- Diversity of learning methods to be included for more effective modeling of Outcome Based Education (OBE) Model

## Enrichment of Faculty and Staff knowledge: **Facilitation of Training**



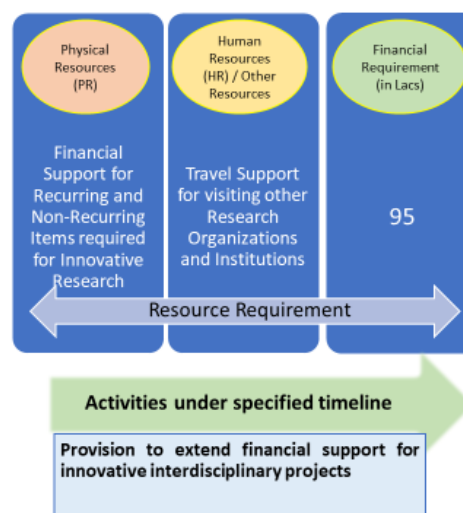
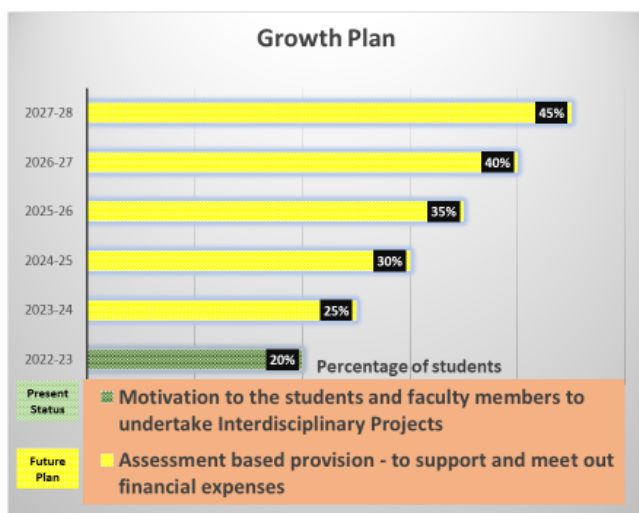
## Innovative Teaching, Learning & Assessment: **Criterion Based Grading**



**Cross disciplinary and Interdisciplinary thinking, Innovation**

- Focus on Interdisciplinary Projects

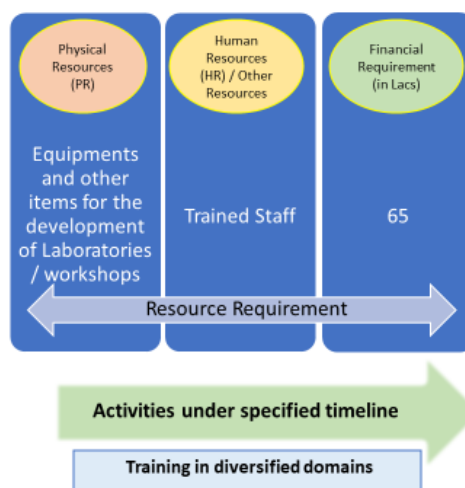
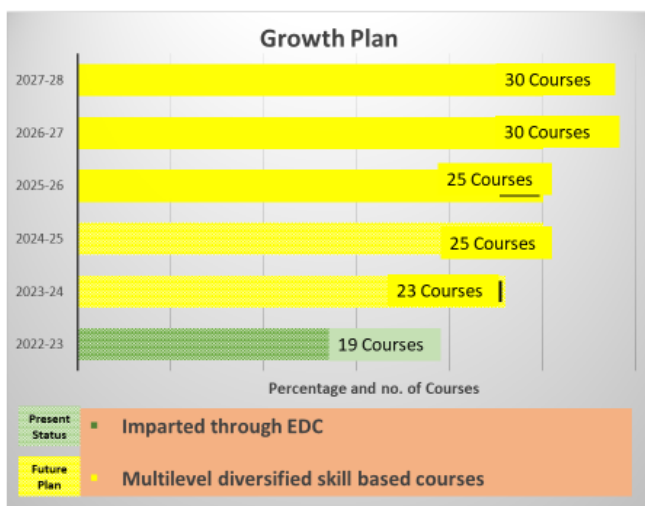
## Cross Disciplinary and Interdisciplinary Thinking, Innovation: **Interdisciplinary Projects**



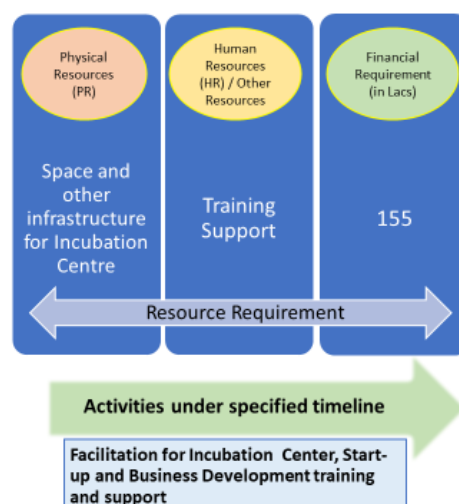
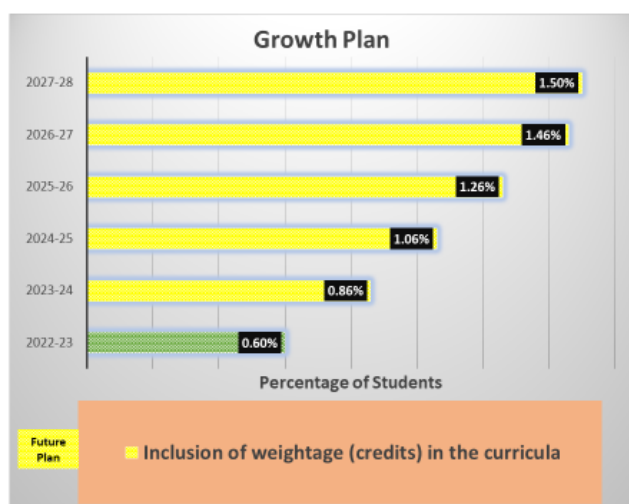
**Promote Entrepreneurship, Start-up activities**

- Provision of Skill based Courses in Local / Regional Language
- Facilitation for Incubation Center, Start-up and Business Development training and support

### Entrepreneurship: Skill based Courses in Local/Regional Language



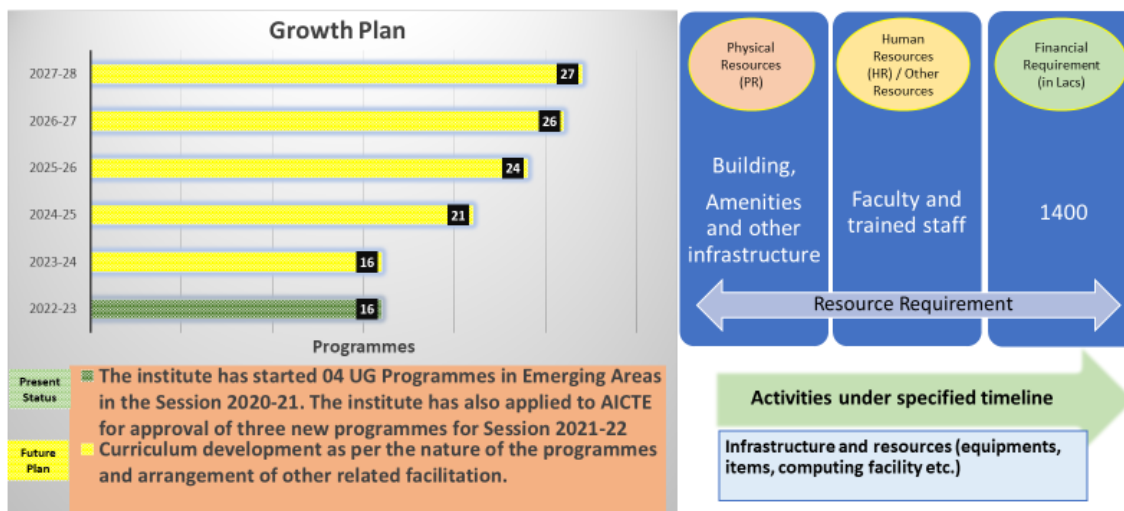
### Entrepreneurship: Start-up Activities



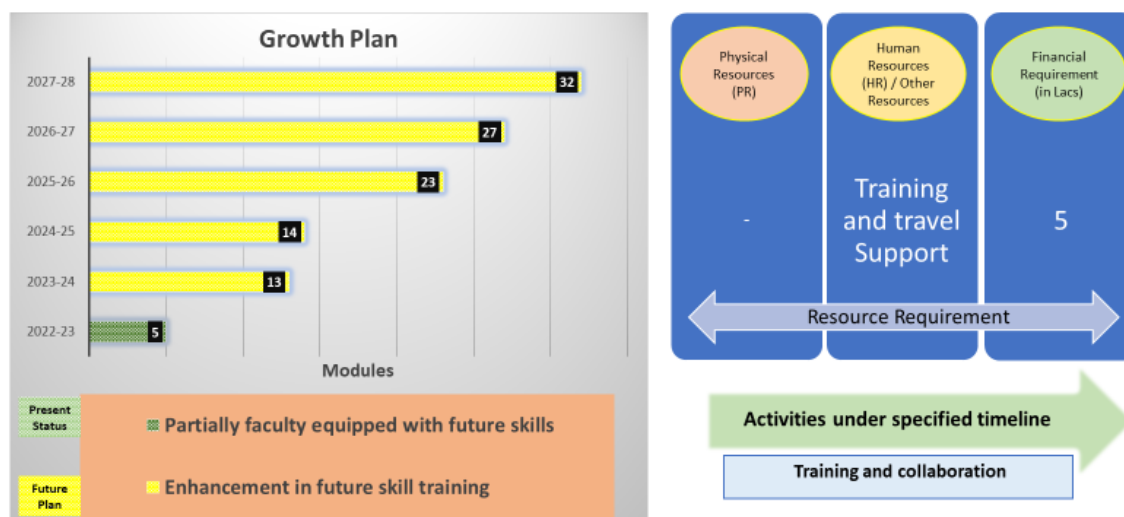


<b>Future Skill Areas and Innovative Domains</b>	<ul style="list-style-type: none"> <li>• Introduction of new Programmes in emerging areas</li> <li>• Provision of Certificate Courses</li> <li>• Provision of courses for Industry Persons (industrial executives / manpower)</li> </ul>
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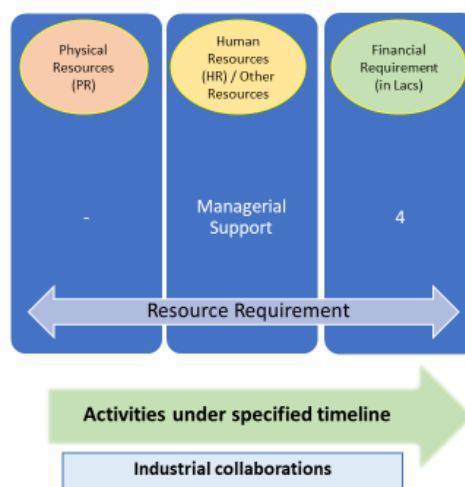
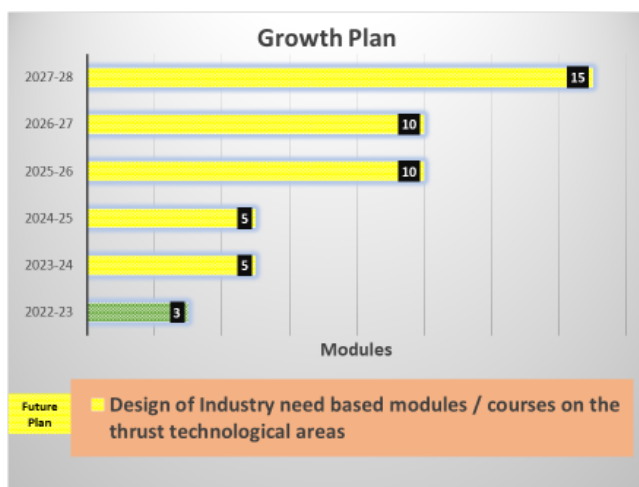
### Future Skill Areas and Innovative Domains: **New UG Programmes in Diversified Domains as per Societal and Industrial Need**



### Future Skill Areas and Innovative Domains: **Certificate Courses**



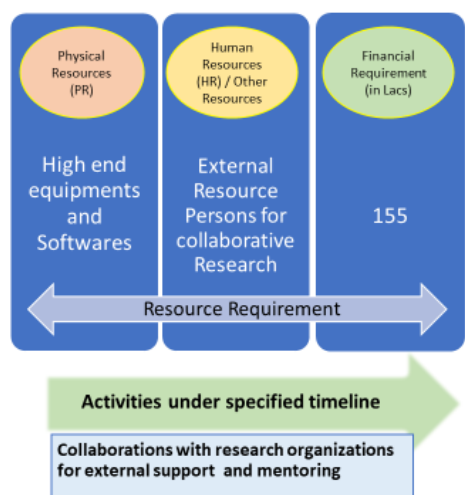
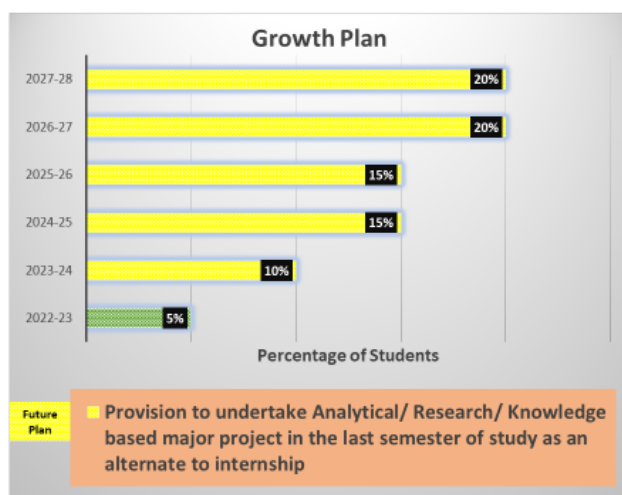
## Industry Executive Training: **Courses for Industry Persons**



**Degree with Research at UG Level**

- Provisioning of Research oriented major project for the award of UG Degree with Research

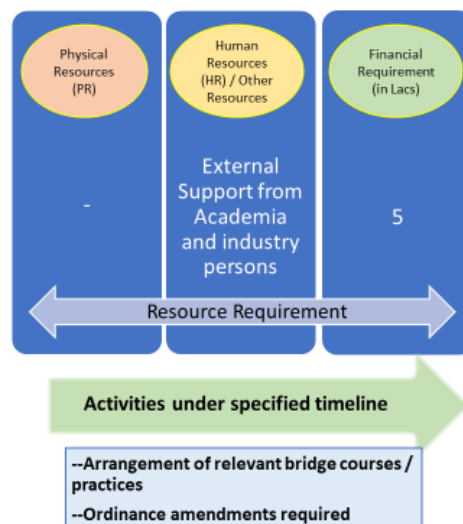
## Degree with Research : **Flexibility and Choice**



## Multiple Entry and Exit Options

- Provisioning to offer certificate, diploma & Bachelor degree for enhanced choice and flexibility

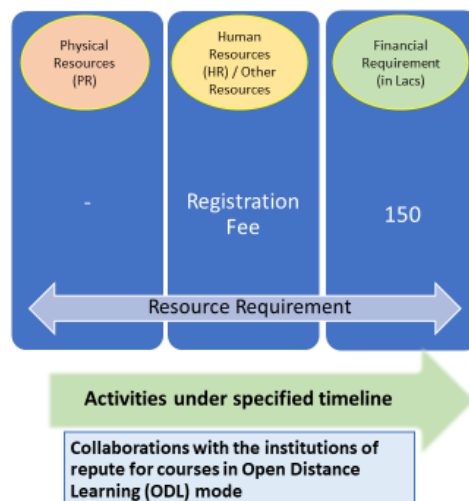
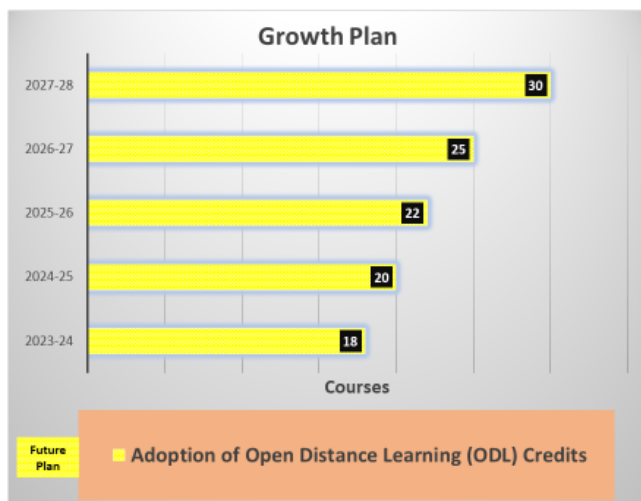
### Multiple Entry and Exit Options: **Flexibility and Choice**



## Promote Education through Open Distance Learning (ODL)

- Provision for the courses and Grades (with credit transfer) through Distance Learning

