# Institute Development Plan

MVJ College of Engineering,
Near ITPB, Channasandra, Bangalore 560067

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# 1. BACKGROUND OF THE INSTITUTION, WITH VISION, MISSION AND OBJECTIVES

## 1.1 Introduction

The prime duty of an educational institute is to mould the entrants into skilled manpower that can participate in productive activities, in turn, contribute to the overall development of the nation. The educational scenario in India has been undergoing rapid changes. Every passing day heralds a development, in attempting to organize existing knowledge and to perceive natural and scientific phenomena requires logic, reasoning and experimentation and understands various happenings in an enlightened manner. It is to be noted that advancement in technology has always been innovative and explorative.

In this scenario, MVJ College of Engineering (MVJCE) has been established in 1982 under the flagship of **Venkatesha Education Society**, imparts education beyond Engineering and Management. The founder Chairman, Late Dr. M V Jayaraman have assimilated the essence of educational philosophy and established this society and undertaken ceaseless endeavours to intellectually drive the beginners to scale greater academic heights in various spheres of education. Many pioneering ventures of the Society speak volumes for the untiring efforts and relentless accomplishments towards realizing the educational goals.

The tagline of the MVJCE is '**Engineered for Tomorrow**' is aimed at training an engineer and imparting education beyond the curriculum. MVJCE is situated in Whitefield, Bengaluru, the garden city of India. MVJCE has state-of-the-art infrastructure, creating an environment for progressive learning and development. The college always strives and works toward achieving its goals.
MVJCE has well-defined vision and mission statements that reflect ambitions and targets.

## 1.2 Vision

Be an Institution of Excellence with International Standards.

## 1.3 Mission

- Impart quality education, along with industrial exposure.
- Provide world-class facilities to undertake research activities relevant to industrial and professional needs.
- Promote Innovation, Entrepreneurship and Value-added education that is socially relevant, along with economic benefits.

The above Mission statements formulated by eminent academicians and stakeholders, are approved by Governing body of MVJCE. They capture explicitly the character of the new education ideas created from time to time and embrace the faculties' commitment to education which focuses on preparing all students for comfortable careers and lives after graduation that contribute to solving societal issues. The vision of MVJCE is realized in the fact that the roots are firm in higher education. Its branches are spread far and wide as one can see that our rightly trained and well-groomed alumni have deserving placements all over the globe. Hence, MVJCE has found a strong place of its own on the map of technical educational world.

## 1.4 Core Values

MVJCE defines its culture by following core values to guide everyone through planning and improve continuously.

a. **Quality** – We provide education leading to the acquisition of necessary knowledge and skills to achieve information literacy, career advancement, personal enrichment, leadership, and service to the community. We will also strive for continuous improvement in all areas and will measure its progress with appropriate national standards.

b. **Integrity**– We are committed to ethical and responsible behaviour in actions by both the employees and students, thus fostering individuals who will have skills, knowledge, and ability to engage positively with a diverse and changing world.

c. **Overall Excellence** – In order to prepare the students with real-world experience, we deeply involve at all levels of the students' academic life to ensure that since the time they step into our campus, they work towards excellence.
d. **Innovation**– The convergence of creative leadership, cutting-edge curriculum design, and effective instructional delivery for an ever-changing global economy.
e. **Entrepreneurship and Value-added education** – We encourage creativity and innovation towards entrepreneurship and the value-added education to achieve personal and professional success
f. **Diversity** – We believe that our similarities and differences are opportunities for establishing a common bond and strengthening everyone and the College.
g. **Social Responsibility** – We create and cultivate a broad environment where everyone can enhance their skills and contribute to the concern of the society. We organize programs and activities by identifying the requirements and difficulties faced by the community for embedding social responsibility amongst the students who are the future leaders.

### 1.5 Core Principles

The following core principles of MVJCE provide the guiding beacon of light, to help us shape our students into valuable citizens of tomorrow. We take great care in adhering to the following:

- **Focus on students**: The primary mission of MVJCE is not only to educate incumbents in their chosen area of interest but also inspire to become leaders, innovators, and positive contributors to society.

- **Faculty and Staff**: The faculty of MVJCE inspire and direct all chores do academically, starting from basic education to the creation of new concepts, systems, and products. Administrative work force do all the support needed and partner with the faculty to ensure an excellent student experience.

- **Leadership and Ethical decision making:** The leadership and ethical decision making are essential for the growth of a person and an organization. Leadership development is one of the important components of an education system for all the segments: students and staff. MVJCE gives importance in planning to promote excellence continuously.

- **Commitment to diversity and excellence:** In order to attract the highest calibre of students, faculty and staff, MVJCE ensures that the management is open to all viewpoints. A culture of excellence must pervade the university in both academic and non-academic areas.
- **Resources management:** The effective resource management is important in overall development of an institute. MVJCE manages all its resources well and possesses strong financials, huge inventory, qualified human capital, and utilizes state-of-art information & communication technology.
- **Enhancement of reputation:** All the departments and sections of MVJCE will benefit from the recognition of any one of them. Hence MVJCE continuously work towards gaining recognition as a united institute. MVJCE desires to achieve global reputation and every member works to reach excellence in their chosen academic area.
- **Alumni contribution**: The greatest legacy of MVJCE is its alumni and their many contributions to business and society. MVJCE celebrates every year their achievements to motivate their successors. MVJCE likes to engage its alumni in planning for the future and rely upon them for their involvement and philanthropic support in the execution of its academic plans.

### 1.6 Quality Policy

The quality policy of MVJCE is stated below:

We aspire for global recognition through systematic and meticulous transformation of our students, into highly motivated graduates and postgraduates; enriched and armed/equipped with professional competence, managerial skills, built-in dynamism and humanism.

MVJCE is always quality conscious as per the policy and strives to attain higher levels continuously. The institute is implementing standard procedures as a quality measurement tool. The procedures are adapted to ensure, enhance and sustain the quality which are followed until a student is graduated starting from the day, he/she is admitted to a programme. All the processes are quality driven and embellished with continuous improvements to meet global standards by rigorous adherence to set procedures and quality audits. This will be achieved through involvement of people at all levels.

The quality policies are followed in every section of the campus life and are given below.

- Administrative procedures
- Admission process
- Teaching-learning process
- Examination System
- Assessment and Evaluation
- Research activity
- Curricular and extra-curricular activities
- Career and personality development programmes
- Training and Placement activities
- Extension and outreach programs

### 1.7 Aims and Objectives

MVJCE is established to deliver quality education and train incumbents to achieve their needs to lead successful life and contribute in making our country superior in all respects. In this regard the institute works with the following aims and objectives.

- To produce competent graduates, postgraduates and doctorates in chosen field of Engineering and Management of quality as per national and global requirement.

- To have moral ethics and core values for all human resources associated with it that includes students and staff.
- To develop intellectual and creative thinkers contributing to different sectors/sections across the society.
- To have state-of-art facilities with latest technology and to become a reputed/premier institute at national as well as international level.
- To offer programmes in multidisciplinary areas not only in Engineering and other fields and to attract pupil from various parts of globe.
- To develop quality consciousness among everyone in the institute including students.
- To promote, foster and sustain an environment to achieve academic excellence.
- To maintain a good cooperative and beneficial relationship among all the stakeholders of the institution.

## 1.8 End Note

MVJCE is known for its academic reputation reflected in the performance of university examinations, academic/co-curricular/extension activities in the past of the faculty and students, quality, and merit in the selection of students and teachers subject to statutory requirements, adequacy of infrastructure facilities, for example, library, equipment, etc. and quality of institutional management. MVJCE has been accredited with B++ by National Assessment and Accreditation Council (NAAC). All the eligible programmes are accredited by National Board of Accreditation (NBA). All the necessary financial resources are provided by the management for the development of the institution. The Institution has well organized administrative structure and motivated staff involving in the promotion of innovative reforms.

The Board of Governors of MVJCE consists of eminent personalities in various fields including academic/industry bodies actively suggesting ideas and follows up implementation for continuous development of the institution.

MVJCE attained the current status with its strengths of world class infrastructure, ragging-free, beautiful green campus, highly qualified faculties, state of art laboratories, excellent campus placements, fully equipped computerized central library, technology driven instructional methodology, excellent sports facility with gym, intensive training of students in soft skills, collaborative learning centers, club activities, etc.

MVJCE has achieved excellence in all spheres of activities with a high ranking in Karnataka due to its commitment and dedication to world-class engineering education.

## 2. ABOUT PROMOTING BODY

Established in 1970, Venkatesha Education Society was a dream of Dr. M. V Jayaraman. He was one of the very few individuals who saw his dream take tangible shape through the formation of the MVJ Group of Institutions. The Founder Chairman, Late Dr. M V Jayaraman with strong knowledge on educational philosophy had undertaken many ventures to drive the entrants to attain their academic goals in various fields of education. MVJ College of Engineering was established in 1982 as one of the pioneering venture and as a result of untiring efforts in realizing the educational goals of the society. The campus is located near ITPL (one of the IT hubs of beautiful garden city), Whitefield, Bangalore, on a 15-acre well-developed campus, with proper ambience for progressive learning having very good infrastructure and experienced faculty.

The group is dedicated to the cause of Education and empowerment of teachers. The number of educational Institutes under Venkatesha Education Society periodically increased and each one of them set new benchmarks in Indian education.

# 3. PROFILE OF THE INSTITUTION

## 3.1 Background and its Present Status

MVJ College of engineering established during the year 1982, has completed 42 years imparting quality engineering education in the city of Bangalore. It has come a long way since its modest beginnings. Today, it is ranked among the front-line Engineering Colleges in Karnataka. It has evolved constantly keeping pace with changing times and technologies. The College was conferred with Autonomous Status from the Academic year 2019-20.

The tagline of the MVJCE was coined right at the inception in 1982, 'Engineered for Tomorrow' with an aim to train the students and to impart education beyond the curriculum to meet tomorrow's challenges. Since the beginning, MVJCE has evolved and perfected a unique approach towards knowledge delivery for all programmes. The institute initially started with undergraduate programmes in four disciplines in 1982 with a modest intake of 200. Subsequently, the institute got approval for more programmes in different academic years and has grown by leaps and bounds in the last 42 years.

**Main Block in the campus**

**Bird's eye view of the campus**

**Green campus**

**Low Speed Wind Tunnel in Propulsion Lab of Aeronautical Engineering**

**Flight Simulator Lab established in 2021-22 through AICTE - MODROB by the Department of Aeronautical Engineering**


**Standard Penetration Test: 63.5 kg - IS -2131:1963**

**LabVIEW Academy established in association with National Instruments**


**Loading Frame with a capacity of 50 tones**

**IOT Lab established in 2022 through AICTE MODROB by ECE Department**

**Robotics & Industrial Automation Lab established in 2016**

**Spacious and well-ventilated Classroom**

**Machine Learning Lab of AI & ML Dept.**

**Dr. M. V. Jayaraman Auditorium**

## 3.2 Implementation of NEP 2020

Recently adopted National Education Policy 2020 by the Government of India envisages quality education to all our youngsters with the main aim of developing good, thoughtful, well-rounded and creative individuals. The NEP 2020 also advocates developing character, ethical values, constitutional values, intellectual curiosity, scientific temper, creativity and all other associated virtues. Higher education should lead to preparing students to face the society boldly, to have more meaningful and satisfying lives, work roles and also enable them to have economic independence. It means that the students have to become holistic

individuals, acquiring the set of necessary skills and values during their studies. Therefore, the educational Institute has to focus towards the incorporation of all necessary skills in a progressive manner at each stage of learning, during the higher education.

While recommending the policy, it envisions a complete overhaul and re-energizing of the higher education system to overcome some of the challenges prevailing in the system and make serious efforts towards delivering high-quality education, with equity and inclusion. One of the key requirements to meet this objective is moving towards faculty and institutional autonomy, revamping curriculum, pedagogy, assessment, and student support for enhanced student experiences, and also reaffirming the integrity of faculty and institutional leadership positions.

During the last two decades, MVJ College of Engineering has continuously introduced several innovative programmes in a progressive manner to expose the students to more industry related activities and prepare them Industry ready by the time they move out of the Institution. While introducing such specific activities, the sole objective has been to equip the students to face the demands of the industries. These activities were in addition to their regular curriculum and academic activities and are carefully crafted and implemented to expose the students to practical aspects of Engineering, nurture innovation, instill critical thinking and encourage the hands- on- training. The appropriate structuring of these programmes was properly guided through detailed deliberations in the Board of Governors. These programmes gained popularity year after year in the campus, thus attracting a large number of students.

The details of the programmes and their structure are given below.

- Idea Box - Innovation
- Tomorrow's Engineers – Engineering Solution to Societal Problems
- Tinkering Lab – Experiment and Conceptualize
- UAV – Develop Drones

- Astronomy – Explore the space
- Robotics and Industrial Automation Lab – Design Robots
- IoT – Connecting the world
- FSIPD –Ideas to Product
- Software Development - Code your ideas
- LabVIEW – Graphical Programming
- CNC Programming – Advanced Manufacturing

These programmes vastly helped to inculcate creative and innovative thinking in students, to train them to develop problem solving skills, as well as, to give them an opportunity to design and develop meaningful projects providing solutions to some of the societal / industrial problems. Considering all the above, MVJCE has revamped its curriculum considering the recommendation of

- NEP 2020
- AICTE (Model Curriculum)
- UGC
- VTU
- National and Societal requirements

Most of the recommendations of NEP 2020 have been incorporated while framing curriculum.

We have incorporated all the suggestions and designed a new curriculum in which all the innovative activities (verticals) are given credits to recognize students' innovative ideas. Some of the salient features are:

- Inter, Multi and Transdisciplinary Courses.
- Curriculum is made Industry relevant, application-oriented and branch relevant.
- Ability Enhancement courses are introduced from first year.
- Students needs are addressed: Both slow & fast learners.
- Choice Based Credit System is implemented to a larger extent.

- Ample opportunities for exploration by the students.
- Implementation of Integrated Courses from the first year.
- Handbook of formulae to reduce memorization to avoid rote learning.
- Lab is introduced for Mathematics – Experiential learning.
- Lab experiments/programs shall be classified as Demonstration, Structured Inquiry and Open-ended experiments/programs.
- specific focus on experiential learning and skill development.
- 25 to 30% variation of experiments in P & C subjects, stream-wise.
- The concept of Major and Minor has been introduced from 2021-22 to improve the employability and skill of students.