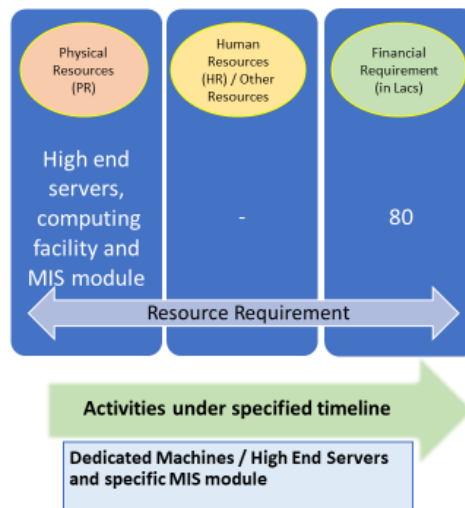
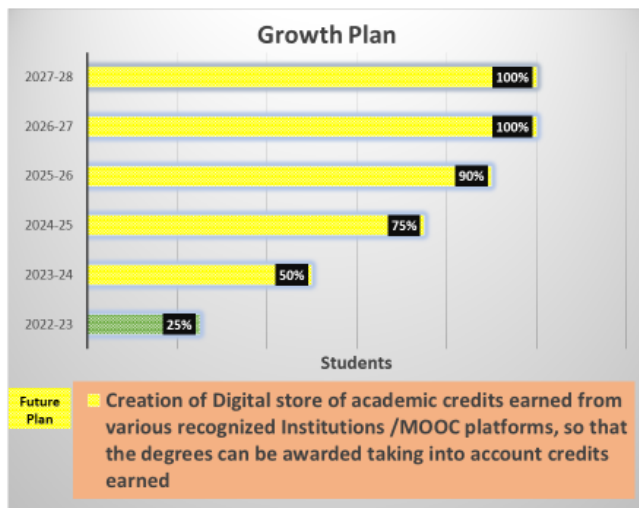
### Open Distance Learning (ODL): **Courses and Grades Acquired Through Distance Learning**



### Academic Bank of Credit (ABC)

- Accountability of Credits earned by an individual from various institutions /platforms

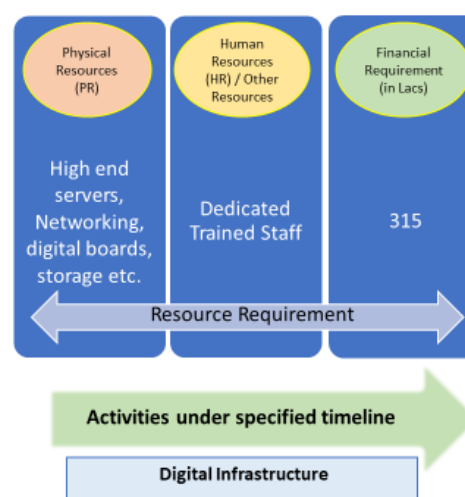
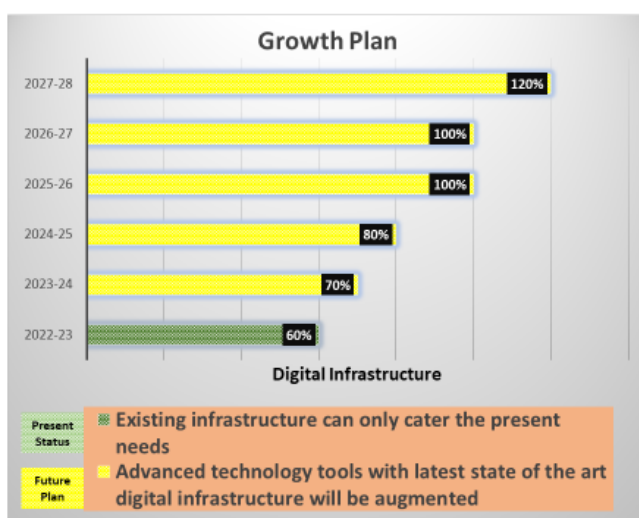
### Academic Bank of Credit (ABC): Accountability of Credits Earned Through Various Platforms



### Digital Infrastructure: Enhancement of Capability and Capacity

- MOOC Development Centre, Smart Class Rooms
- Arrangement of advanced technology tools with latest state of the art digital infrastructure

### Capability and Capacity Enhancement: Digital Infrastructure



### **(a) Research Plan**

- Institute has a well-defined Research Promotion Policy which is disseminated through its website. The Institute has an established Research Committee to promote and encourage research among students and Faculty. Support is provided to faculty members in applying for research projects offered by different funding agencies.
- There are about 100 scholars working in different domains of engineering and science. Institute has created an ecosystem for innovation, creation, and transfer of knowledge by establishing R&D cell, MOUs with industries.
- Research scholars undergo a rigorous coursework and their progress is monitored regularly through the Research Advisory Committees. Scholars are required to publish minimum two papers in the area of their research before submission of the thesis.
- Technical events such as quizzes, projects exhibitions, paper presentations, posters, etc. are organized to showcase talents of students. The Institute organizes FDPs, STTPs, Technical Workshops, Seminars, and National and International Conferences on a regular basis.
- The faculty qualifications are good and many of them have good exposure and research collaboration with institutes of repute and due to being on the expert panels of Central Agencies like the NBA, UPSC etc.
- During the last five-years, faculty members at Institute have published more than 400 research articles in different journals and conference publications. In order to create a research culture among students and faculty, the institution has collaborations with about 400 plus industries/organizations.
- Research grants of more than 3 Crore were received from various agencies for research projects. About 80 workshop/awareness programmes were conducted on Research Methodology, Intellectual Property Rights (IPR), Entrepreneurship and Skill development.
- More than 100 books and chapters in edited volumes/books were published and around same number of papers were presented in national/international conference-proceedings.
- Revenue of around Rs. 1.0 Crore was generated from consultancy during the last five years. More than 100 extension and outreach activities were carried out by the Institute through NSS/NCC.
- More than 500 collaborative activities are carried out for research, faculty/student exchange and industry Internships. 25 plus active collaborations and MoUs have been in action with industries, government and research organizations in India.

## Fifteen Year Research Plan

Research, Development, Innovations & Professional practices					
Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Providing research grant/ Seed money to faculty for innovative research			Implemented	Enhancement
2	Recognition & support to faculty for national/international fellowship for advanced studies/research			Yes	Enhancement
3	Recognition & support to faculty for receiving Research & development funds from various agencies, industries and other organizations (minor, Major, interdisciplinary, industry supported projects)			Yes	Enhancement
4	Support for Innovative Students projects			Partially	Fully Deserving
5	Support for International projects taken by faculty & students.			NA	Implementation
6	Conduction of Workshop and seminar on IPR & Industry-Academia Innovative Practices			03/Year	05/ Year
7	Recognition & awards for innovation by faculty/research scholars/students			Yes	To be continued
8	Development of Incubation Centre			In-Process	Fully supported including Financial Support
9	Promotion for Start-up incubated on campus to commercialise research innovations annually			In-Process	Fully supported including Financial Support
10	Increase in number of Ph.D. awarded & Admission			Awarded-53 Admitted: 65	Awarded: 103 Admitted: 100+

11	Increase in Research Publication in SCI/SCOPUS indexed journals (in last 5 years)	308/401	500/700
12	Increase in Books and Chapters in edited volumes	Books/ Chapters: 80	Books/ Chapters: 200
13	Increase in Publication of research papers in national and international Journals & conference proceedings/Year	01 /Per Faculty	02 Per Faculty
14	Increase in Quality of publication-Citation Index of Faculty Members ( Last five year Web of Science & Scopus Index)	Web of Science: 1565 Scopus: 2093	10% increase per year
15	Increase in Patents applied/awarded/published	Granted:08 Published: 11 Applied: 15	Granted:35 Published: 50 Applied: 20
16	Support for Faculty Participating in Seminar / Conferences	100% Support	100%
17	Increase in Revenue generation through Consultancy & Industrial training	5%	8%
18	Linkage with Institutes/industries for internship, on-the job training, project work, sharing of research facilities along with Faculty & Students exchange program	Initiatives taken	Effective implementation
19	Signing MoUs with institutions of national, international importance, other institutions, industries, corporate houses.	51 MOUs	100+ MOUs
20	Motivating research and development leading to technologies with immediate societal value (water, energy, housing, healthcare, education, etc.)	Initiatives taken by framing research groups of faculty	Effective implementation
21	Establishing research centres of excellence	NA	01 /Year
22	Establish mechanism to support high impact research through an annual call for proposals and a process for identification of	Implemented w.e.f 2017-18	All Deserving



	thrust areas.		
23	Encourage formation of multi-disciplinary research centres in high potential areas.	Developed	Effectiveness Enhancement with induction of students with faculty of other institute
24	Proactive and flexible mechanisms to attract high quality faculty and researchers	Under Process	Effectiveness Enhancement
25	Create research groups to attract students for PhD programme.	Implemented w.e.f 2018-19	Increase in numbers
26	Encourage and support advanced research conferences at the Institute.	02/Year	04/Year
27	Enable PhD student exchanges with partner international universities.	Under process	Effective Implementation
28	Enhance facilities and working environment for PhDs and post-doctoral researchers.	Adequate Level	As per Global Standard
29	Enhancing Placement activities and dedicated PlaceComm Cell to promote and enhance PG & PhD placements.	Adequate Level	Effectiveness Enhancement
30	Increased publications per faculty, citations per faculty, citations per paper	Adequate	As per NIRF
31	Increase in annual research funding.	3.28%	7%
32	Initiate Joint Academic Courses in Medicine/Healthcare/Agriculture/physical education in collaboration with other institutions.	Under Progress	Implemented

<b>Rresearch grant/ Seed money to faculty</b> <table><tr><td>2023-24</td><td>Yes</td></tr><tr><td>2033-2038</td><td>Enhancement</td></tr></table>	2023-24	Yes	2033-2038	Enhancement	<b>Conduction of Workshop and seminar on IPR &amp; Industry-Academia</b> <table><tr><td>2023-24</td><td>03/Year</td></tr><tr><td>2033-2038</td><td>05/Year</td></tr></table>	2023-24	03/Year	2033-2038	05/Year	<b>Recognition &amp; awards for innovation by faculty/research scholars/students</b> <table><tr><td>2023-24</td><td>Yes</td></tr><tr><td>2033-2038</td><td>To be Continued</td></tr></table>	2023-24	Yes	2033-2038	To be Continued
2023-24	Yes													
2033-2038	Enhancement													
2023-24	03/Year													
2033-2038	05/Year													
2023-24	Yes													
2033-2038	To be Continued													
<b>Support for International projects taken by faculty &amp; students.</b> <table><tr><td>2023-24</td><td>NA</td></tr><tr><td>2033-2038</td><td>Implemented</td></tr></table>	2023-24	NA	2033-2038	Implemented	<b>Development of Incubation Centre</b> <table><tr><td>2023-24</td><td>In-Process</td></tr><tr><td>2033-2038</td><td>Fully supported including Financial Support</td></tr></table>	2023-24	In-Process	2033-2038	Fully supported including Financial Support	<b>Increase in number of Ph.D. awarded &amp; Admission</b> <table><tr><td>2023-24</td><td>Awarded-53 Admitted: 65</td></tr><tr><td>2033-2038</td><td>Awarded: 103 Admitted: 100+</td></tr></table>	2023-24	Awarded-53 Admitted: 65	2033-2038	Awarded: 103 Admitted: 100+
2023-24	NA													
2033-2038	Implemented													
2023-24	In-Process													
2033-2038	Fully supported including Financial Support													
2023-24	Awarded-53 Admitted: 65													
2033-2038	Awarded: 103 Admitted: 100+													
<b>Increase in Research Publication in SCI/SCOPUS indexed journals (in last 5 years)</b> <table><tr><td>2023-24</td><td>308/401</td></tr><tr><td>2033-2038</td><td>500/700</td></tr></table>	2023-24	308/401	2033-2038	500/700	<b>Increase in Books and Chapters in edited volumes</b> <table><tr><td>2023-24</td><td>Books/ Chapters: 80</td></tr><tr><td>2033-2038</td><td>Books/ Chapters: 200</td></tr></table>	2023-24	Books/ Chapters: 80	2033-2038	Books/ Chapters: 200	<b>Increase in Publication of research papers in national and international Journals</b> <table><tr><td>2023-24</td><td>01 /Per Faculty</td></tr><tr><td>2033-2038</td><td>02 Per Faculty</td></tr></table>	2023-24	01 /Per Faculty	2033-2038	02 Per Faculty
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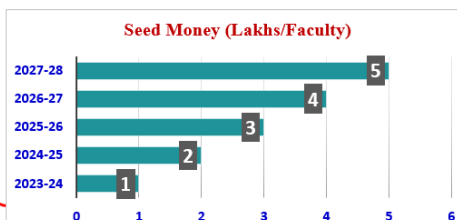
<b>Increase in annual research funding</b> <table><tr><td>2023-24</td><td>3.28%</td></tr><tr><td>2033-2038</td><td>7%</td></tr></table>	2023-24	3.28%	2033-2038	7%	<b>Support for Faculty Participating in Seminar / Conferences</b> <table><tr><td>2023-24</td><td>100% Support</td></tr><tr><td>2033-2038</td><td>100%</td></tr></table>	2023-24	100% Support	2033-2038	100%	<b>Increase in Revenue generation through Consultancy &amp; Industrial training</b> <table><tr><td>2023-24</td><td>5%</td></tr><tr><td>2033-2038</td><td>8%</td></tr></table>	2023-24	5%	2033-2038	8%
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<b>Signing MoUs with institutions of national, international importance.</b> <table><tr><td>2023-24</td><td>51 MOUs</td></tr><tr><td>2033-2038</td><td>100+ MOUs</td></tr></table>	2023-24	51 MOUs	2033-2038	100+ MOUs	<b>Encourage and support advanced research conferences at the Institute.</b> <table><tr><td>2023-24</td><td>02/Year</td></tr><tr><td>2033-2038</td><td>04/Year</td></tr></table>	2023-24	02/Year	2033-2038	04/Year	<b>Create research groups to attract students for PhD programme.</b> <table><tr><td>2023-24</td><td>Implemented w.e.f 2018-19</td></tr><tr><td>2033-2038</td><td>Increase in numbers</td></tr></table>	2023-24	Implemented w.e.f 2018-19	2033-2038	Increase in numbers
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<b>Enhance facilities and working environment for PhDs and post-doctoral researchers</b> <table><tr><td>2023-24</td><td>Adequate Level</td></tr><tr><td>2033-2038</td><td>As per Global Standard</td></tr></table>	2023-24	Adequate Level	2033-2038	As per Global Standard	<b>Increase in Quality of publication- Citation</b> <table><tr><td>2023-24</td><td>1565 Scopus: 2093</td></tr><tr><td>2033-2038</td><td>10% increase /year</td></tr></table>	2023-24	1565 Scopus: 2093	2033-2038	10% increase /year	<b>Increase in Patents applied/awarded/published</b> <table><tr><td>2023-24</td><td>Granted:08 Published: 11 Applied: 15</td></tr><tr><td>2033-2038</td><td>Granted:35 Published: 50 Applied: 20</td></tr></table>	2023-24	Granted:08 Published: 11 Applied: 15	2033-2038	Granted:35 Published: 50 Applied: 20
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## Five Year Research Plan

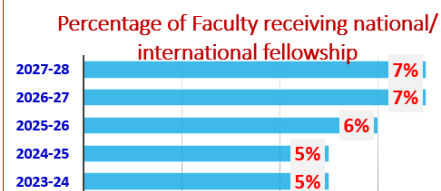
S. No.	Parameter	2023-24	2024-25	2025-26	2026-27	2027-28
1.	Seed money to Faculty for research	Up to 01 Lacs/ Faculty	Up to 02Lacs/ Faculty	Up to 03 Lacs/ Faculty	Up to 04 Lacs/ Faculty	Up to 05 Lacs/ Faculty
2.	Percentage of Faculty receiving national/ international fellowship/financial support by various agencies for advanced studies/ research	05%	05%	06%	07%	07%
3.	Research funding from Government and non-government sources	20 Lacs	20 Lacs	40 Lacs	40 Lacs	50 Lacs
4.	Percentage of Faculty having research projects	30%	30%	30%	35%	35%
5.	Percentage of Faculty recognised as research guides	30%	30%	30%	35%	35%
6.	Number of candidates registered for Ph.D per Faculty	06	06	06	06	06
7.	Number of research papers published per Faculty in the Journals as notified on UGC CARE list	01	02	02	02	02

8.	Number of books and chapters in edited volumes published per Faculty	01	01	01	02	02
9.	Bibliometrics of the publications during the last five years based on Scopus/ Web of Science – h-index of the Institution	20	20	20	20	20
10.	Number of functional MoUs/linkages/collaboration with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research	06	06	08	08	08
11.	Revenue generated from consultancy and corporate training	50 Lacs	50 Lacs	100 Lacs	100 Lacs	100 Lacs
12.	Number of Exchange Programme for Student and Faculty for Research	03	03	05	05	07