**'Mono Wheel Bike' developed by Bharath B (CSE), Venu Prasad (CSE), Badri Nath (ME), Vishnu Maheshwar (ECE), and Sheetal Sahu (ISE) was inspected by Dr. Anil D Sahasrabudhe, Chairman AICTE during the Workshop on "Readying Students for Industry 4.0" on 24th August 2019.**

The aspirations of the Institution have been to build effective programmes which enable the meticulous transformation of students, into highly motivated graduates and postgraduates; enriched and armed/equipped with professional competence,

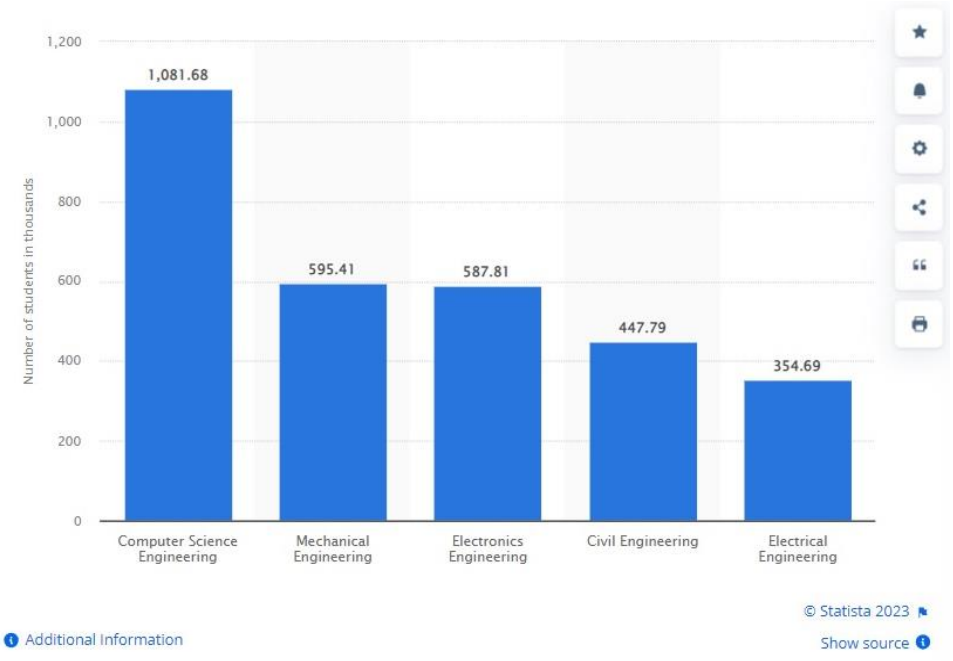
managerial skills, built-in dynamism and humanism. MVJCE is always quality conscious as per the policy and strives to attain higher levels continuously.

## 4. CURRENT SCENARIO OF TECHNICAL EDUCATION IN INDIA

India has developed a large number of infrastructure facilities in the field of Technical Education. This has given India a distinct edge in the globalized economy. Technical Education will contribute to the development of a country's economy and national growth. Technical Education includes programmes in Engineering, Technology, Management, Architecture, Town Planning, Pharmacy, Applied Arts & Crafts, Hotel Management and Catering Technology. Technical Education provides knowledge of a particular trade, craft, or profession. It can meet the growing needs of an expanding society and its growing demands.

In the last 25 years, the growth of technical education has been remarkable. The total number of institutions increased and the total intake of students at the Engineering degree level increased from 28,500 to approximately 4,52,260 in the last 25 years. The huge increase in the intake and the increase in the number of technical institutions has led to a significant increase in the quality of education in India.

Number of students enrolled in engineering at an undergraduate level across India in 2021, by discipline. (in 1,000s)



Source: Statista 2023

As per the results of a survey across India, around 1,081 thousand students were enrolled in computer science engineering discipline in academic year 2021. The second highly sought after engineering discipline was mechanical with about 595 thousand students for the same year.

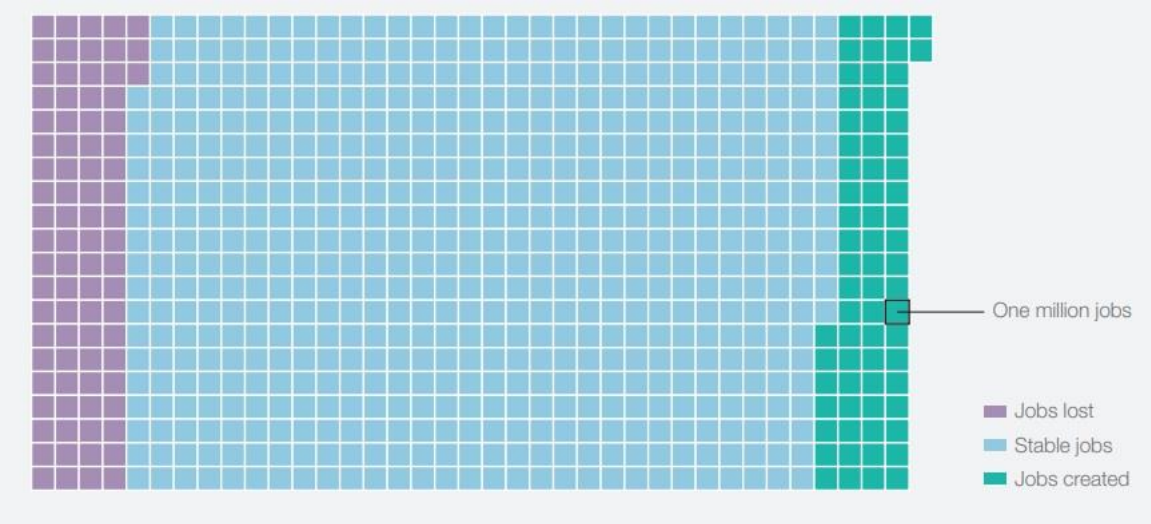
### 4.1 Jobs Outlook

In the next five years, macrotrends and technology are expected to generate a mixed picture of job creation and destruction across occupational categories and industries. A survey was conducted to analyse labour market churn caused by changes in a company's employment structure when new jobs are established or existing roles are removed (this excludes job changes where a new employee replaces an old one in the same capacity). Over the next five years, this paper anticipates a mean structural labour-market churn of 23% for studied enterprises across sectors and countries. This means that overall predicted employment migration, including both new roles created, and old ones eliminated, accounts for 23% of the current workforce. Some 23% of jobs are expected to change by 2027, with 69 million new jobs created and 83 million eliminated.

- According to a new analysis, the green transition and localization of supply chains will result in net job growth.
- Increased digital access and use of technology will also result in net job growth, but with bigger offsets from losses; slower economic growth, supply shortages, and inflation pose the greatest threats to jobs.
- The fastest-growing jobs are AI and machine learning professionals, sustainability specialists, business intelligence analysts, and information security specialists; education, agriculture, and digital commerce are predicted to have the highest absolute growth.

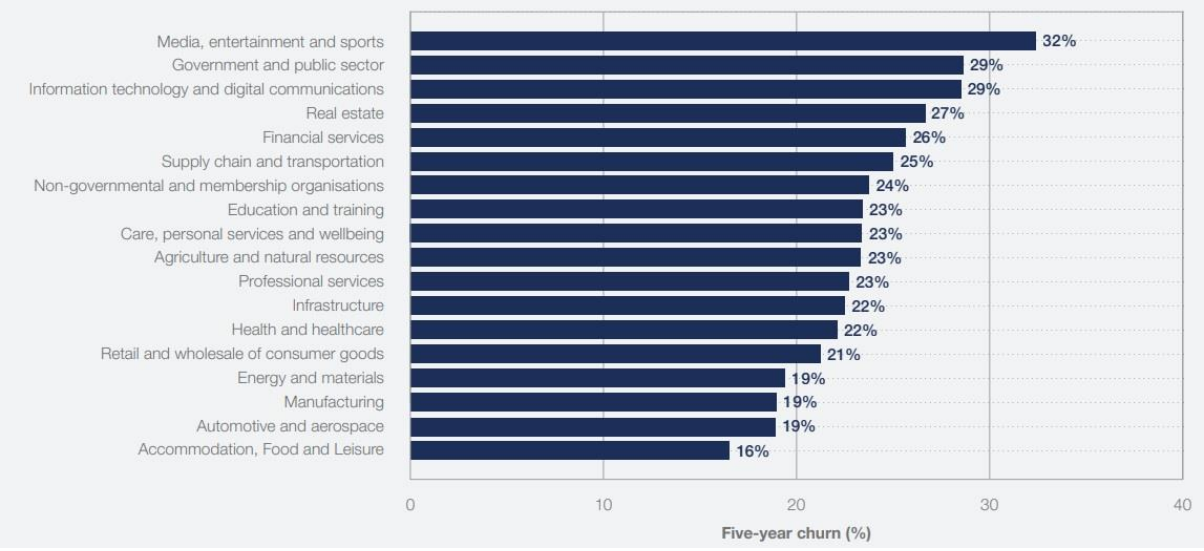
## 4.2 Projected job creation and displacement, 2023-2027

In the next five years, 83 million jobs are projected to be lost and 69 million are projected to be created, constituting a structural labour-market churn of 152 million jobs, or 23% of the 673 million employees in the data set being studied. This constitutes a reduction in employment of 14 million jobs, or 2%.




Source: World Economic Forum, Future of Jobs Survey 2023;

According to International Labour Organization, ILOSTAT, Labour Market Churn% by Industry is shown below.




Source World Economic Forum, Future of Jobs Survey 2023.

## 4.3 Significance of Technical Education

Education is an essential characteristic for every individual in a nation. It plays a critical role in changing the perspective of a country. No nation will be able to succeed unless and until all the people are educated enough to face the challenges that may come their way. Education is the only way a person can come to a realization about themselves and their future goals. Education can be divided into three categories. The first part is taught by teachers and educates the people about the problems of the society. This is known as Social Education. The second part uplifts the personality through spiritual education. The third part deals with professionalism and is called Vocational Education, which falls under the branch of Technical Education. Technical Education deals with various fields such as Trade, Commerce, Agriculture, Medicine and Engineering. With the growth of manufacturing industries in the 1990s and the IT industry in the late 2000s, there is a huge need for quality and highly skilled engineers.

## 4.4 Global Certifying Standards

Infrastructure and faculty strength are the building blocks for success in such practical oriented courses. Getting official approval from national agencies such as NBA will definitely help in improving the quality of educational institutions. Currently, the standards and processes are not as stringent as those of international agencies such as ABET or IET. Therefore, a broad authorization system needs to be changed to establish uniform global standards for promoting global community.

## 4.5 Major challenges in technical education

Some of the challenges in technical education include implementing a science-based modernizing of the engineering environment in institutions, creating technology-savvy campuses, using ICTs to enhance teaching effectiveness, developing a knowledge-centric learning environment, developing a research-oriented culture at all levels of education, and developing a proper system that links the power of thought and the power of connectivity to nurture talent of engineers. Another major challenge in technical education is the development of faculty

competence for enhancing teaching and fostering creative research. The institutions which offer technical education must be capable of offering the right mix of knowledge, skills and competencies as to deal with the presently rigid core specialties and also increase autonomy.

- Skills gap between graduates' capabilities and industry practices
- Focus on Quantity over Quality
- The absurd rise in substandard technical education institutions and a stagnant system of the curriculum
- Lack of Adequate Technology
- Budget Constraints
- Lack of Trained Faculty

### 4.6 Focus Areas in Technical Education

Science, engineering, and technology should be given equal importance in the future of technical education. The vision of technical education should be to develop logic thinking, intellectual analysis, and research related to industrial development. The practical utility of academic knowledge is essential for technical education. Institutions should prioritize industrial training and business development. Students should be more job-supplier than jobseeker.

- Focus on Research and Innovation
- Expansion of open and distance learning to increase Gross Enrolment Ratio (GER).
- Internationalization of Education
- Updating the Curriculum to match the Current needs of Industries.
- Offering Multi-disciplinary Education System
- Focus on providing inclusive and flexible learning environment to students.

### 4.7 Why focus on research and innovation?

At an individual level, research enables students to develop depth and breadth of knowledge in their choice of area of expertise as it is a systematic investigation and

study of multiple materials and sources. It helps them hone skills associated with problem-solving, knowledge acquisition and understanding.

## 4.8 Conclusion

All in all, technical education in India is on the right track and could benefit from major reforms as regards building a reliable and trustworthy professional workforce that can bring the country together for the benefit of future generations.

# 5. GOVERNANCE

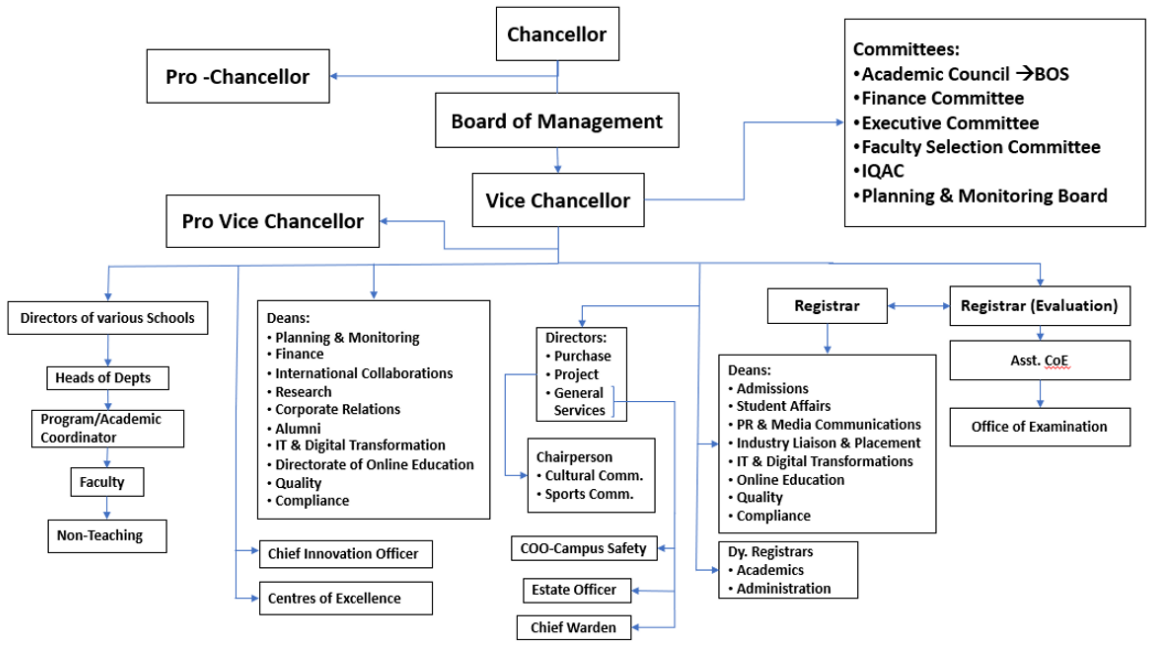
## 5.1 Introduction

This section aims to ensure the efficient and effective governance of the Institution at all levels while meeting the expectations of stakeholders. The Institution's governance aligns closely with its vision and mission, and it operates on a decentralized model to enhance governance and performance. The system is designed to be autonomous, accountable, decentralized, and transparent in its internal governance.

## 5.2 Advantages of Effective Governance

- Promoting transparency in governance and administration at all levels.
- Enhancing the quality of the teaching-learning process.
- Strengthening support programs for students.
- Excelling in co-curricular and extra-curricular activities.
- Ensuring compliance with rules and regulations.
- Strengthening the Industry-Academia relationship.
- Meeting accreditation requirements.
- Improving research competence, Research & Development, and publication quality.
- Establishing benchmarks with other reputed Institutions.