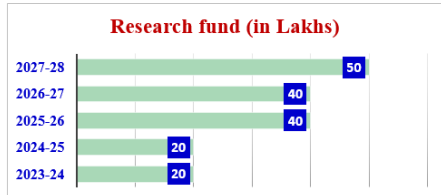
### Seed money to Faculty for research



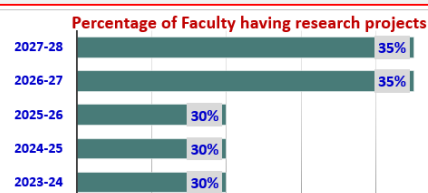
### Percentage of Faculty receiving national/international fellowship/financial support



### Research funding from Government and non-government sources



### Research Projects



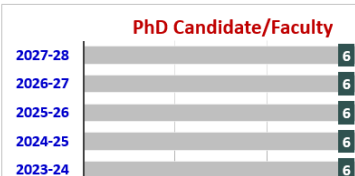
### Number of books and chapters in edited volumes published per Faculty



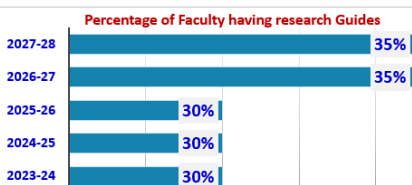
### Number of research papers published per Faculty in the Journals as notified on UGC CARE list

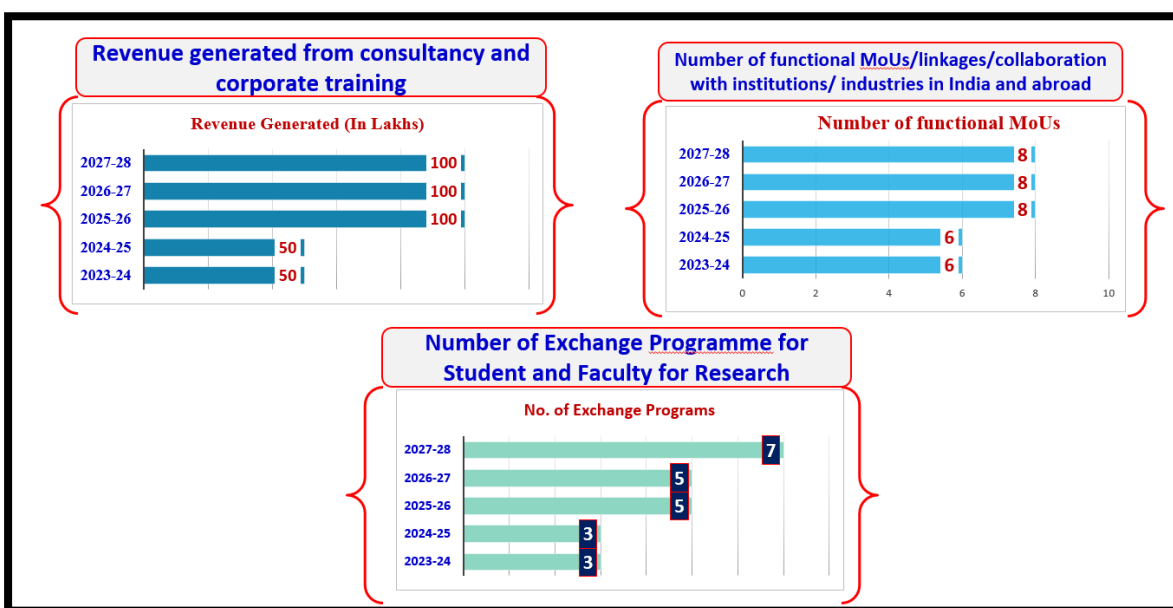


### Number of candidates registered for Ph.D per Faculty



### Research Guides





## Identified Research Domains

Adhoc Network	Maintenance Management
AI applications to Electrical Power Systems	Marketing Management
Bio- Medical Instrumentation	Mathematical Modelling in ecology
Bio Signal Processing	Mechanical Behaviour of Materials
Biomaterials	Mechanical system Design
Biomechanics	Medical Image Processing
Biometrics	Microfluidics
Catalysis	Microwave Engineering
Cement	Modeling & Simulation
Communication Engineering	Molecular Biology
Composite Materials	Multilevel Inverters
Computational Fluid Dynamics	Nanoelectronics
Computer Networks	Network Security
Computer vision and machine learning	Number Theory
Condition Monitoring	Numerical Method
Construction Technology & Management	Optical Communication & Networking
Control systems	Optimization Techniques
Cryptography	Performance and Economic Analysis
Data Mining	Power Quality
Data Science	Power System
Data Science using Python	Power System Operation & Control
	Product Design

<p>Data Structures, DBMS Deep learning Differential equation Computation Digital Communication Digital modulation Digital Signal Processing EEG Signal Processing Electric Vehicles Antenna Designing Energy Energy Auditing and management Engineering Materials Environmental Engineering Finite Element analysis Fluid Dynamics Fuzzy logic Geotechnical engineering Grid Connected Systems Hesitation Mining High Performance Computing HRM OB Operations Hybrid evolutionary computing Hybrid renewable energy systems Image and Signal Facing Image Processing Impact and blast resistant structures Information Security Integration of Renewable Energy Intelligent Computational Techniques Internet of things (IoT)</p>	<p>Production &amp; Operation Management Production &amp; Manufacturing Psychoanalytical Approaches to English Fiction Quality Assurance Renewable energy Repair and seismic retrofitting and strengthening of structures Security Sentiment Analysis Separation Processes signal Processing Smart City Soft Computing Application Solar Energy Solar Rooftop PV systems Solid Waste Management Special Functions Speech Recognition Spray Forming Stress and Vibration analysis Structural Engineering Structural Response Control supplementary cementitious materials System Reliability Technical Education Thermal Engineering Toxicology and Environmental Engineering Tribology and Maintenance Ultra-high performance concrete Urban Planning VLSI Design Water Resource Engineering Welding Technology Wireless Networks</p>
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### **(c)Infrastructure Development Plan**

- The Institute is spread over an Area of 44.6 acre which is lush green and has an aesthetic landscape.
- The Institute constantly endeavors to provide quality education and ensure all round development of students.
- The Institute has well maintained adequate number of class rooms, laboratories, computing equipments well beyond the regulatory guidelines conducive for teaching learning activities.
- The Institute has total 59 number of class rooms including seminar halls, conference halls and studios which are well equipped with ICT Audio Video facilities like Smart LCD Projectors, Wi-Fi LAN enabled etc. which help teachers and students to share their ideas among themselves.
- The Institute has total of 68 number well equipped laboratories including computing labs in all the departments to provide hands-on experience to the students, some of the laboratories are equipped with ICT facilities. Virtual labs are also developed for lab classes.
- A total of 615 computers are available exclusively for student usage. Apart from these, computers and laptops have been provided to the departments for faculty usage.
- The computing facilities include licensed software's and also open software's are being used as per the curricula requirements. Some of the licensed software's are ANSYS, MATLAB, PS CAD, Proteus Design Suite, Office Pro Plus 2016, SQL Server ST2016, Turnitin (for plagiarism checking) etc.
- The Institute has internet connectivity via lease line of 100 MBPS from NKN and 100 MBPS from IshanNetsol.
- The entire campus is Wi-Fi enabled with 24/7 internet facilities to the students and staff. The Institute has following servers available: HP Xeon 8 Core (2.10 GHz), Intel Xeon E5-2603v3 (1.6 GHz) State –of –art MOOC development centre has been established in the Institute where in faculty members develop their MOOCs.
- The Institute has its own MOODLE server since 2017 to facilitate E-learning, evaluation including conduction of Mid Semester & End Semester Exams (MCQ based type). NPTEL local chapter has been established since 2017 to provide e-learning through MOOC courses.
- There is a shop for Xerox and stationery within the campus to cater to the needs of students.

- There are 01 Boys Hostel & 03 Girls Hostel functional in the Institute at the moment which are equipped with facilities including mess etc.
- As per the Vision of Institute, the Institute has created administrative block, Academic Infrastructure & amenities. Presently, Construction of one additional Academic Block is also under progress to accommodate the need of increased intake of students in future.
- In the last three years, augmentation in physical infrastructure, equipment, library & Digital Teaching-Learning facility is done to ensure the need arisen due to increase in intake, market demand for emerging areas of Technology & Covid-19 pandemic challenges.

**Methodology to ensure adequacy of Teaching-Learning Infrastructure & Facilities:** Every year, before commencement of next financial year, a need based analysis is done by every department & section to identify the additional requirement for teaching-learning infrastructure considering following:

- AICTE Norms
- Recommendation of BoS
- Removal of obsolesce as per current Technological Demands
- Students strength/Intake
- Feedback received from Stakeholders
- Perspective Plan of Institute
- Budget constraints (if any)
- Guidelines of Quality Assurance Bodies like NBA, NAAC etc.

The proposals received from various Departments/Sections are compiled at Institute level for the review and approval of Infrastructure committee of BoG. The recommendations of Infrastructure committee are further reviewed and approved in the Finance/BoG meeting for budgetary provision in next financial year.

Teaching-Learning Facilities in the Institute:

The Institute has twelve Departments namely Civil Engineering, Electrical Engineering, Mechanical Engineering, Electronics Engineering, Computer Science & Engineering, Information Technology, Chemical Engineering, Architecture & Planning, Management, Mathematics & Computing, Applied Science & Humanities. In all the departments & central level following facilities are provided as per AICTE standards and curriculum needs:

**Classrooms:** As per AICTE guidelines on area requirement, Institute has developed adequate number of well-furnished, well ventilated, classrooms equipped with ICT facility.

**Laboratories:** All the laboratories are established as per AICTE norms & equipped with equipments, machines, software and computing facilities according to BoS

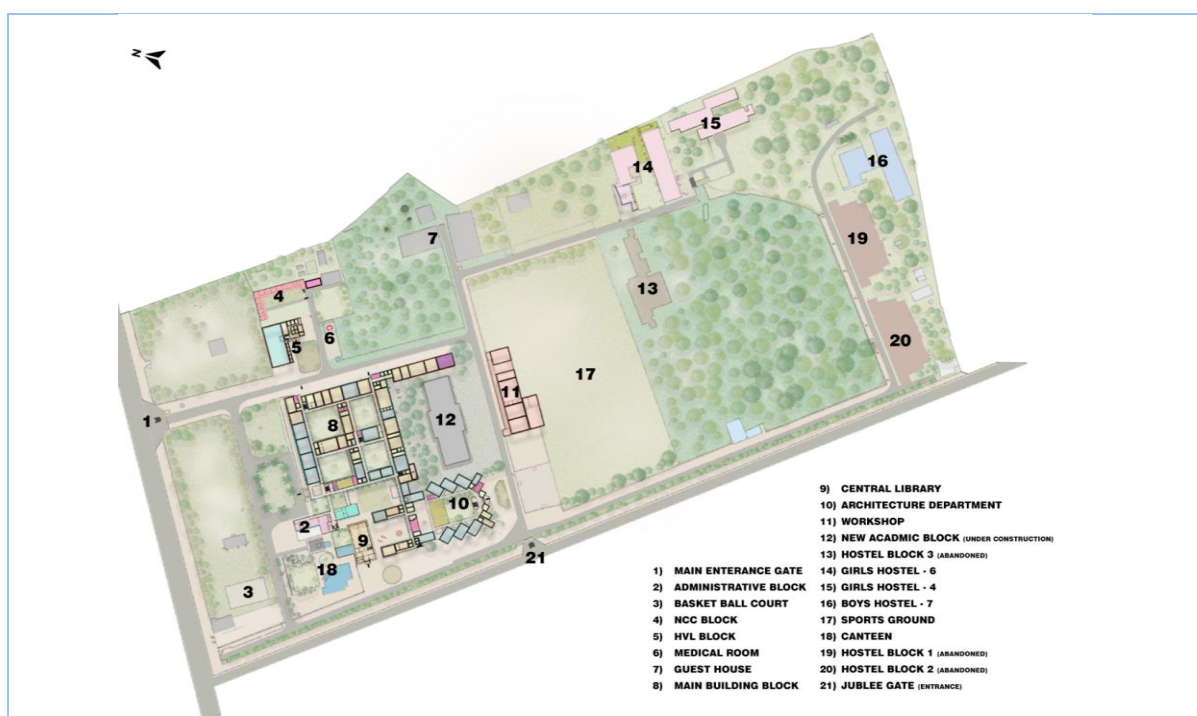
recommendations on curriculum for the conduction of experiments/practical's to ensure achievement of lab course outcomes. Laboratories are also utilized for mini & major projects, skill based component as a part of teaching & contents beyond the syllabus. The virtual labs are also developed for online lab classes.

**Seminar Hall/ Tutorial rooms:** The Institute has multiple seminar Halls & Tutorial for presentations, various expert talks, group discussions, tutorial & remedial classes.

**Central Library:** Central Library of the Institute can be considered as a very special place in the MITS Campus with its rich collection of books and journals in the field of Engineering and Architecture related disciplines. Central Library currently houses around 109443 books in different heads i.e Library grant, Student chapter grant & Book bank grants, collection includes textbooks and Reference books for Engineering Graduates, Post Graduates and Ph.D. curriculum in Civil Engineering , Mechanical Engineering, Electronics, Electrical, Computer Science & Information Technology , Management, and Architecture Disciplines. Library collection also includes documents in Computer Science, History of Science, Fictions, Stories, General books, Encyclopaedias and Dictionaries, Magazines etc.

#### **Internet**

- National Knowledge Network (NKN) through RailTel: Available bandwidth: 100 MBPS Dedicated Leased Line
- Ishan Netsol: Available bandwidth: 100 MBPS Dedicated Leased Line
- Wi Fi availability: Yes, Both in Academics Area and Hostels. The entire campus is WiFi enabled with 24/7 internet facilities to the students and staff.
- Internet access in labs, classrooms, library and offices of all Departments: Yes (everywhere with Fibre Backbone) Wired and well as Wireless with Firewall and protected and being monitored through Proxy.
- Security arrangements: Linux proxy server is being used for recording user activity on the server. The internet access (wireless and wired both) is password protected. Iptables are being used as firewall and to define access rules. Un-required Sites are blocked by using pattern matching rules.
- The Institute has following servers available: HP Xeon 8 Core (2.10 GHz), Intel Xeon E5-2603v3 (1.6 GHz)
- Some of the licensed software's are ANSYS, MATLAB, PS CAD, Proteus Design Suite, Office Pro Plus 2016, SQL Server ST2016, Turnitin (for Plag checking) etc.

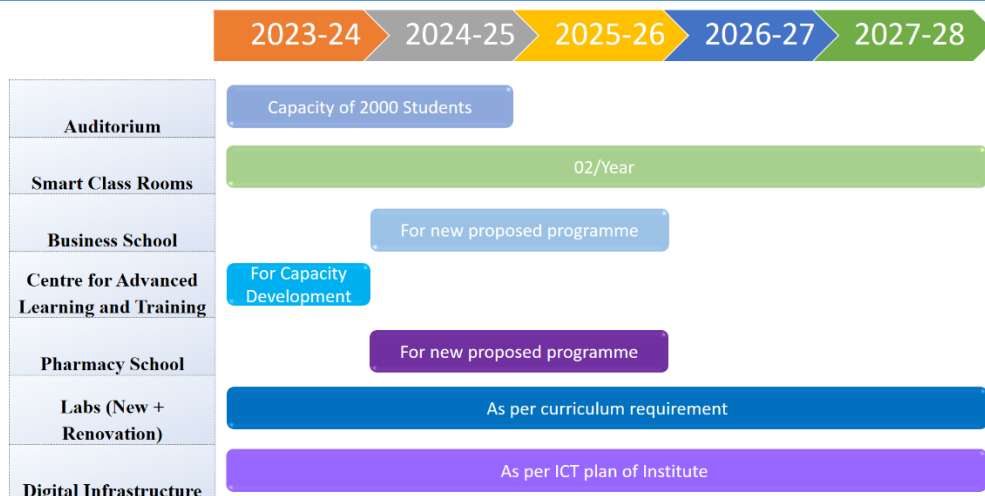


### Fifteen Years Infrastructure Development Plan

Years	2023-2028	2028-2033	2033-2038	Status	Intervention
Improvement /up-gradation & increase in existing facilities					
1.	Modernization and expansion of Class rooms, Laboratories, Seminar halls, smart classrooms, & equipment.			70%	100%
2.	Automation of Library (integrated Library Management System)			70%	100%
3.	Automation/digitization of examination, evaluation system			60%	100%
4.	Up-gradation of LMA (Learning Management System)/MOODLE			Under progress	Continuous up-gradation
5.	Up-gradation in IT Infrastructure (Computer, Internet, Browsing Centre, Computer centres, Departments CC, Available band width			Under Progress	Continuous up-gradation
6.	Up-gradation of all buildings and their surroundings to global standards in cleanliness and safety			Adequate	As per Global Standard