## 5.3 Organization Structure




Organization Structure

## 5.4 Nature of Governance:

The Institution follows a democratic and participatory mode of governance, involving all stakeholders in the administration.

### 5.4.1 Board of Management

The Board of Management is the highest governing body of the Institution, presided over by the Vice Chancellor, and comprising a minimum of 10 and a maximum of 15 members. It operates independently of the sponsoring body and has full autonomy in academic and administrative responsibilities. The composition of the Board of Management is as follows:

i. Vice-Chancellor... Chairperson
ii. Pro Vice-Chancellor (wherever applicable)
iii. Two Deans of Faculties (appointed based on inter-seniority rotation)
iv. Three eminent academics (appointed by the Chancellor and not affiliated with the Institution or Sponsoring body)

v. One representative from the Central or State Government (depending on the Institution's funding source)
vi. Two teachers of the Institution (one Professor and one Associate Professor, appointed based on inter-seniority rotation)
vii. Not exceeding four nominees from the Sponsoring body
viii. The Registrar, ex officio Secretary of the Board of Management

### 5.4.2 Academic Council

The Academic Council is the primary academic authority of the Institution that is aspiring to be a University. It will have the authority, as per the Rules, to oversee and ensure the maintenance of high standards in teaching, research, and training. Additionally, it will be responsible for approving syllabi, coordinating research activities, conducting examinations and tests, and any other duties and functions designated by the Institution's Rules. The composition of the Academic Council will be as follows:

i. Vice-Chancellor... Chairperson
ii. Pro Vice-Chancellor (wherever applicable)
iii. Deans of Faculties
iv. Heads of the Departments
v. Ten Professors (excluding Heads of Departments, appointed based on inter-seniority rotation)
vi. Two Associate Professors (appointed based on inter-seniority rotation)
vii. Two Assistant Professors (appointed based on inter-seniority rotation)
viii. Three educationists or individuals from other fields.
ix. The Registrar, ex officio Secretary of the Academic Council.

### 5.4.3 Planning and Monitoring Board

The Planning & Monitoring Board is responsible for overseeing the development programs of the Institution. It is chaired by the Vice-Chancellor, with the Registrar as the Secretary, and includes seven internal members and three external experts.

### 5.4.4 Finance Committee

The Finance Committee's composition will be as follows:

i. The Chairperson of the Finance Committee will be the Vice-Chancellor.
ii. If applicable, the Pro Vice-Chancellor will also be a member of the committee.
iii. One person nominated by the Society/Trust/Company will be a member.
iv. The Board of Management will nominate two representatives, one of whom must be a member of the Board itself.
v. The Finance Officer will serve as the Secretary of the Finance Committee by virtue of their office.

### 5.4.5 Board of Studies

Each Department of the Institution aspiring to be a University shall have its own Board of Studies. The composition of the Board of Studies for each faculty or department will be as follows:

i. The Chairperson of the Board of Studies will be the Dean of the faculty or the Head of the Department.
ii. All Professors within the faculty or department will be members of the Board of Studies.
iii. Two Associate Professors from the faculty or department will be part of the Board of Studies, selected based on their seniority in rotation.
iv. Similarly, two Assistant Professors from the faculty or department will be members of the Board of Studies, selected based on their seniority in rotation.
v. Additionally, a maximum of two persons with expert knowledge, including those from the relevant profession or industry, may be co-opted as members.

### 5.4.6 Selection Committee

One or more Selection Committees will be constituted to make recommendations to the Board of Management for appointments to the positions of Professors,

Associate Professors, Assistant Professors, and any other prescribed posts, in accordance with the UGC Regulations (on Minimum Qualifications for Appointment of Teachers and Other Academic Staff in Universities and Colleges and Measures for the Maintenance of Standards in Higher Education), 2018, as amended from time to time.

The Chairperson of each Selection Committee will convene meetings as and when necessary. The quorum for the Selection Committee meetings will be four members, including at least two experts.

### 5.5 Participation of Teachers in Decision-Making Bodies

i. Teachers hold a crucial role in bringing the college's vision and mission to life, actively participating in the decision-making process. The Deans and heads of departments/sections also play essential administrative roles, supporting the institution's head in various administrative matters.

ii. Additionally, teachers influence institutional policies by representing their interests in several governing bodies, such as the governing body itself, the Financial Advisory (Internal Audit Committee), the Building Committee, and the Hostel Committee of the College.

iii. Teachers further contribute significantly to the day-to-day functioning of the college by serving as members and conveners of various cells and committees. Some of these committees include the Internal Quality Assurance Cell, Library Management Committee, Financial Advisory Committee, Discipline Committee, Hostel Committee, Prospectus Committee, Grievance Redressal Committee, Website Development Committee, Purchase Committee, Works Committee/Building Committee, Academic and Administrative Audit Committee, Admission Committee, Examination Committee, Research Promotion Committee, Fundraising and Resource Mobilization Committee, Career Counselling and Guidance Committee, and Placement Committee.

iv. Through their active involvement in these committees, teachers play a vital role in shaping admission processes, examination procedures, library practices, hostel administration, and other academic priorities. They also

serve as motivators and leaders in cultural and socially conscious activities within the institution, taking charge of the NSS Unit, NCC, and various other co-curricular and extra-curricular activities. Their participation ensures a comprehensive and inclusive decision-making process within the institution.

## 5.6 Action Plan

i. The Institution will establish a Management Information System (MIS) to efficiently gather, organize, and integrate data related to both academic and administrative aspects of the institution.
ii. Faculty members will be encouraged to participate in inter-departmental mobility, allowing them to gain diverse experiences. The institution will also promote faculty refreshment by supporting them in attending capsule courses, granting necessary leaves for the same.
iii. The authority will motivate and inspire faculty members to engage in research activities and actively participate in seminars, conferences, and workshops.
iv. Quality assurance measures will be implemented within the existing academic and administrative system to ensure and enhance the overall quality of the institution.
v. Alongside academic development, the institution will foster a supportive environment for students' co-curricular and extra-curricular growth.
vi. Community participation of students will be actively encouraged. Students will be motivated to take part in various social service activities and participate in National Service Scheme (NSS) camps and other organized activities.
vii. A dedicated career counselling cell will conduct programs to guide outgoing students toward employability in various fields based on their aptitudes. Short-term programs on career potentials and entry into service will also be offered.
viii. Provision for training and development will be made available for improving human resource skills and leadership abilities.

## 5.7 Conclusion

Implementing these governance guidelines will result in the efficient utilization of the institute's resources, infrastructure, and facilities, ultimately leading to an improved quality of education. These guidelines will also foster transparency and accountability in the institution's administration, enhancing overall effectiveness and success.

# 6. ACADEMIC PLAN

This Academic Plan, charting our course for the next five years. Grounded in the principles of NEP 2021, our aim is to foster a multidisciplinary learning environment that encourages innovation, research, and inclusive practices. We seek to enhance access and equity in higher education, provide flexible and quality learning experiences, and nurture a culture of research and entrepreneurship. With a focus on faculty development, technology integration, and internationalization, we envision a dynamic and globally competitive academic plan.