7.	Creating comfortable accommodation to all students and scholars in hostel	Accommodating 600 Students	2000
8.	Provide well-maintained and accessible sports facilities for all major sports	Partial	Full facilities
9.	Development of Additional Academic Block	--	Academic block for new UG & PG programmes/ increase in intake
10.	Development of Auditorium for Academic Activities	--	Auditorium with capacity of 1000 Students
11.	Provide sufficient well-maintained quarters for the faculty and staff	Limited	Adequate
12.	Development of "Continuing Education Program Centre/ Centre for Advanced Learning and Training" for organizing various faculty & Staff Development activities	--	Dedicated faculty & Staff Development Centre
13.	Project laboratory/Incubation Facilities for students and faculty	Limited	Adequate
14.	Renovation of Institute Guest House	Limited	Adequate
15.	Renovation of Laboratories and Development of New Laboratories	Adequate	As per future needs
16.	Development of Business School	-	For new proposed programme
17.	Development of Pharmacy School/Department	-	For new proposed programme

## Infrastructure Development Plan for next Five Years

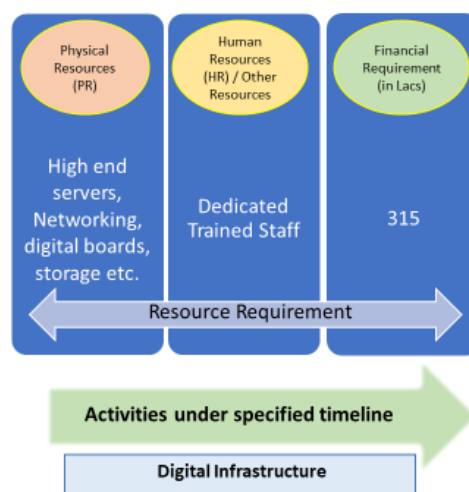
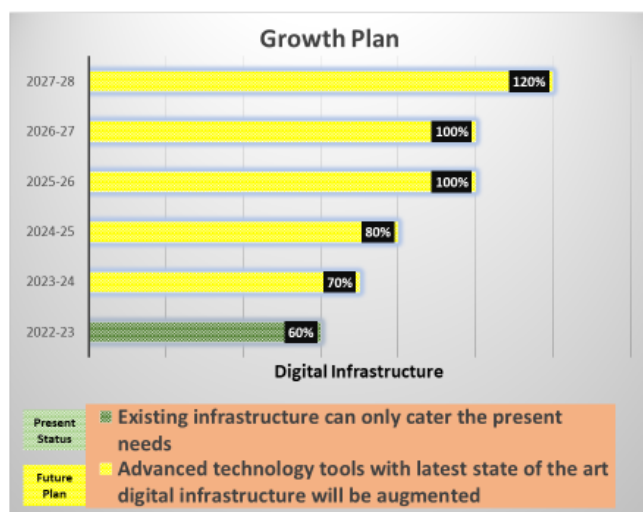


## Capability and Capacity Enhancement through Digital Infrastructure

**Digital Infrastructure: Enhancement of Capability and Capacity**

- MOOC Development Centre, Smart Class Rooms
- Arrangement of advanced technology tools with latest state of the art digital infrastructure

### Capability and Capacity Enhancement: Digital Infrastructure



#### **(d) Governance & Administrative Plan**

- The Board of Governors of the Institute plays an important role in the growth of the Institute through regular reviews of policy matters and initiating new practices by creating 5-year vision plans. Year-wise targets have been set through the 'NEP-2020 Action Plan' prepared by the institute and approved by the BoG in its meeting in July 2020.
- The Institute is administered on a day to day basis by the Director with other faculty members holding key administrative and academic responsibilities.
- The organizational chart and the roles and responsibilities of each functionary are clearly defined and also available on Institute website.
- The vision, mission, branding Statement and value framework is aligned with the perspective plan of the Institute, which is prepared with the contribution from BoG members and faculty members considering the SWOT analysis, vision plan of each department and feedback from stakeholders.
- Powers are given to Class Coordinators to ensure decentralization of all processes, monitoring records of attendance, student leaves, forwarding various documents & applications of students and final forwarding of examination form.
- For each initiative taken by the IQAC separate coordinators are appointed at the department level to help in administration of the different activities such as, OBE coordinator for monitoring activities related to attainment of learning levels, coordinator for remedial/bridge classes, web coordinator for departmental webpage management, Coordinator for departmental e-Newsletter, alumni coordinator for enhancing and managing alumni interaction and plagiarism administrator have clearly defined responsibilities.
- Due to the constant efforts of MOODLE coordinators, use of MOODLE for teaching-learning-evaluation has been institutionalized now.

#### **Other Committees**

- Internal Quality Assurance Committee
- Academic Council
- Development Cells
  - o Academic Development Cell
  - o Student Development Cell
- Board of Studies
- Research Committee
- Proctorial Board
- Internal Audit Committee



- Industry-Institute-Interaction Cell
- Library Advisory Committee
- Women Guidance, Grievances and Redressal Committee
- Girls Counselling Cell
- Students Grievances Cell
- Discipline Committee
- Central Purchase Committee
- Anti Ragging Committee as per guidelines of Honorable Supreme Court of India
- Internal Complaint Committee (ICC) for Women (Students & Staff) for Sexual Harassment at workplace
- Hostel Admission Committee

**Internal Quality Assurance Cell:**

To monitor standards of the higher educational institutions the University Grants Commission (UGC) has established the National Assessment and Accreditation Council (NAAC) as an autonomous body, under section 12(ccc) of its Act in September 1994. According to the 12th Plan guidelines of the UGC for Establishment the Internal Quality Assurance Cell (IQAC), is being constituted in the institute for building a mechanism to ensure a quality culture at the institutional level to develop proper structure and processes to meet the diverse needs of the stakeholders, for continuous improvement.

**Academic Council:**

Academic Council of the Institute is constituted according the UGC Guidelines January, 2018 consisting of following members:

1. The Principal (Chairman)
2. All the Heads of Department in the College.
3. Four teacher of the college representing different categories of teaching staff by rotation on the basis of seniority of service in the college.
4. Not less than four experts/academicians from outside the college representing such areas as Industry, commerce, Law, Education, Medicine, Engineering, Science etc, to be nominated by the Governing Body.
5. Three nominees of the university not less than Professors.
6. A faculty member nominated by the principal (Member Secretary)

The meeting of Academic Council of the Institute is conducted at least twice in a year.

**Development Cells:**

Following Development cells are taking efforts for the development of various Academic & Administrative activities of the Institute though continuous meetings &

efforts as per development plan of the Institute for ensuring Quality Enhancement, compliance of existing practices and developing new strategies:

- Academic Development Cell
- Student Development Cell

**Decentralization in working and grievance redressal mechanism**

- Dean (Academics)
- Dean (Students Welfare)
- Proctor
- Registrar
- Deputy Registrar
- Controller (Examination)
- Dy. Controller (Examination)
- Assistant Controller (Examination)
- Head of the Department
- Class Coordinator
- Mentor
- Chief Warden
- Sr. Wardens
- Wardens
- Section In-charge
- Chairperson Central Purchase Committee
- Finance Officer
- Other Coordinators/In-charges

**Fifteen Years Governance & Administration Plan**

The **Governance & Administration Plan for the next fifteen years** is prepared for quality assurance and efficient management to ensure the objectives of proposed deemed to be university for following categories:

- (a) Governance & Quality Assurance**
- (b) Technical & Internal Support System**
- (c) Students Support & Progression**
- (d) Engagement with Alumni, Industry & Society**
- (e) Internationalization**

### (i) Governance & Quality Assurance

Years	2023-2028	2028-2033	2033-2038	Status	Interventions
1.	Conducting regular Governing Body Meetings			04 Meetings/ Year	To be continued
2.	Organizing regular meetings of <b>Finance Committee</b>			04 Meetings/ Year	To be continued
3.	Organizing regular meetings of <b>Academic Council &amp; Board of Studies</b>			04 Meetings/ Year/ Committee	To be continued
4.	Assurance for Vision and Mission of the Institute			Review & Assurance	To be continued
5.	Effective Implementation and Monitoring of the Institutional Perspective & Development Plan			Six Monthly Review	To be continued
6.	Decentralization and participative management in working and grievance redressal mechanism			Decentralized management	Increase in IT support Mechanism
7.	Effective Management Information System			IT based Management Information System for selected modules	IT based Management Information System for all required modules
8.	Providing Administrative & Financial Support for Quality Improvement strategies for: <ul style="list-style-type: none"> <li><input type="checkbox"/> Curriculum Development</li> <li><input type="checkbox"/> Teaching &amp; learning</li> <li><input type="checkbox"/> Examination &amp; Evaluation</li> <li><input type="checkbox"/> Research &amp; Development</li> <li><input type="checkbox"/> Library, ICT and physical Infrastructure/Instrumentation</li> <li><input type="checkbox"/> Human Resource Management</li> <li><input type="checkbox"/> Industry Collaboration/Interaction</li> <li><input type="checkbox"/> Admission of students</li> </ul>			Providing as per proposal submitted by various departments & sections after evaluation of availability of funds	100% support

9.	Providing Administrative & Financial Support for Implementation of e-governance in areas of following operations: <input type="checkbox"/> Planning & Development <input type="checkbox"/> Administration <input type="checkbox"/> Finance & Accounts <input type="checkbox"/> Students admissions and support <input type="checkbox"/> Examination	Partial support	100% support
10.	Providing Financial support for the participation of faculty, staff in Conference/workshop & membership of professional bodies	Providing for participation  In conference/workshop	Provision for membership of professional bodies
11.	Providing Administrative & Financial Support for Conduction of professional development/Administrative training programmes for teaching & non-teaching staff	Providing for state level training programmes	Provision for national level programmes
12.	Providing Financial support for Participation of faculty in professional development programmes, orientation programme, refresher course, short term course, FDP	Providing for participation in India	Provision for International participation
13.	Faculty & Staff recruitment and hiring of various services required in administrative system	Inadequate	100% Adequacy to be achieved
14.	Implementing Welfare scheme for faculty, teaching & non-teaching staff, and students	Partial support	100%
15.	Use of Internal & External Financial audit	100%	100%
16.	Review & publication of service rules, policies and procedures, functions of various bodies, recruitment and promotional policies.	Regularly	Regularly
17.	Delegation of powers to Administrative Committees and Administrative Heads for	100%	100%

	taking administrative decisions		
18.	Delegation of Financial powers to the Heads of Departments and relevant in-charges	Partial	Up to Rs. 50,000/-
19.	Show Transparency and availability of correct/unambiguous information in public domain	100%	To be Continued with online portal mechanism
20.	Dissemination of the information about student, faculty and staff	100%	To be continued
21.	Effective Budget Allocation, Utilization, and Public Accounting at Institute level	100%	To be continued
22.	Availability of effective Security mechanism	Upto the appropriate level	IT based surveillance system
23.	Initiatives for Environment control and sustainability	Upto the appropriate level	100% Implementation
24.	Development of "Urban Green Zone" at institute of 30% land area	22% Available	Increase up to 30%
25.	<a href="#">Conducting meetings of IQAC (Internal Quality Assurance Cell) in every quarter of Academic Year</a>	01/Quarter (04 / Year)	To be continued
26.	Conducting regular meetings of Development cells of the Institute: <input type="checkbox"/> Academic Development Cell <input type="checkbox"/> Students Development Cell	02/Quarter (08 Meetings /year)	02/Quarter (08 Meetings /year)
27.	Administrative Audit in every Academic Year	01/Year	02/Year
28.	<a href="#">Academic Audit every Academic Year</a>	01/ Year	02/ Year
29.	IT Audit	00/Year	01/Year
30.	Environment Audit	01/Year	02/Year
31.	Laboratory Audit	01/Year	02/Year

32.	Infrastructure Audit	As per requirement	01/Year
33.	Overall development of Institute through <u>360 degree feedback system-Structured feedback system to collect and Analyse feedback collected from:-</u> <input type="checkbox"/> <a href="#">Students</a> <input type="checkbox"/> <a href="#">Faculty</a> <input type="checkbox"/> <a href="#">Employers</a> <input type="checkbox"/> <a href="#">Alumni</a> <input type="checkbox"/> <a href="#">Parents</a>	Feedback from: Students- 02/Sem. Faculty- 01/Sem. Employers- 01/Year Alumni- 01/Year Parents- 01/Year	Feedback from: Students- 02/Sem. Faculty- 01/Sem. Employers- 01/Year Alumni- 01/Year Parents- 01/Year
34.	NBA Accreditation of UG & PG Courses	ME-ISD is Accredited and EE Accreditation expired in Sep, 2018. *All the UG courses accredited twice in past	NBA Accreditation of all offered eligible Courses will be
35.	ISO Certification of Administrative Offices	NA	Every Year
36.	Participation in NIRF	applied	Every Year
37.	Participation in AISHE	Every Year	To be continued
38.	Participation in Swachh Campus Ranking	Every Year	To be continued
39.	Participation in Atal Ranking of Institutions on Innovation Achievements Framework (ARIIA)	Not applied	Every Year

40.	Participation in CII Survey	Every Year	To be continued
41.	NAAC Accreditation	Accredited with B++ Grade in Cycle-1	Cycle-2: NAAC Accreditation [Target A+]
42.	<a href="#">Submission of AQAR to NAAC</a>	<a href="#">Every Year</a>	To be continued

**(i) Technical & Internal Support System**

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Implementing Simplify systems and processes with the use of digitization & IMS system.			Up to 80%	100% implementation
2	Implementing Use of IT support for purchase, maintenance and administration.			Partial	Complete Support
3	Implement new recruitment/engagement rules to attract qualified staff at various levels.			As per Govt. Norms	In Addition R&D Support for deserving
4	Conducting annual satisfaction survey for services improvement.			Implemented	Increase in Parameters & Effectiveness
5	Organizing Orientation and training for Faculty, Technical & Administrative staff			Organising	Frequency will be increased
6	Development of online complaint systems.			Implemented	Fully Online
7	Organizing Orientation and mentorship programme for new faculty members.			Partially Implemented	Effective Conduction
8	Reducing in average processing times for various administrative issues/services.			Up to the level of 80%	100% Satisfaction
9	Development of online Tracking system for complaint redressal.			Partial	100%
10	Appointment of Technical manpower for program-specific curriculum			Implemented	Numbers will be increased
11	Maintenance and overall ambience in			National	International



	Laboratories.	Level	Level
12	Safety measures in laboratories	80%	100% as per standards

**(ii) Students Support & Progression**

Year	2023-2028	2028-2033	2033-2038	Status	Interventions
1	Providing scholarship and financial support from institute and other sources.			Limited	Numbers will be increased
2	Conducting Capability enhancement & Development scheme-Soft skill development, remedial coaching, language lab, bridge courses, yoga, Meditation, personal counselling and mentoring			100% implemented	100% Effectiveness
3	Guidance for competitive exams			Full Support	Increase in Participations
4	Organizing Induction & Orientation programs for all UG & PG students.			In-Place	Continued
5	Students grievances redressal system			In-Place	Minimum Grievances
6	Prevention of sexual harassment and ragging			Measures are in-place	Reducing complaints to Zero
7	Support for Career Counselling, Placement, Students progression for higher education & entrepreneurship			Up to 80%	100%
8	Increase in Students qualifying in state/national /international level examination (GATE/CAT/ GRE/TOFEL/Civil Services/State Govt. Services.			30% Approx.	60%
9	Organizing Sports and cultural activities/competitions			Yes	Increase in numbers
10	Enhancing Participation of students in cultural activities/competitions at national & international level			Adequate	Increase in Numbers

11	Involvement of Students representations in academic & administrative bodies/committees of the Institute	IQAC, T&P Cell, OBE, Anti-Ragging & Grievances Redressal committee, Woman Grievances, SWAYAM etc.	Participation will be increased
12	Providing support and counselling through Professional counsellor and medical practitioner	Full Support	100% Effective
13	Conducting annual student satisfaction survey	Adequate	Increased Parameters & Effectiveness
14	Providing Adequate facilities for PhD students & Special training for PhD students for Teaching and Entrepreneurship	Adequate	Industry connect
15	Promotion and support for learning by doing	At initial stage	100% Effective
16	Supervised internships for students in industry for longer duration	Implemented	More Industry will be connected
17	Providing Self – Learning facilities, materials for learning beyond syllabus, Webinars, Podcast, MOOCs etc.	Adequate	Increase Effectiveness via Self Developed e-learning materials
18	Conduction of Co-curricular and Extracurricular Activities through sports and cultural facilities, NCC, NSS and <a href="#">other clubs</a> , Annual students activities	Adequate	National & International Level
19	Opening Professional societies / chapters and organizing engineering events	12	22