## 6.1 Benefits of Good Academic Plan

A well-crafted academic plan can bring numerous benefits to an institution, contributing to its growth, reputation, and overall success. A well-developed academic plan sets the foundation for an institution's growth and success, facilitating quality education, research excellence, and a positive impact on students, faculty, and the broader community. It acts as a guiding force, ensuring that the institution remains competitive and relevant in the ever-evolving landscape of higher education. The objectives of the academic plan are

- To deliver high-quality teaching and research that is recognised both nationally and internationally.
- To offer flexible and innovative curriculum that include choice-based credit courses and projects leading to excellence and innovations primarily at undergraduate, at post-graduate and research degree levels
- In addition to domain-specific specialisation, participate in interdisciplinary/multi-disciplinary/trans-disciplinary teaching and research.
- Focus on research and innovate
- ion by establishing start-up incubation centres, technological development centres, Centre for Research, more industry-academic links, and multidisciplinary research, including humanities and social sciences research.
- To gradually develop into a Teaching Intensive University with Research Orientation.

Goal 1: Deliver and offer high-quality teaching and research, as well as a flexible and innovative curriculum that leads to excellence and innovation primarily at the undergraduate, post-graduate, and research degree levels, both nationally and internationally.

According to NEP 2020, higher education plays a critical role in promoting human and societal well-being and in developing India into the democratic, just, socially conscious, cultured, and humane nation that upholds liberty, equality, fraternity, and justice for all. Higher education makes a substantial contribution to the nation's long-term livelihoods and economic development.

The institute, is committed to delivering quality higher education with an unwavering objective of nurturing exemplary, thoughtful, versatile, and innovative individuals. The institution endorses the pursuit of in-depth knowledge in one or more specialized domains of interest, coupled with the cultivation of ethical values, constitutional principles, intellectual curiosity, scientific acumen, creativity, altruistic spirit, and 21st-century competencies across diverse academic realms encompassing sciences, social sciences, arts, humanities, languages, as well as professional, technical, and vocational subjects.

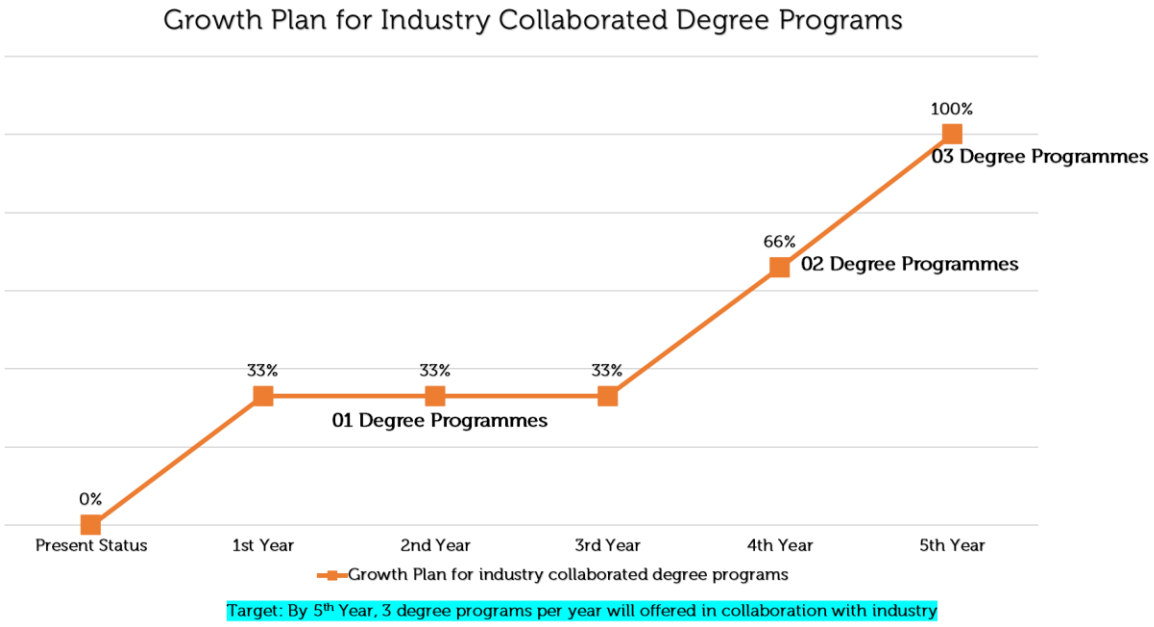
Strategy 1: To create a student-centered learning environment that fosters pedagogical innovation and promotes immersive learning experiences, ultimately enhancing the overall student experience.

Actions

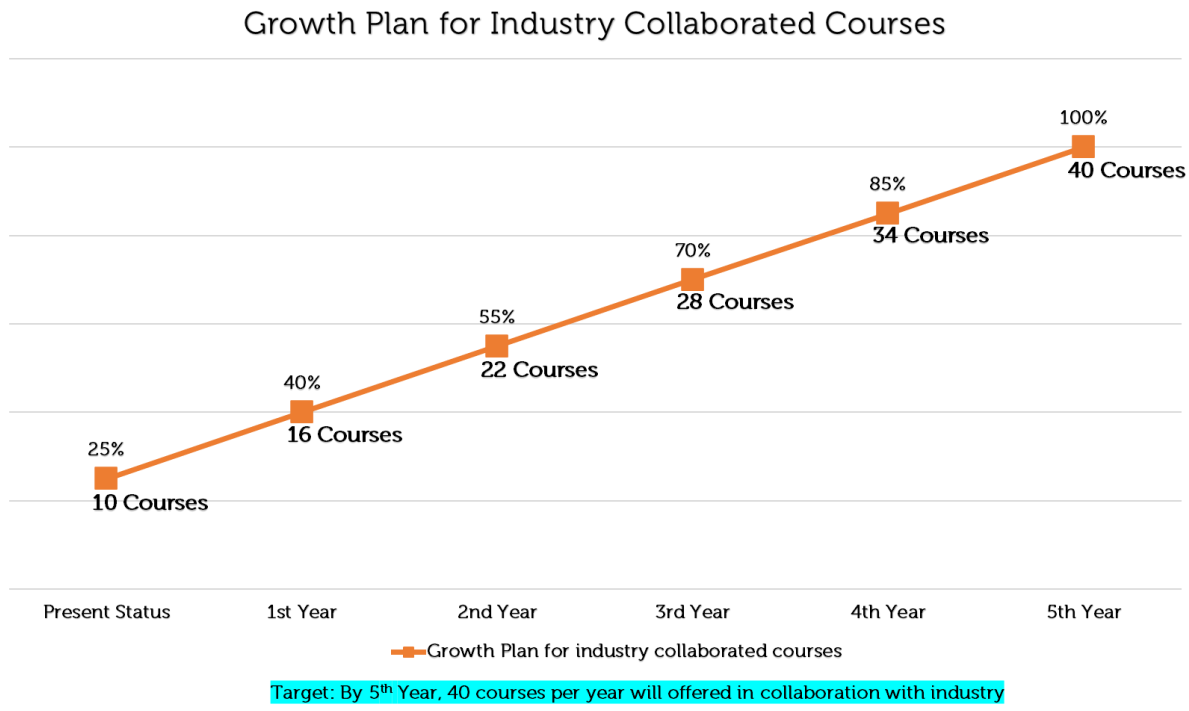
- Invest in state-of-the-art educational technologies and learning platforms to support blended and online learning.
- Collaborate with technology partners to develop virtual labs and simulation tools, enriching students' learning experiences.
- Provide training to students and faculty on effectively using technology for learning and research.

- Form a committee comprising faculty, students, and industry experts to review the existing curriculum for relevance and alignment with industry demands.
- Introduce flexible course structures that allow students to customize their learning paths based on their interests and career aspirations.
- Integrate project-based and hands-on learning opportunities into the curriculum to promote experiential learning.
- Implement a robust system for gathering feedback from students on their learning experiences and overall satisfaction.
- Regularly analyse the feedback data and use it to make continuous improvements in the teaching-learning process.
- Encourage faculty to engage in open dialogue with students to understand their needs and expectations better.
- Enhance student support services, including academic advising, counselling, and career guidance.
- Establish a mentoring program where senior students can mentor and guide juniors in academic and personal matters.
- Offer additional learning resources and academic support, such as tutoring and study groups.
- Create a welcoming and inclusive campus environment that celebrates diversity and encourages creativity.
- Organize cultural events, seminars, and guest lectures that expose students to a wide range of perspectives and experiences.
- Engage alumni as mentors, guest lecturers, and industry contacts, facilitating knowledge transfer and career development opportunities for students.
- Establish student forums and committees to actively engage students in decision-making processes and campus activities.
- Regularly assess the effectiveness of the implemented pedagogical innovations and immersive learning initiatives.
- Use data-driven insights and feedback to continuously improve and refine the student learning experience.

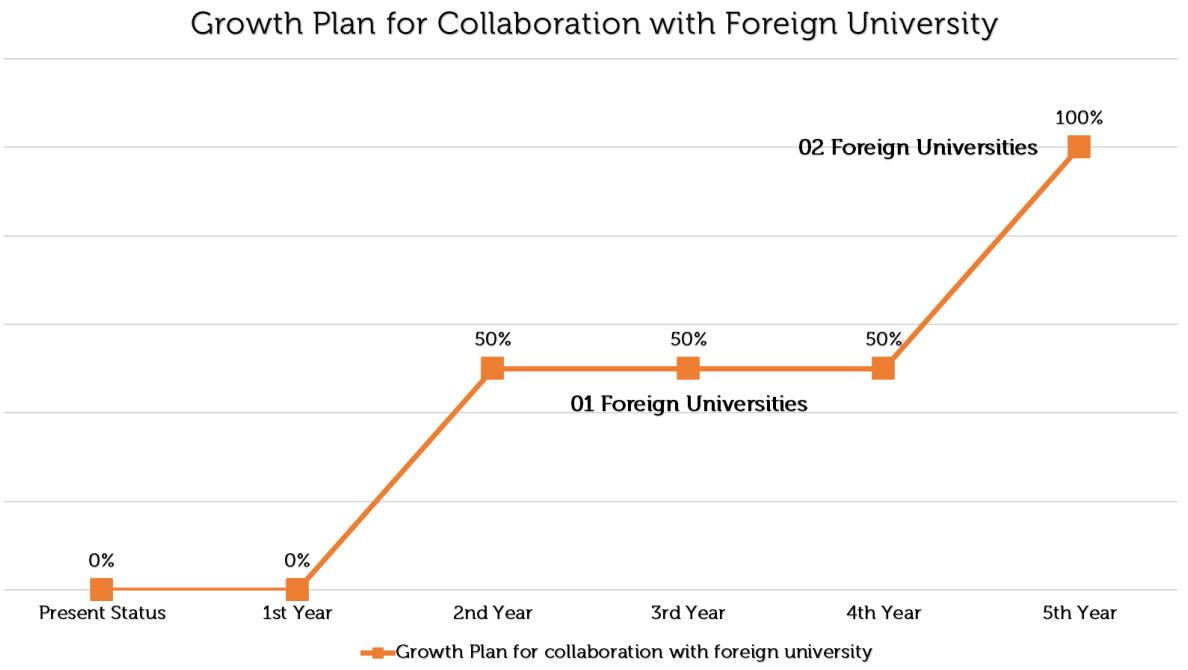
- Conduct periodic reviews of the action plan to align it with changing student needs and advancements in pedagogy.
- Instituting arrangements for partnerships with foreign or international universities to facilitate University students' participation in faculty and student exchange programs, dual-degree opportunities, and semester abroad initiatives, thereby enhancing their educational experiences.




Target: By 5th Year, 3 degree programs per year will offered in collaboration with industry




Target: By 5th Year, 40 courses per year will offered in collaboration with industry




Target: By 5th Year, the institute will have collaboration with 2 foreign universities

By implementing this comprehensive action plan, our institution will create an enriching and student-centric learning environment, nurturing well-rounded engineers equipped with practical skills and a deep understanding of their chosen fields. The enhanced student experience will contribute significantly to our pursuit

of becoming a university, fostering a reputation for academic excellence and innovation in the field of engineering education.

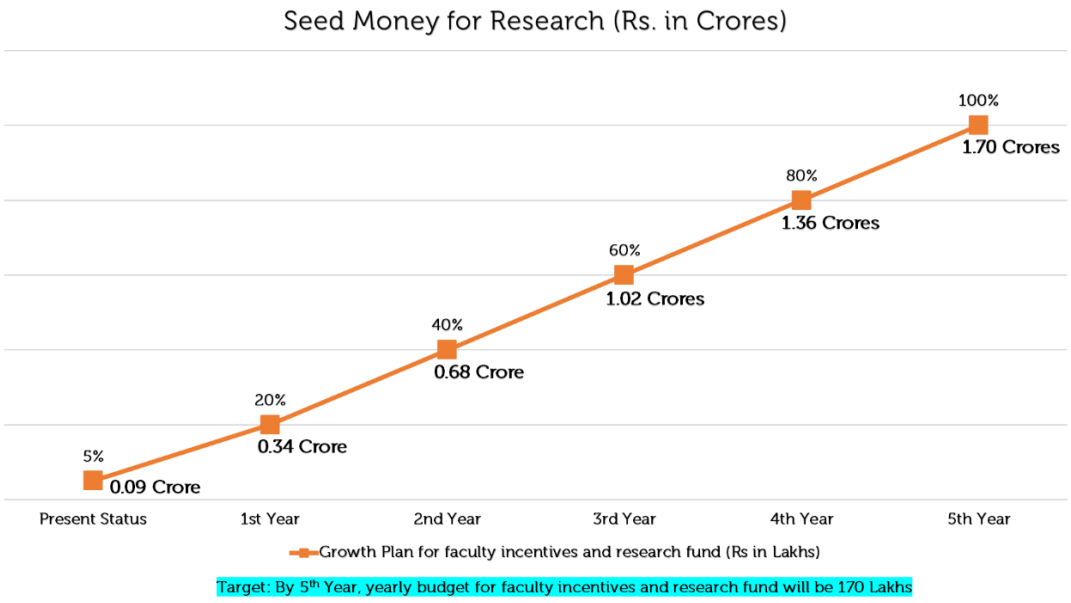
### Strategy 2: Retain and Develop excellent faculty

The objective of the institute will be to attract, retain, and develop a diverse and highly qualified faculty team, fostering a culture of continuous growth, research, and innovation in our journey towards becoming a university.