(iii) **Engagement with Alumni, Industry & Society**

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Establishment of an “Alumni Development Cell” at the Institute to support alumni visits, activities and engagement.			Adequate	Effective Development
2	Development of alumni support system for continued learning and career improvement.			Partial	Full Development
3	Development of “Online Learning Modules” for Alumni for Lifelong learning.			Under Process	Full Development
4	Alumni interaction through: <ul style="list-style-type: none"> <li><input type="checkbox"/> Interaction between alumni and students,</li> <li><input type="checkbox"/> Involvement of alumni for students mentoring,</li> <li><input type="checkbox"/> Interaction between alumni and faculty,</li> <li><input type="checkbox"/> Alumni members in Departmental BOS for curriculum development,</li> <li><input type="checkbox"/> Alumni linkage for student placements and internships,</li> <li><input type="checkbox"/> Alumni representation in IIIC, IQAC and BOG of the Institute.</li> <li><input type="checkbox"/> Enhancing the innovation ecosystem</li> <li><input type="checkbox"/> Enhance alumni interaction during technical, cultural and sports activities organised by Institute.</li> </ul>			Partial	Effective Interaction
5	Engagement of alumni as adjunct faculty/visiting faculty.			Limited	Increase in Number
6	Conduction of courses/workshops/networking events for alumni.			Limited	Increase in Frequency
7	Development of online portal on Institute website to promote engagement between alumni, students and faculty members.			Portal Developed	Engagement through portal will be increased
8	Meetings/activities organized by Alumni Association			Adequate	Increase in Frequency
9	Development of “Extension & Outreach Cell” to			Through	Effective

	explore the support and services towards community.	Different Committees	Development
10	Effective use of “Business Development Centre” for Industry Linkage, start-up and incubation strengthening.	Established	Increase in Effectiveness
11	Motivating Joint Intellectual Property (IP) commercialisation with industries.	Partial	Full Support
12	Effective use of entrepreneurship development cell in the institute.	Adequate	Increase in Activities
13	Development of dedicated cell for research on societal problems.	Under Process	Development of Research Group
14	Enhancing interaction with industries, educational and research organizations in the region for versatile exposure to students and faculty.	Implemented	To be continued
15	Conduction of joint workshops/activities with govt. & NGO for students and local community.	Limited	Increase in Number
16	Conduction of joint research, workshop & Training programs with industries.	Limited	Increase in Number
17	Organising Public lectures/colloquia/competitions on global issues.	Limited	Increase in Number
18	Enhancing faculty engagement with industries.	Limited	Enhance through research & Development Activities
19	Conduction of training programs for Govt. staff/industry personals and other organizations.	Adequate	Increase in Activities
20	Conduction of students Competitions on city and state problems	Conducting through clubs & societies	Level & Quality Enhancement
21	Joint conduction of sport and cultural activities with other institutions and organizations.	Adequate	Increase in Activities

22	Establishment of MITS foundation to contribute to technical education and to address various social issues including development of financial resources	Under Progress	Effective Development
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(iv) **Internationalization**

Years	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Increase in the activities of International affairs cell to attract international students for admissions			Initiative Taken	Enhancement in Effectiveness
2	Enhance Institute information availability and publicity in target countries to attract students			Limited	Fully Developed System
3	Development of linkage with international universities			At Initial Stage	Adequate
4	Facilitate student exchange and joint-PhD programmes			--	Implementation of Student Exchange Program
5	Attract international faculty and students on short term engagement in conferences, GIAN courses & Conferences			Partial	Increase in Frequency
6	Attract international faculty on long term engagement in research and development activities			Limited	Effective Engagement
7	Increase percentage of International students (exchange students and regular students)			--	1%
8	Increase in admissions of International Students			--	25/per year
9	MOU with International University/Organization			Limited	Effective Collaboration for Micro level Activities

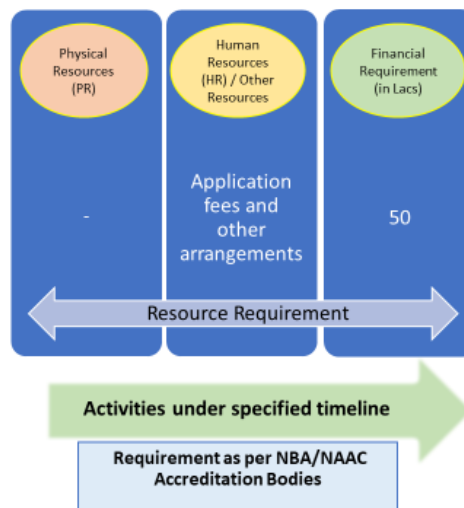
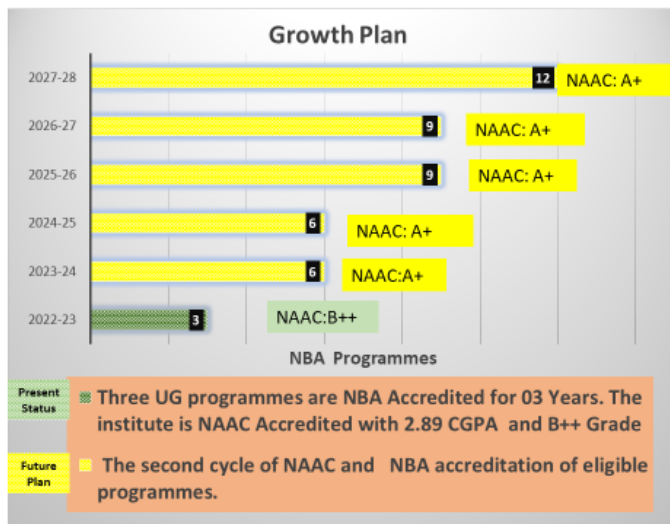
### Five Years Governance & Administration Plan

Parameters	2023-24	2024-25	2025-26	2026-27	2027-28
NIRF Ranking	Under 200	Under 100	Under 100	Under 100	Under 100
NAAC Accreditation	A+	A+	A+	A+	A+
NBA Accreditation	06 Programmes	08 Programmes	10 Programmes	12 Programmes	14 Programmes
Total MoU/Collaboration with National Institute	25	30	35	35	40
Total MoU/Collaboration with International University	04	06	08	10	10
MoU/Collaboration with Industries	25	30	35	35	40
Conversion of Institute in to Degree Granting Institute/Deemed to be university	Acquired	Maintained	Maintained	Maintained	Maintained
Number of International Students (Off-campus)	10	20	25	30	35
Institutional visibility and peer perception	70%	70%	75%	85%	90%

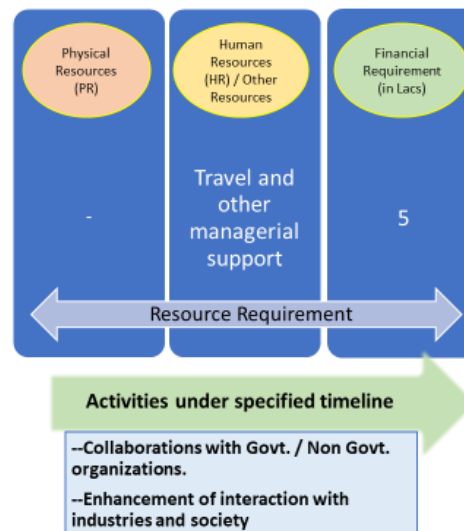
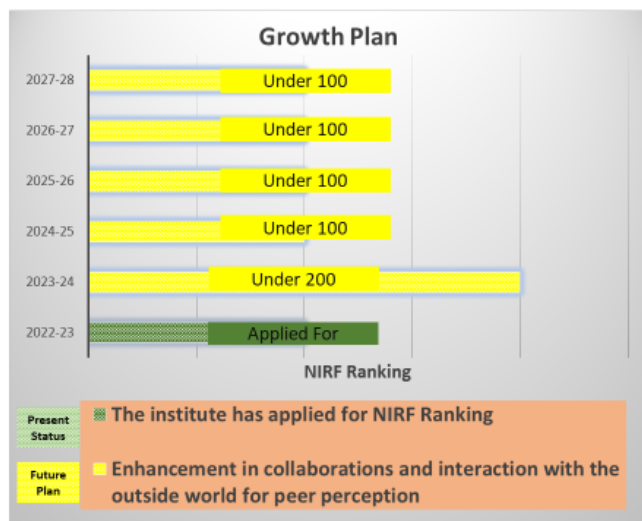
## Quality Assurance

- NBA/NAAC Accreditation
- NIRF Ranking

### Quality Assurance: **Accreditation**



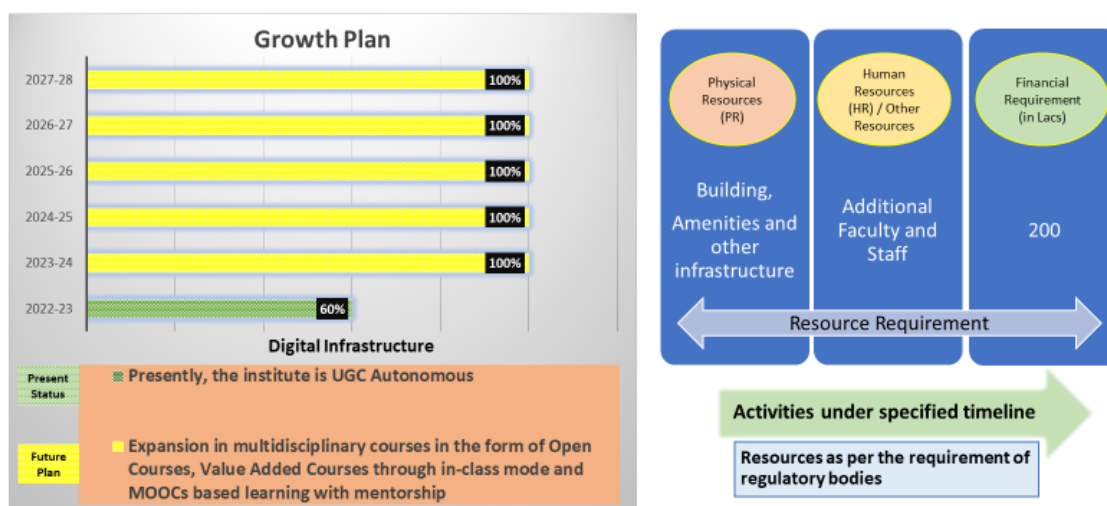
### Institute Recognition: **Ranking**





<p>To attain the status of “Teaching Intensive University” or “Research Intensive University” or “Autonomous Degree Granting College (AC)”</p>	<ul style="list-style-type: none"> <li>• Expansion in multidisciplinary education and research activities</li> <li>• Arrangement of resources as per the requirement of regulatory bodies</li> <li>• Arrangement of Building, Amenities and other infrastructure [as needed for attaining the status of Teaching Intensive University or Autonomous Degree Granting College (AC)]</li> <li>• Arrangement of faculty and staff as per norms</li> </ul>
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### Teaching Intensive University or Deemed to be University Status: Towards More Flexibility and Academic Autonomy



### (e) Faculty Recruitment & Human Resources Empowerment Plan

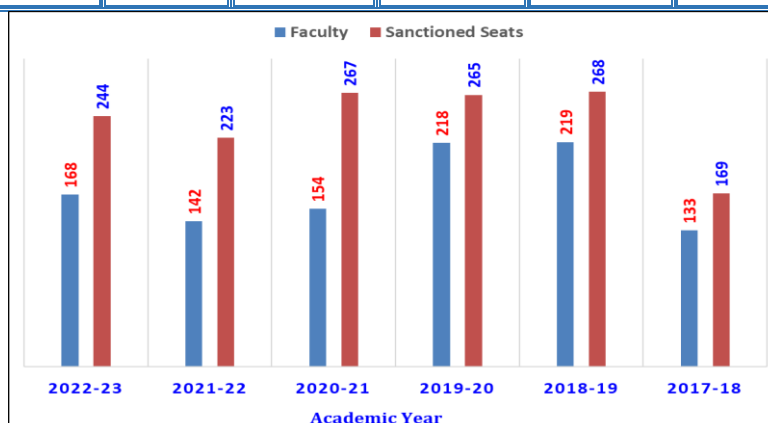
#### Teaching & Non-Teaching Staff

- Selection and or Promotion of faculty (Teaching posts): as per the MHRD/AICTE/CoA & MP Government rules and regulation (whichever applicable).
- Regular Staff: As per state government norms through Staff Selection Committee of the Institute constituted by Board of Governors from time to time.
- Non-Teaching posts will be as per the decision of Board of Governors from time to time and in force at the time of advertisement/recruitment. Minimum/ maximum age and educational qualifications: as per MHRD/AICTE/CoA/UGC & MP Government norms as applicable in force from time to time.

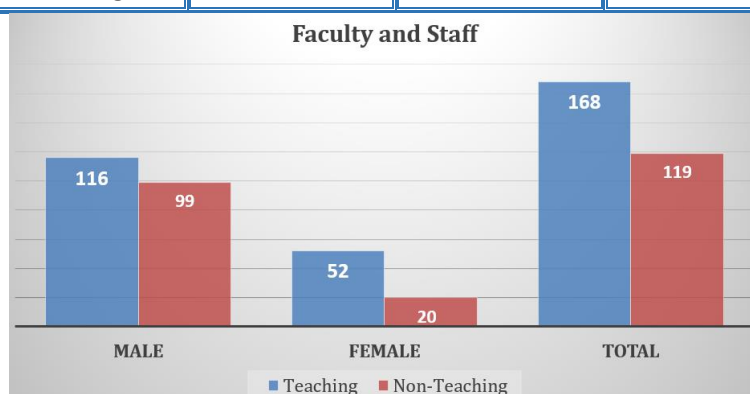
- Selection and or Promotion of faculty (Teaching posts): as per the MHRD/AICTE/CoA & MP Government rules and regulation.
- Promotion of class II, III & IV: as per M.P. Government rules adopted and approved by BoG.
- The General Service Rules/Conditions, code of conducts exists in the institute for the employees who are in service or will join the Institute in future.

The total number of faculty against the sanctioned positions for the last six years are as follows:

Academic Year	2022-23	2021-22	2020-21	2019-20	2018-19	2017-18
Number of Faculty	168	142	154	218	219	133
Sanctioned Seats	244	223	267	265	268	169



Faculty & Staff	Male	Female	Total
Teaching	116	52	168
Non-Teaching	99	20	119



### Fifteen Years Faculty Recruitment & Human Resources Empowerment Plan

Recruitment of Faculty will be done as per AICTE/COA/PCI requirement of cadre and faculty students ratio and to maintain the FSR as per Quality Assurance agencies like NBA/NAAC. The Effort will be made to appoint faculty in the field of specialization not available in the Institute/department. Overall target is to achieve Faculty Students Ratio below 1:20.

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Appointment of full time Quality teachers			FSR=1:25	FSR=1:20
2	Provision of Visiting /Adjunct/Emeritus faculty etc.			Implemented	To be continued
3	Off campus Faculty from Industry and academia			Implemented	To be continued
4	Recognition and appreciation for the faculty on receiving of fellowships, awards, recognition from Govt or recognized bodies at state/national/International level			Implemented	To be continued
5	Implementing Faculty Performance Appraisal and Development System			Implemented	To be continued
6	Providing API based promotion and rewards.			Implemented	Frequency Enhancement
7	Rewarding high-achieving faculty members once every year.			Implemented	To be continued
8	Promoting Faculty participation in Faculty development /training activities /STTPs			100% Support	To be continued
9	Providing Support to faculty members to obtain higher qualification			Implemented	To be continued
10	Recognition and support to faculty for participation in following activities: Sponsored Research/Product Development/Research laboratories/Instructional materials/Working models/charts/monograms etc./Consultancy (From Industry).			Implemented	To be continued
11	Providing Training support to technical &			100%	100%

	administrative staff for participation in staff development activities.		
12	Motivation & support to achieve higher qualification during service.	Adequate	Increase in Numbers

### Five Years Faculty Recruitment Plan

The following proposed number of high quality faculty members will be recruited in next five years through a transparent open selection process:

#### (i) Existing Programmes:

Faculty/Resource Person	2023-24	2024-25	2025-26	2026-27	2027-28
Total [Target FSR1:20]	253	253	253	253	253
Appointment of Faculty Members (Regular)					
(i) Professor	3	2	1	1	-
(ii) Associate Professor	7	5	2	2	
(iii) Assistant Professor	20	13	7	7	
Appointment of Faculty Members (Full-time 03 year contract)	40	20	10	5	5
Appointment of Adjunct Faculty, visiting Faculty and resource persons from Industry					
(i) Adjunct Faculty from Industry	3	3	3	1	1
(ii) Resource Persons from Academia	3	3	3	1	1
(iii) Off campus Faculty from Industry and academia	7	7	7	6	6

**(v) Proposed Programmes**

Faculty/Resource Person	2023-24	2024-25	2025-26	2026-27	2027-28
Total [Target FSR1:20]	-	18	51	88	117
Appointment of Faculty Members (Regular)					
(i) Professor	-	02	04	07	09
(ii) Associate Professor	-	03	08	14	19
(iii) Assistant Professor	-	09	25	42	57
Appointment of Faculty Members (Full-time 03 year contract)	-	02	04	07	09
Appointment of Adjunct Faculty, visiting Faculty and resource persons from Industry					
(i) Adjunct Faculty from Industry	-	01	02	04	04
(ii) Resource Persons from Academia	-	01	02	04	04
(iii) Off campus Faculty from Industry and academia	-	02	06	10	15

**(vi) Students Admission Plan**

**Intake & Reservation policy:** The seats allocated for admission in UG and PG program are as per the sanctioned intake approved by AICTE and guidelines issued by AICTE & Directorate of Technical Education, Madhya Pradesh:

- The State Government/ UT/ Directorate of Technical Education/ Directorate of Medical Education shall ensure that 10% of reservation for Economically Weaker Section (EWS) as per the reservation policy for admission, operational from the Academic year 2019-20 without affecting the reservation percentages of SC/ ST/ OBC/ General.
- Tuition Fee Waiver (TFW) Scheme
  - d) Admission Procedure • Under this Scheme, up to a maximum of 5% of “Approved Intake” per Course shall be available for this admission.
- Supernumerary seats for the Union Territories J&K and Ladakh under Prime Minister’s Special Scholarship Scheme (PMSSS)
  - b) 2 seats per Course shall be available for these admission with the maximum of 10 seats per Institution. These seats shall be supernumerary in nature and shall be available to such Course(s) in an Institution.

- CSAB-NEUT: CSAB North Eastern States and Some of Union Territories (NEUT)

**Total Sanctioned Seats are as follows:** Sanctioned Seats as per AICTE Approval letter+ EWS Seats +TFW Seats +PMSSS/ CSAB-NEUT Seats

As per the guidelines issued by Directorate of Technical Education, Madhya Pradesh for admission in UG and PG program in Autonomous and Govt. Aided institutes, 16%, 20% and 14% of the MP domicile candidates (90% of total seats) are reserved for candidates belonging to Scheduled Caste (SC), Scheduled Tribe (ST) and Other Backward Classes (excluding Creamy Layer) OBC categories respectively.

In addition to above, 3% seats in each category viz - UR, SC, ST and OBC shall be reserved for Physically handicapped candidates (with disability percentage of 40 or above and satisfying MP domicile requirements). This reservation is compartmentalized horizontal reservation and vacant seats in this category is filled by converting such seats into Open Seats of the NIL (X) category.

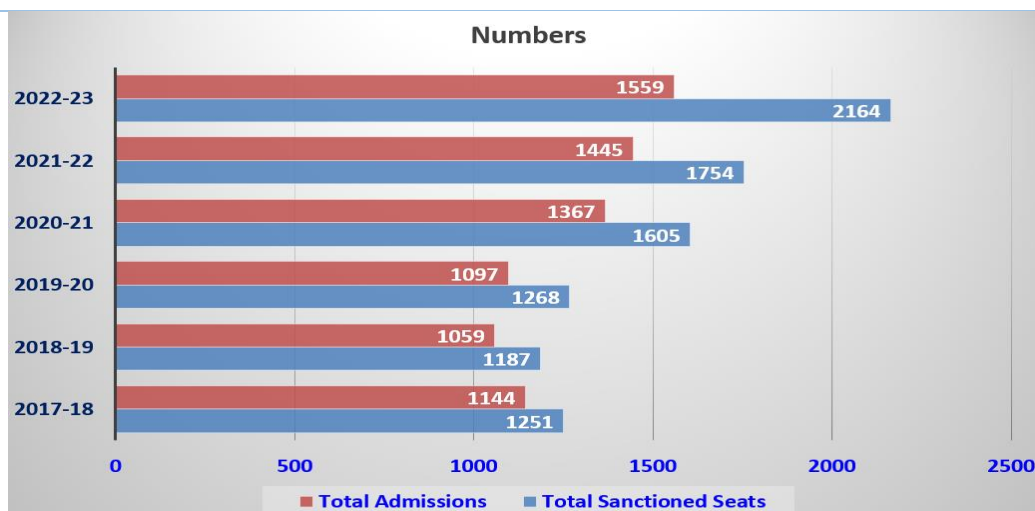
Availability of Seats: 90% Seats for MP domicile candidates 5% All India Seats 5% NRI Seats (All India Seats & NRI seats if not filled then converted into Seats for MP domicile candidates)

#### Admissions:

- As per Directorate of Technical Education, Madhya Pradesh/State Government norms, through Joint Entrance Exam (JEE)-Mains-I II for B.Tech./B.Arch. NATA for B.Arch.
- As per intake approved by AICTE, the admission for UG/PG students is online through state level counselling managed by the Directorate of Technical Education (DTE) of the state.
- Students of other states are admitted through Central Seat Allocation Board (CSAB) of Government of India.
- Foreign students are admitted through Ministry of External Affairs (GOI) Quota.

**The total admissions against the sanctioned seats/intake for the last six years is as follows:**

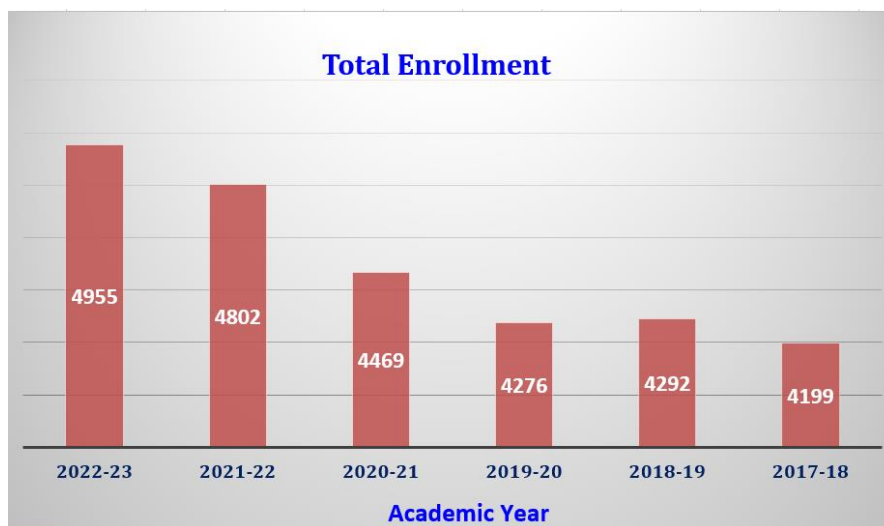
Academic Year	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Total Sanctioned Seats/Intake	1251	1187	1268	1605	1754	2164
Total Admissions	1144	1059	1097	1367	1445	1559



### Students

The total number of students enrolled during last six years are as follows:

2022-23	2021-22	2020-21	2019-20	2018-19	2017-18
4955	4802	4469	4276	4292	4199

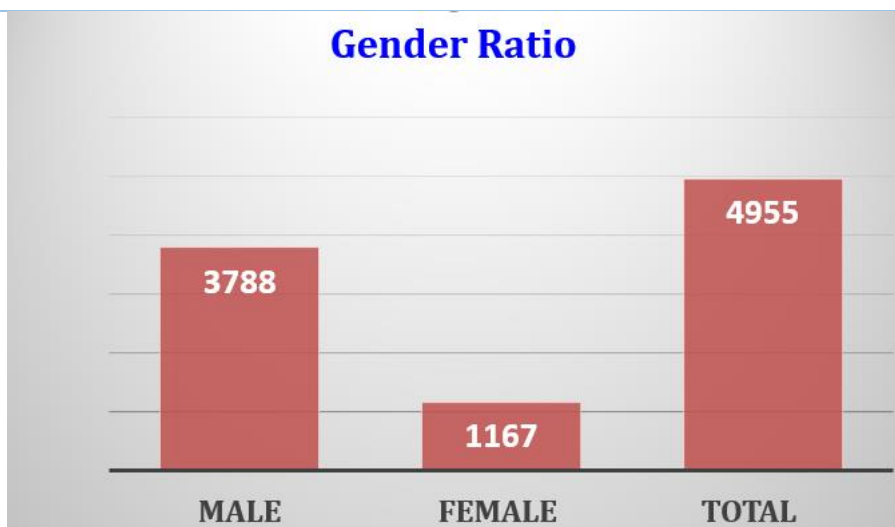


Number of Students on roll by gender

- **Male**            **3788**
- **Female**        **1167**
- **Transgender**   **0**
- **Total**           **4955**



### Gender Ratio



The admissions for Certificate, Diploma, Degree (UG & PG) and Ph.D. programmes for national and foreign students will be made purely on merit basis. The merit position of the candidate for admission will be based on the norms prescribed by the academic council/Executive Council of Institute. However, their eligibility for admission will be as per requirement of AICTE/UGC/other regulatory agency.

The Institute will offer Certificate, Diploma, Degree (UG & PG) and Ph.D. programmes as per NEP guidelines of off-campus & online education.

**Academic Bank of Credits** will be utilized to enable multiple entry-multiple exit for students to complete their degrees as per their time preferences, providing mobility across various disciplines and HEIs for Degree/ Diploma /Certificate programs programme. ABC will ensure the opening, closure, and validation of Academic Bank of Accounts, verification, accumulation, and transfer or redemption for students. ABC facilitate students to choose their own learning path to attain a degree /Diploma /Certificates, working on the principle of multiple entry-multiple exit as well as anytime, any-where, and any-level learning.

**Degree with Research at UG Level:** Provision will be available to undertake Analytical/Research/Knowledge based major project in the last semester of study to promote research in the degree level Institutions.

The proposed admissions in various Certificate, Diploma, Degree (UG & PG) and Ph.D. programmes is shown below:

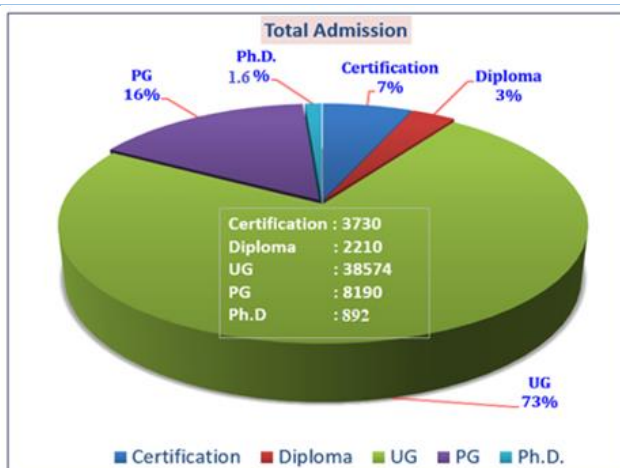
Programmes	Certificate						Diploma					
	B.L.	I	II	III	IV	V	B.L.	I	II	III	IV	
Engineering & Technology	0	200	200	280	340	420	0	-	60	60	120	120
Architecture & Planning	0	20	20	20	20	20	0	-	-	-	-	-

Master in Computer Application	0	20	20	20	20	20	0	-	-	-	-	-
Management	0	20	20	40	40	40	0	-	-	-	-	-
Pharmacy	0	-	20	20	20	20	0	-	30	30	30	30
Sciences	0	-	-	80	100	120	0	-	-	-	-	-
<b>Total</b>	<b>0</b>	<b>260</b>	<b>280</b>	<b>460</b>	<b>540</b>	<b>640</b>	<b>0</b>	<b>0</b>	<b>90</b>	<b>120</b>	<b>150</b>	<b>150</b>

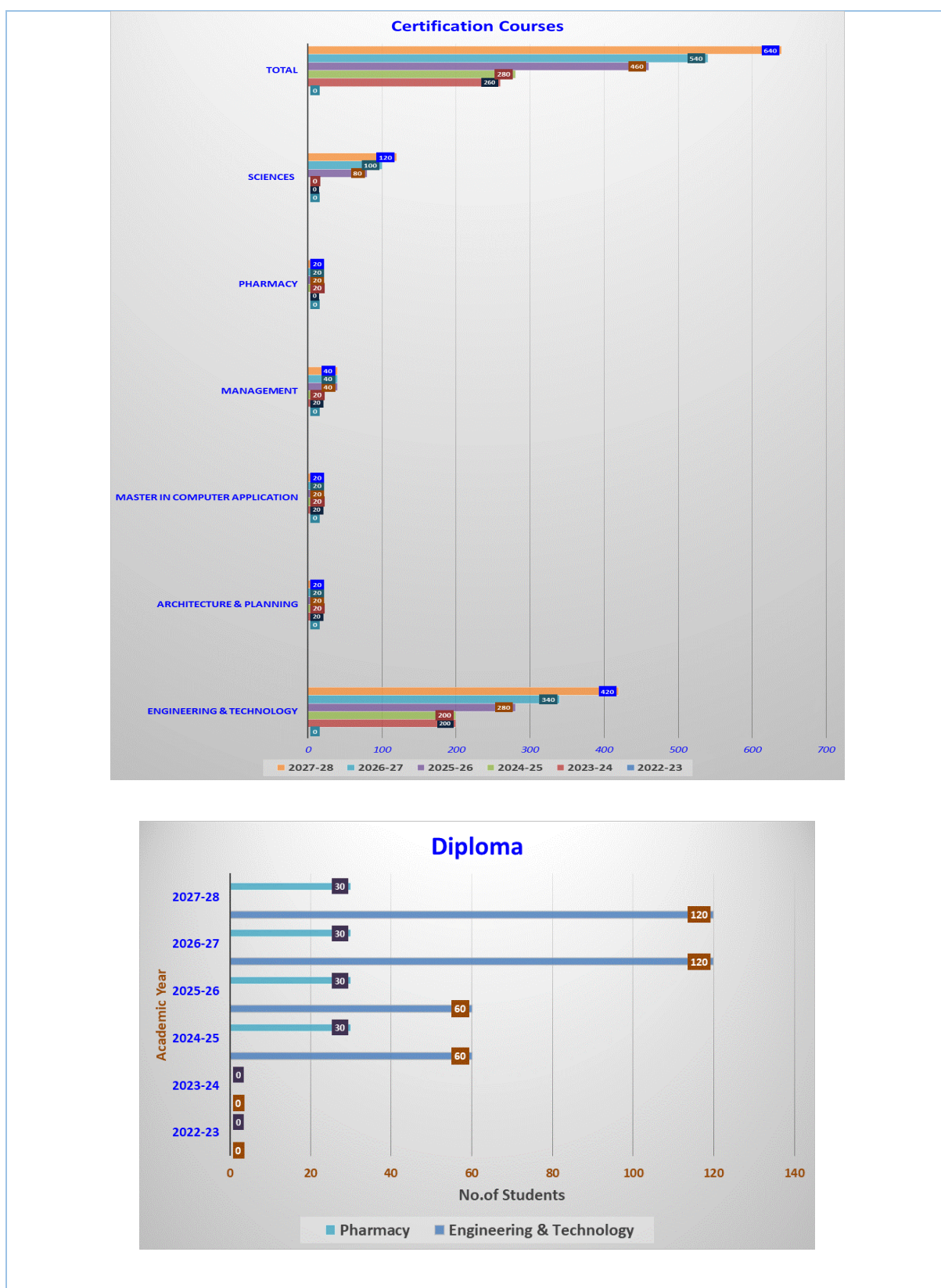
Programmes	UG						PG					
	B.L.#	I	II	III	IV	V	B.L.	I	II	III	IV	V
Engineering & Technology	1397	1683	1761	1839	1917	1995	9	60	90	100	181	181
Architecture & Planning	22	40	40	40	60	60	8	18	18	18	18	18
Master in Computer Application	-	-	-	-	-	-	78	78	78	78	78	78
Management	-	-	-	-	-	-	45	60	120	120	120	120
Pharmacy	0	-	60	60	60	60	0	-	60	60	60	60
Sciences	0	-	60	120	150	150	0	-	60	120	150	150
<b>Total</b>	<b>1419</b>	<b>1723</b>	<b>1921</b>	<b>2059</b>	<b>2187</b>	<b>2265</b>	<b>140</b>	<b>216</b>	<b>426</b>	<b>496</b>	<b>607</b>	<b>607</b>

Programmes	Ph.D					
	B.L.	I	II	III	IV	V
Engineering & Technology	6	10	20	30	30	30
Architecture & Planning	2	2	2	2	2	2
Master in Computer Application	-	2	2	2	2	2
Management	-	2	2	2	2	2
Pharmacy	-	-	1	2	2	2
Sciences	-	-	2	5	10	10
<b>Total</b>	<b>8</b>	<b>16</b>	<b>29</b>	<b>43</b>	<b>48</b>	<b>48</b>

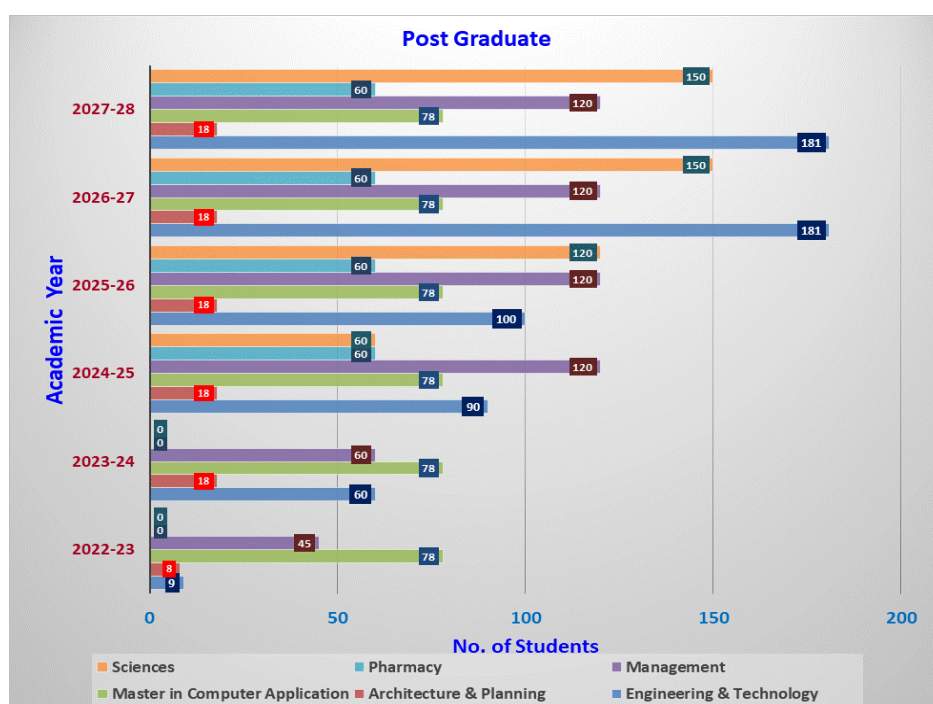
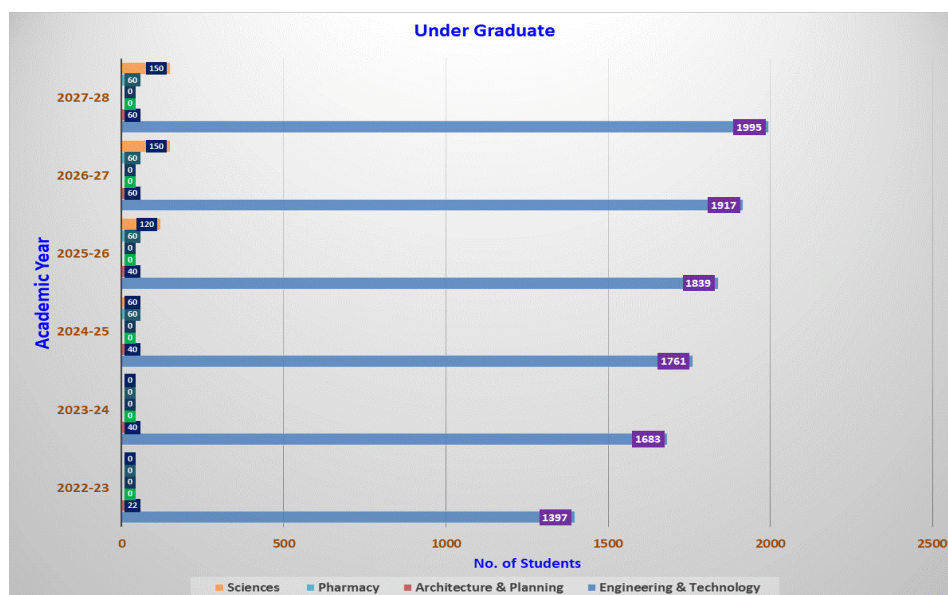
B.L. : Baseline: 2022-23	I: 2023-24	II: 2024-25	III: 2025-26	IV: 2026-27	V: 2027-28
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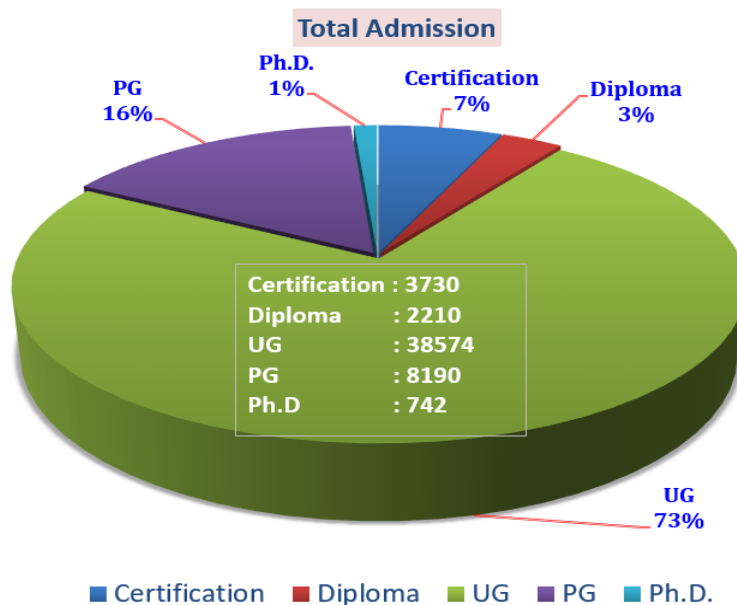
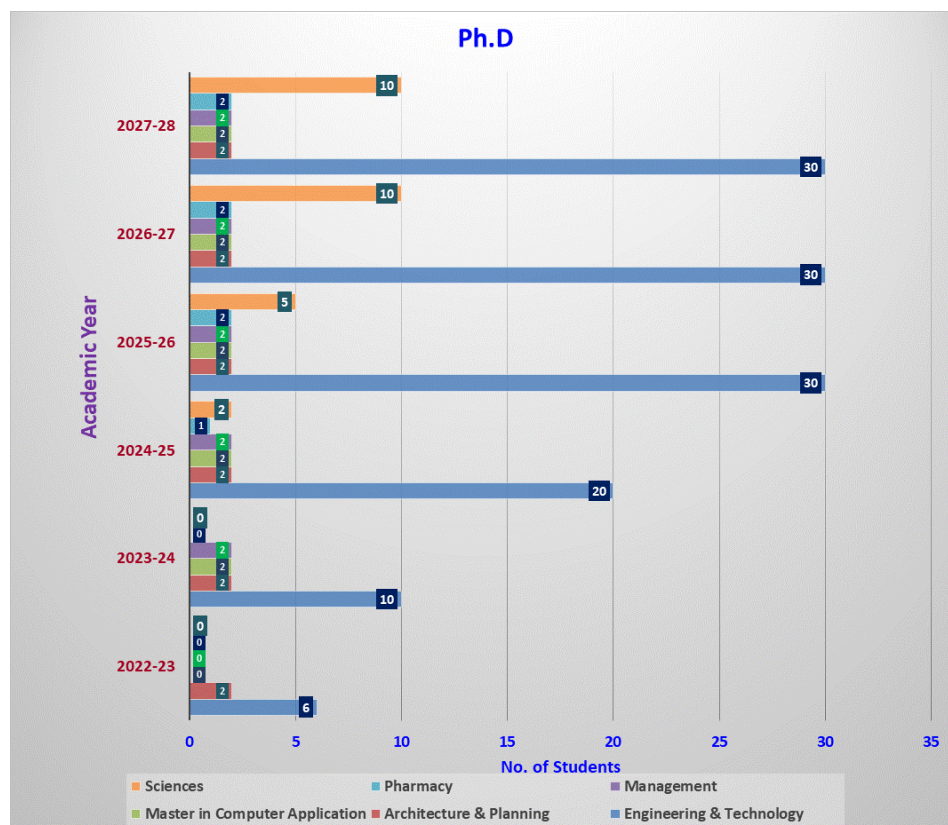


Programmes	Total Admissions		
	2023-28	2028-33	2033-38
<b>Certificate</b>	1030	1200	1500
<b>Diploma</b>	510	700	1000
<b>UG</b>	11574	12000	15000
<b>PG</b>	2490	2700	3000
<b>PH.D.</b>	192	300	400









## (vii) Proposed New Programmes

### Engineering & Technology

#### UG Courses

- Computer Science and Business Systems
- Computer Science and Engineering (Artificial Intelligence)
- Computer Science and Engineering (Data Science)
- Robotics and Artificial Intelligence
- Airline Management

#### PG Courses

- Computer Science Engineering (Big Data Analytics)
- Airport Management
- Aviation Management
- Business Analytics
- Business and Corporate Law
- Corporate Communication and Event Management
- Cyber Law
- E- Business Management
- Fintech
- Foreign Trade
- Healthcare Management
- Internal Business
- Project Management
- Innovation, Entrepreneurship and Venture Development (IEV)
- Information Technology and Systems Management
- Heritage Management

#### D.VoC and B.VoC

##### Engineering and Technology (Emerging Technologies Specialization)

- 3D printing
- AI & Robotics
- Architectural Drafting and Basic 3D design
- Artificial Intelligence, Machine Learning & IoT
- Artificial Intelligence and Data Science
- Big Data Analytics
- Block Chain
- Virtual Reality and Augmented Reality
- Cyber Security and Digital Forensics
- Industrial Automation and Robotics
- Internet of Things

#### Management

##### Certificate Courses

- Banking, Financial Services and Insurance (BFSI) Management
- Broadcasting and Journalism
- Digital Journalism and Multimedia Applications
- Entrepreneurship Development
- Financial Management
- Fire and Safety Management
- Fire Technology and Industrial Safety Management
- Innovative Waste Management
- Inventory Management Service and Production Planning
- Logistics Management
- Management-BPM and Analytics
- Management-Financial Services
- Operational Research and Risk Management
- Power Distribution Management
- Public Services
- Renewable Energy Management
- Retail Management
- Water, Sanitation and Waste Management
- Paramedical and Health Care
- Tourism and Service Industry
- Travel and Tourism

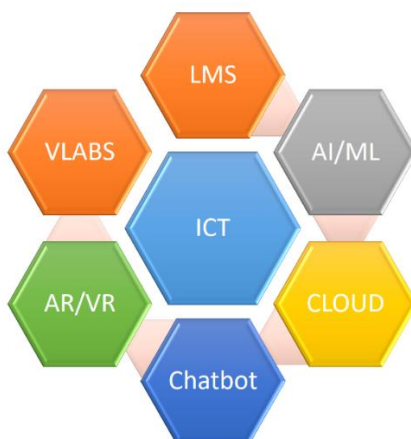


### Proposed Diploma & Certification Courses

- |  |  |   |
|--|--|---|
| o Automobile Servicing                         | o Mobile Communication                                 | o Welding Technology                            |
| o Biogas Technologies                          | o Piping Technology                                    | o Wind Power Technologies                       |
| o Building Materials and Construction Skills   | o Printing Technology                                  | o Animation and Graphic Design                  |
| o CNC Programming and Operation                | o Production Technology                                | o Computer Hardware                             |
| o Construction Technology                      | o Production - Tool and Die Manufacturing              | o Computer Networking                           |
| o Design and Development of Electronic Devices | o Production-Press Tool and Die Maintenance & Stamping | o Computer-Aided Design                         |
| o Digital Manufacturing                        | o Refrigeration and Air-Conditioning Skills            | o Data and Web Analytics                        |
| o Electrical Skills                            | o Repair and Maintenance of Electric Vehicles          | o Digital Media and Animation                   |
| o Electronics Manufacturing Services           | o Rubber Technology                                    | o Forensic Science and Data Analytics           |
| o Hospital Instrumentation and Management      | o Small Hydropower Technologies                        | o Geoinformatics                                |
| o Industrial Electronics                       | o Solar and Renewable Energy                           | o Graphics and Multimedia                       |
| o Industrial Microbiology                      | o Solar PV Systems: Operation and maintenance          | o Hardware and Networking                       |
| o Industrial Tool Manufacturing (ITM)          | o Solar Technology                                     | o Information Technology                        |
| o Marine Technologies                          | o Solar Thermal Systems: Operation and Management      | o Software Development                          |
| o Manufacturing Skills                         | o Technology Aided Chip Design                         | o Web Design and Mobile Application Development |
| o Mechanical Manufacturing                     | o Telecom and Electronics Skill                        | o Web Designing, Animation & Graphics           |
| o Mechatronics                                 | o Telecommunications                                   | o Catering Technology and Hotel Management      |
| o Metal Construction and Fabrication           | o Textile Manufacturing                                | o Dairy Technology                              |
|  | o Tractor Repair and Servicing                         | o Short Film and Video Production               |
|  | o Unmanned Aerial Vehicles                             | o Office Automation Computer Applications       |
|  | o VLSI Design Skills                                   | o Practical Accounting and Tax (DPATP) & Tally  |

### (viii) Campus Information & Communication Technology Plan

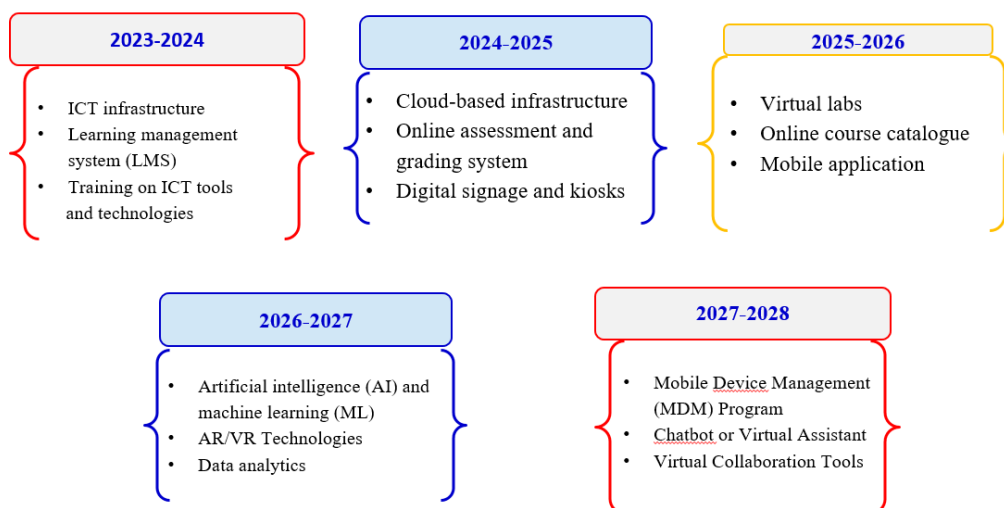
In today's digital age, Information and Communication Technology (ICT) has become a necessity for higher education institutions to effectively prepare students for the rapidly changing world. ICT enables institutes to offer a more modern and engaging learning experience, facilitate collaboration and communication among students and faculty, streamline administrative processes, and provide students with the technical skills required for success in their future careers. The increasing demand for ICT skills in the job market, coupled with the need for engineering colleges to keep pace with technological advancements, makes it imperative for institutions to incorporate ICT into their programs and operations. Without ICT, engineering colleges risk falling behind their peers and failing to adequately prepare their students for the challenges of the future.



**Scope:** There are some of the areas where ICT can be applied in the institute:

1. **Learning Management Systems:** to develop and manage learning management systems which can provide students with access to course materials, assignments, and assessments. These systems can also facilitate communication between students and faculty, allowing for more effective collaboration and feedback.
2. **Virtual Labs and Simulations:** the development of virtual labs and simulations that provide students with hands-on experience in a safe and controlled environment. This can be particularly useful in areas like engineering design and analysis, where physical prototypes can be expensive and time-consuming to create.
3. **Computer-Aided Design and Manufacturing:** to develop and use computer-aided design (CAD) software, which enables students to create, modify, and analyze 3D models of products and systems. Similarly, computer-aided manufacturing (CAM) can be used to control manufacturing processes, such as CNC machining and 3D printing.
4. **Cyber security:** As technology becomes increasingly integrated into every aspect of our lives, cyber security is becoming more critical. ICT can be used to develop and teach cyber security skills to students, enabling them to identify and mitigate security threats in systems and networks.
5. **Data Analytics:** The vast amounts of data generated in the engineering field can be challenging to manage and analyze. ICT can be used to develop and teach data analytics skills, enabling students to extract insights from large data sets and make data-driven decisions.

### Five year Plan (2023-2028)



### **2023-2024**

- In the first year, the focus will be on developing a strong foundation for the university's ICT infrastructure. This includes upgrading the network infrastructure, installing high-speed internet connectivity.
- Implement a comprehensive learning management system (LMS) that enables students to access course materials, assignments, assessments, and collaborative tools: To enable effective distance learning, a robust Learning Management System (LMS) will be implemented. This system will allow students to access course materials, assignments, assessments, and collaborative tools. Faculty members will be trained to effectively use the LMS and create engaging course materials.
- Develop and implement a program to train faculty and staff on the use of ICT tools and technologies: To ensure faculty and staff can use the new technologies and systems, a training program will be implemented. This program will include training on the use of the LMS, cloud-based computing, cybersecurity measures, and other technologies.

### **2024-2025**

1. Implement a cloud-based infrastructure that supports greater scalability and flexibility: This involves adopting a cloud-based computing system, which allows the college to store, access, and manage its data and applications over the internet. The advantages of this approach include greater scalability, flexibility, and cost savings.
2. Develop an online assessment and grading system that provides students with real-time feedback and progress tracking: This involves creating an online platform for student assessment and grading, which would allow students to receive feedback and track their progress in real-time.
3. Implement digital signage and kiosks around campus that provide real-time information on events, schedules, and university news: This involves installing digital displays and kiosks throughout the campus to provide students, faculty, and staff with real-time information on events, schedules, and university news. These displays and kiosks can be interactive, allowing users to navigate and explore campus resources, and can also be used to provide emergency notifications and alerts.

### **2025-2026**

1. Expand the use of virtual labs and simulations to provide students with hands-on experience in engineering and science courses: This involves incorporating more virtual labs and simulations into the curriculum to provide students with hands-on experience in engineering and science courses.
2. Develop and launch an online course catalog that enables students to browse and register for courses online: This involves creating an online platform that enables students to browse and register for courses online. The online course catalog would provide students with up-to-date information on course offerings, schedules, prerequisites, and other relevant information.
3. Develop a mobile application that enables students to access course materials, schedules, and other university resources from their mobile devices: This involves developing a mobile application that enables students to access course materials, schedules, and other university resources from their mobile devices.

### **2026-2027**

1. Explore the use of artificial intelligence (AI) and machine learning (ML) to improve teaching and learning outcomes: This involves investigating the use of AI and ML technologies to improve teaching and learning outcomes in engineering and science courses.
2. Expand the use of augmented and virtual reality (AR/VR) technologies in engineering and science courses: This involves expanding the use of AR/VR technologies in engineering and science courses to provide students with immersive and interactive learning experiences.
3. Implement a data analytics program that enables faculty and students to extract insights from large data sets: This involves implementing a data analytics program that enables faculty and students to extract insights from large data sets generated by research projects, experiments, and other academic activities.

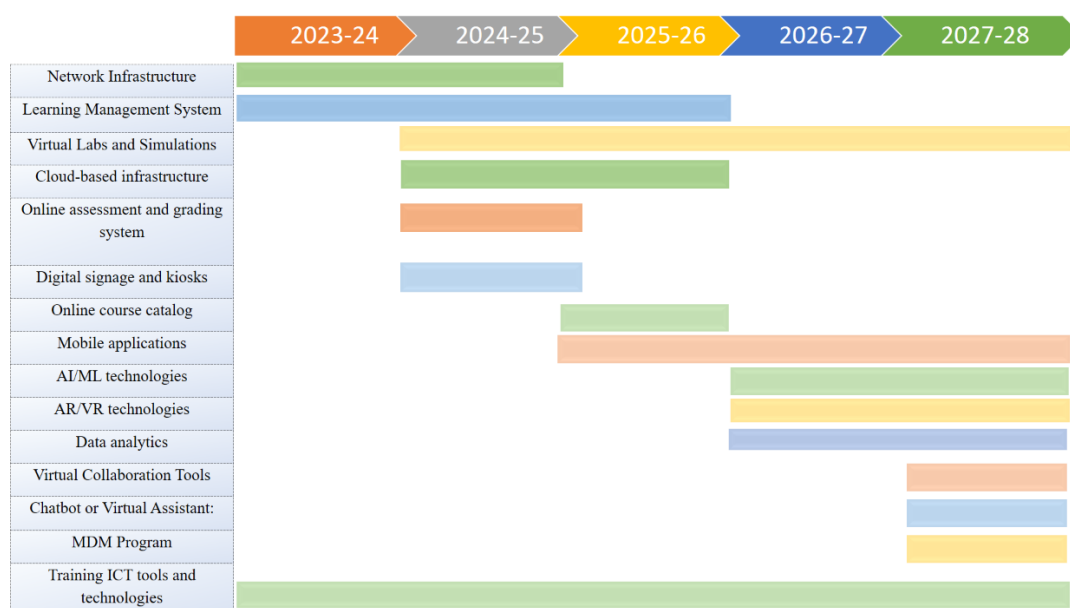
### **2027-2028**

1. Mobile Device Management (MDM) Program: The first component of the plan is to develop an MDM program that enables the university to securely manage and distribute mobile devices to students and staff. With the increasing reliance on mobile devices for learning and work, it is important to have a program that can ensure the security and privacy of data on these devices. The MDM program will

enable the institute to remotely manage and update mobile devices, enforce security policies, and track device usage.

2. **Chatbot or Virtual Assistant:** The second component of the plan is to implement a chatbot or virtual assistant that can answer student inquiries and provide assistance 24/7. With the increasing demand for online learning and support, a chatbot or virtual assistant can provide immediate assistance to students, without the need for human intervention. The chatbot or virtual assistant will be able to answer common questions, provide guidance on assignments and assessments, and direct students to appropriate resources.
3. **Virtual Collaboration Tools:** The third component of the plan is to expand the use of virtual collaboration tools, such as video conferencing and virtual whiteboards, to enable remote collaboration among students and faculty members across different locations and time zones. With the increasing popularity of remote learning and working, it is important to have tools that can facilitate collaboration and communication among team members.

### ICT Plan 2023-2028



### ICT Plan for 2028-2033

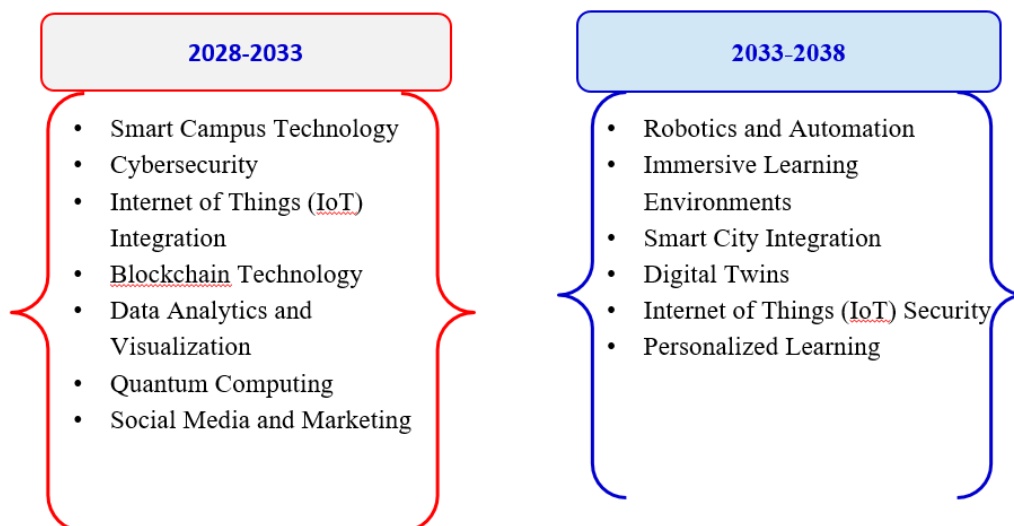
- **Smart Campus Technology:** Implement a smart campus technology system that will provide real-time data on energy consumption, occupancy rates, and other important information. This technology will enable the university to optimize its resources and improve sustainability.

- **Cybersecurity Measures:** Strengthen cyber security measures by implementing advanced security protocols and technologies to protect the university's sensitive data from cyber threats.
- **Internet of Things (IoT) Integration:** Integrate IoT devices into the university's infrastructure to enable real-time monitoring and control of campus facilities, such as lighting, temperature, and air quality.
- **Blockchain Technology:** Explore the use of blockchain technology to create a secure and decentralized system for managing student records and academic credentials.
- **Data Analytics and Visualization:** Implement a data analytics and visualization program to enable faculty and students to extract insights from large data sets and make data-driven decisions.
- **Quantum Computing:** Explore the potential of quantum computing in solving complex engineering problems and develop a plan for integrating this technology into the university's infrastructure.
- **Social Media and Marketing:** Develop a comprehensive social media and marketing strategy to promote the university's brand and attract top talent to its engineering programs.

### **ICT Plan for 2033-2038**

- **Quantum Computing:** Fully integrate quantum computing into the university's infrastructure and curriculum, allowing students and faculty members to explore and solve complex engineering problems using this cutting-edge technology.
- **Robotics and Automation:** Expand the use of robotics and automation in engineering courses, providing students with hands-on experience in designing, building, and programming robots and automated systems.
- **Immersive Learning Environments:** Develop immersive learning environments using technologies such as virtual reality, augmented reality, and mixed reality to provide students with realistic and interactive simulations that enhance their learning experience.

- **Smart City Integration:** Collaborate with local municipalities to integrate the university's infrastructure with the smart city technologies, creating a more connected and sustainable community.
- **Digital Twins:** Develop a digital twin of the university's infrastructure, allowing for real-time monitoring and optimization of campus facilities, and providing students with a virtual model for experimentation and learning.
- **Internet of Things (IoT) Security:** Enhance IoT security protocols to ensure the safety and privacy of the university's data, devices, and infrastructure.
- **Personalized Learning:** Develop a personalized learning system that uses artificial intelligence and machine learning to tailor course content and assessments to individual students' learning needs and preferences



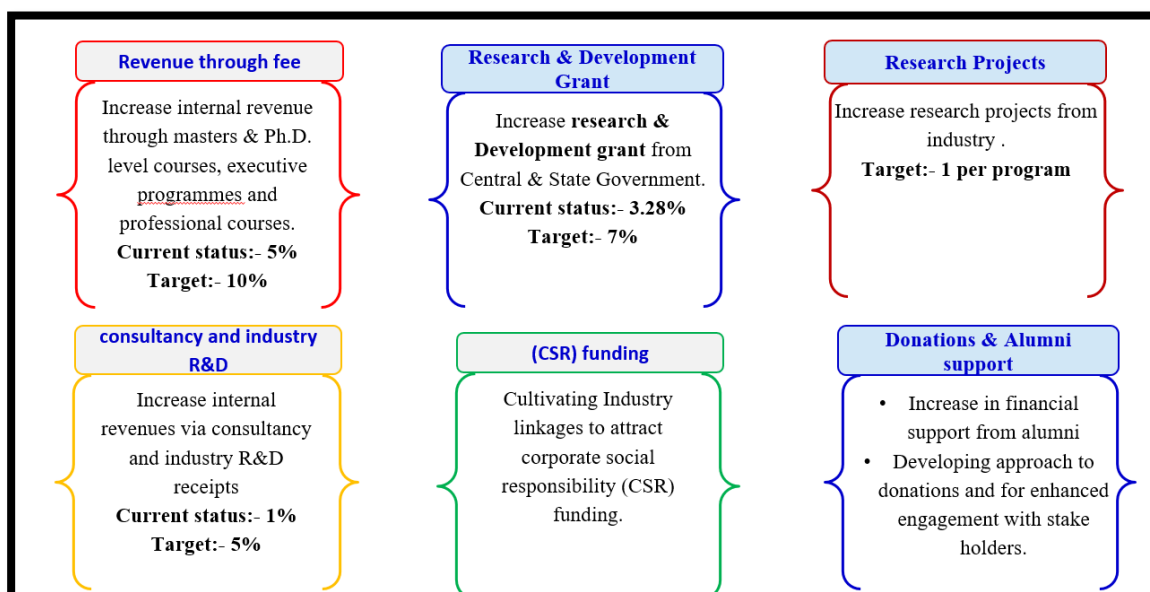
### (ix) Finance Plan

The Finance plan is prepared for next fifteen year based on proposed academics & Administrative activities, further the income and expenditure plan for next five years is prepared:

Year	2023-2028	2028-2033	2033-2038	Status	Intervention
1	Increase internal revenue through masters & Ph.D. level courses, executive programmes and professional courses.			5%	10%



2	Increase research & Development grant from Central & State Government.	3.28%	7%
3	Increase research projects from industry	Limited	1 Per Program
4	Increase internal revenues via consultancy and industry R&D receipts	1%	5%
5	Cultivating Industry linkages to attract corporate social responsibility (CSR) funding.	Initiative Taken	Development of Effective System
6	Increase in financial support from alumni	Initiative taken	Development of Effective System
7	Developing approach to donations and for enhanced engagement with stake holders.	Initiative Taken	Development of Effective System

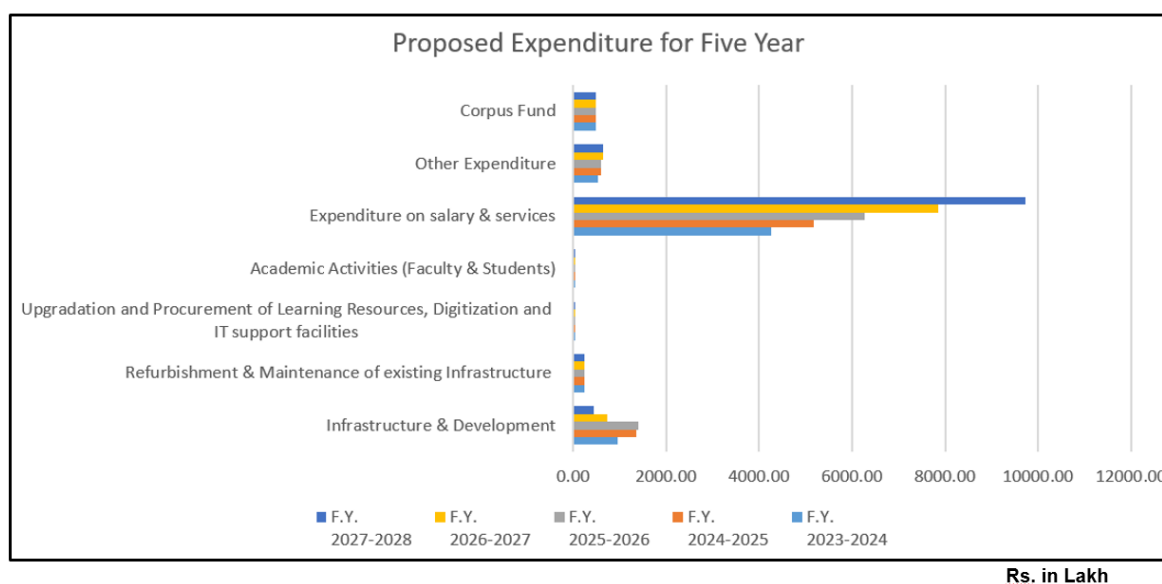


## Five Year Finance Plan

### (i) Proposed Expenditure

	F.Y. 2023-2024	F.Y. 2024-2025	F.Y. 2025-2026	F.Y. 2026-2027	F.Y. 2027-2028
Infrastructure & Development	955.00	1360.00	1402.00	730.00	440.00
Refurbishment & Maintenance of existing Infrastructure	237.00	240.00	245.00	250.00	250.00
Upgradation and Procurement of Learning Resources, Digitization and IT support facilities	50.00	50.00	50.00	50.00	50.00
Academic Activities (Faculty & Students)	50.00	50.00	50.00	50.00	50.00
Expenditure on salary & services	4260.00	5172.00	6276.00	7854.00	9720.00
Other Expenditure	543.00	600.00	600.00	650.00	650.00
<b>Total</b>	<b>6095.00</b>	<b>7472.00</b>	<b>8623.00</b>	<b>9584.00</b>	<b>11160.00</b>
Corpus Fund	500.00	500.00	500.00	500.00	500.00
<b>Total Expenditure</b>	<b>6595.00</b>	<b>7972.00</b>	<b>9123.00</b>	<b>10084.00</b>	<b>11660.00</b>
Surplus/deficit	271.00	578.00	1325.00	2127.00	1740.00

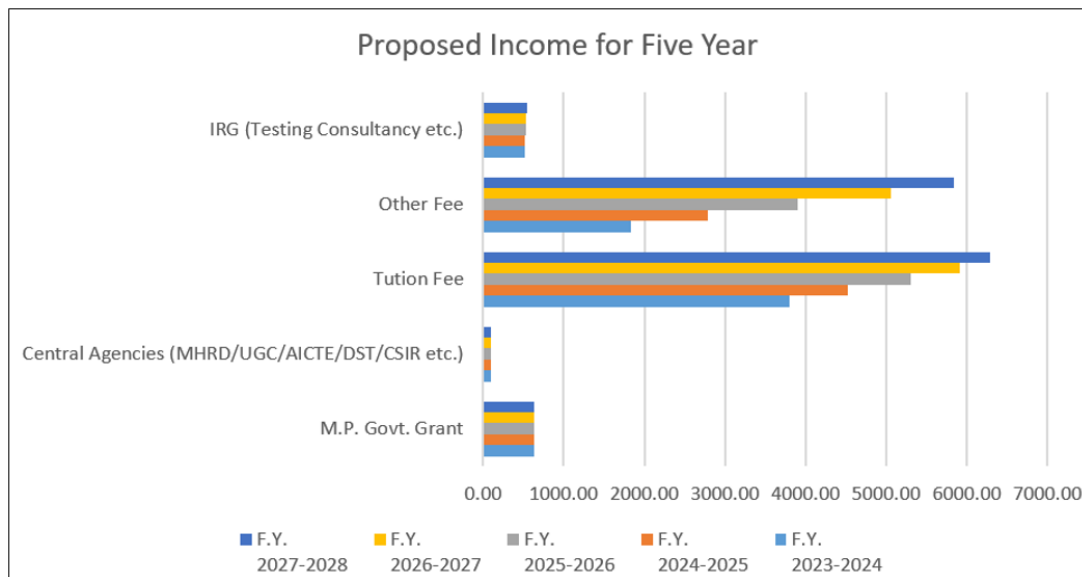
Rs. in Lakh



**(x) Proposed Income**

Income	F.Y. 2023-2024	F.Y. 2024-2025	F.Y. 2025-2026	F.Y. 2026-2027	F.Y. 2027-2028
M.P. Govt. Grant	626.00	626.00	626.00	626.00	626.00
Central Agencies (MHRD/UGC/AICTE/DST/CSIR etc.)	100.00	100.00	100.00	100.00	100.00
Tution Fee	3793.00	4516.00	5298.00	5904.00	6292.00
Other Fee	1837.00	2788.00	3894.00	5051.00	5842.00
IRG (Testing Consultancy etc.)	510.00	520.00	530.00	530.00	540.00
Total Income	6866.00	8550.00	10448.00	12211.00	13400.00

Rs. in Lakh



Rs. in Lakh