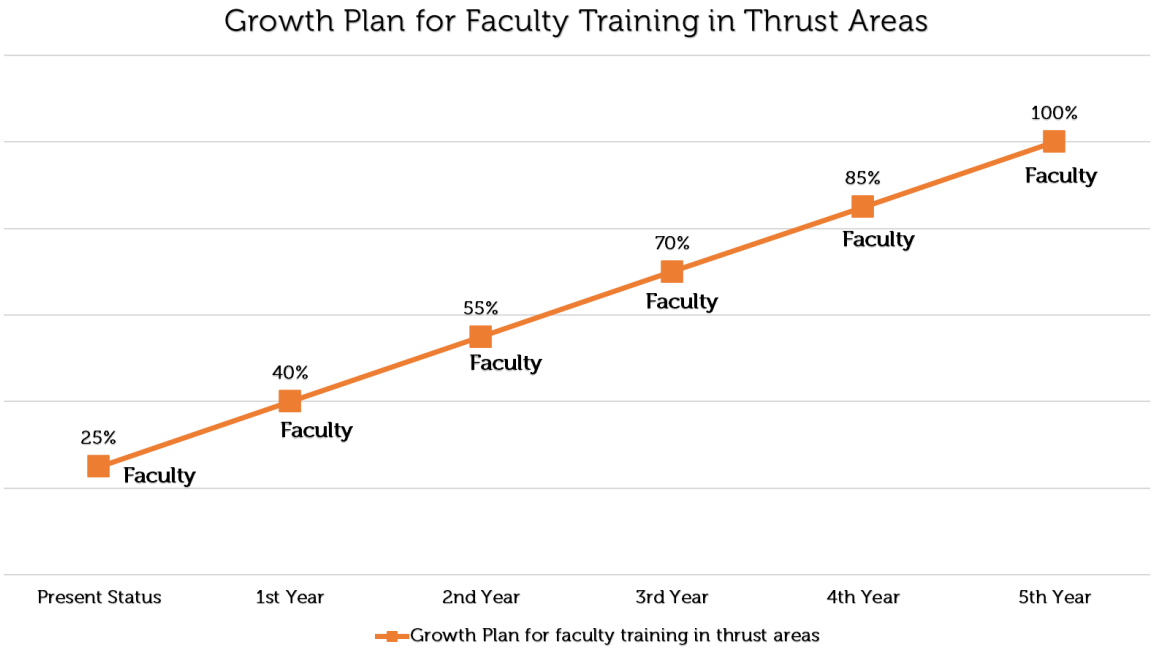
### Actions

- Develop a comprehensive faculty recruitment and retention policy that emphasizes merit, diversity, and inclusivity.
- Establish clear criteria for hiring and promoting faculty based on qualifications, teaching excellence, research achievements, and industry experience.
- Implement attractive remuneration packages and benefits to retain top talent and incentivize research and academic excellence.
- Introduce flexible work arrangements to accommodate faculty members' professional and personal needs, enhancing work-life balance and job satisfaction.
- Encourage remote and hybrid work models, enabling faculty to balance teaching, research, and other responsibilities effectively.
- Design and implement faculty development programs to enhance teaching methodologies, pedagogical techniques, and research capabilities.
- Provide opportunities for faculty to attend national and international conferences, workshops, and seminars to stay updated with the latest advancements in their respective fields.
- Establish research grants and funding opportunities to encourage faculty to undertake cutting-edge research and innovation projects.
- Collaborate with industry partners to promote joint research initiatives and provide access to industry-specific resources and expertise.

- Create a mentorship program pairing senior faculty members with junior colleagues to provide guidance and support in their professional growth.
- Offer leadership development programs to identify and groom potential academic leaders within the institution.
- Establish a faculty recognition program to acknowledge and celebrate outstanding contributions to teaching, research, and service.
- Offer performance-based incentives and awards to recognize faculty achievements and motivate continued excellence.
- Encourage cross-departmental and interdisciplinary collaborations among faculty to promote research and innovation across diverse domains.
- Establish research canters and institutes that facilitate interdisciplinary projects and foster a collaborative research environment.
- Facilitate opportunities for faculty to participate in international conferences, workshops, and exchange programs to broaden their perspectives and academic networks.
- Foster collaborations with renowned international institutions to facilitate faculty exchanges and joint research projects.
- Establish an alumni-endowed fund to support faculty research projects and development initiatives.
- Regularly seek feedback from faculty to identify areas of improvement and address concerns related to their professional growth and well-being.
- Implement measures to ensure faculty welfare, including access to healthcare, counselling services, and work-life balance support.
- Conduct periodic evaluations to assess the effectiveness of faculty development programs and initiatives.
- Monitor faculty performance, research output, and student feedback to gauge faculty effectiveness and growth.




Target: By 5th Year, yearly budget for faculty incentives and research fund will be 170 Lakhs




Target: By 5th Year, all the faculties will be trained in at least one thrust area

Through the implementation of these action plans, our objective is to establish a nurturing and intellectually stimulating environment that effectively attracts, cultivates, and retains highly accomplished faculty members. The ongoing expansion and exceptional performance of our faculty members will play a crucial role in enhancing our status as a university, thereby making a substantial contribution to our esteemed reputation for academic distinction and pioneering advancements in engineering education.

### Strategy 3: Participate in interdisciplinary / multidisciplinary / trans-disciplinary instruction and research

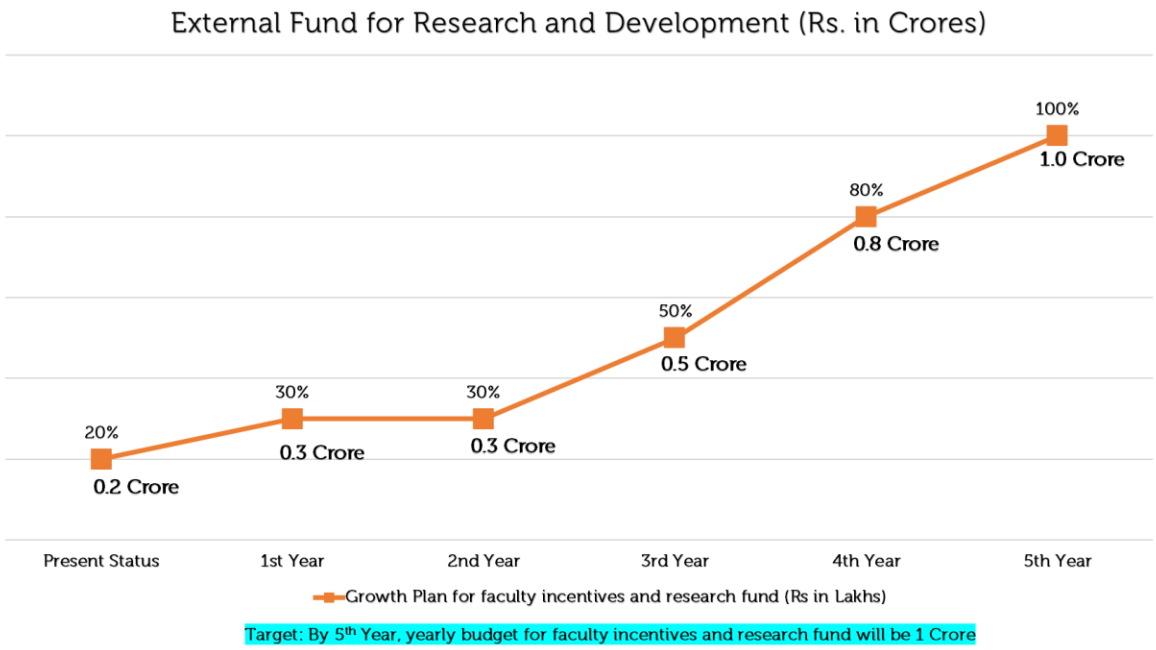
As per the guidelines outlined in the National Education Policy (NEP) of 2020, the incorporation of humanities and arts into undergraduate education alongside Science, Technology, Engineering, and Mathematics (STEM) has consistently demonstrated favorable learning outcomes. These outcomes encompass enhanced creativity and innovation, critical and higher-order thinking abilities, problem-solving aptitude, effective teamwork, proficient communication skills, comprehensive and thorough understanding of various academic disciplines, heightened social and moral consciousness, and a general sense of engagement and enjoyment in the learning process. Research is further advanced and enriched through the implementation of a comprehensive and interdisciplinary educational approach.

The institute seeks to foster a culture of collaboration and knowledge exchange by actively engaging in interdisciplinary, multidisciplinary, and transdisciplinary instruction and research, in accordance with its vision of becoming a university.

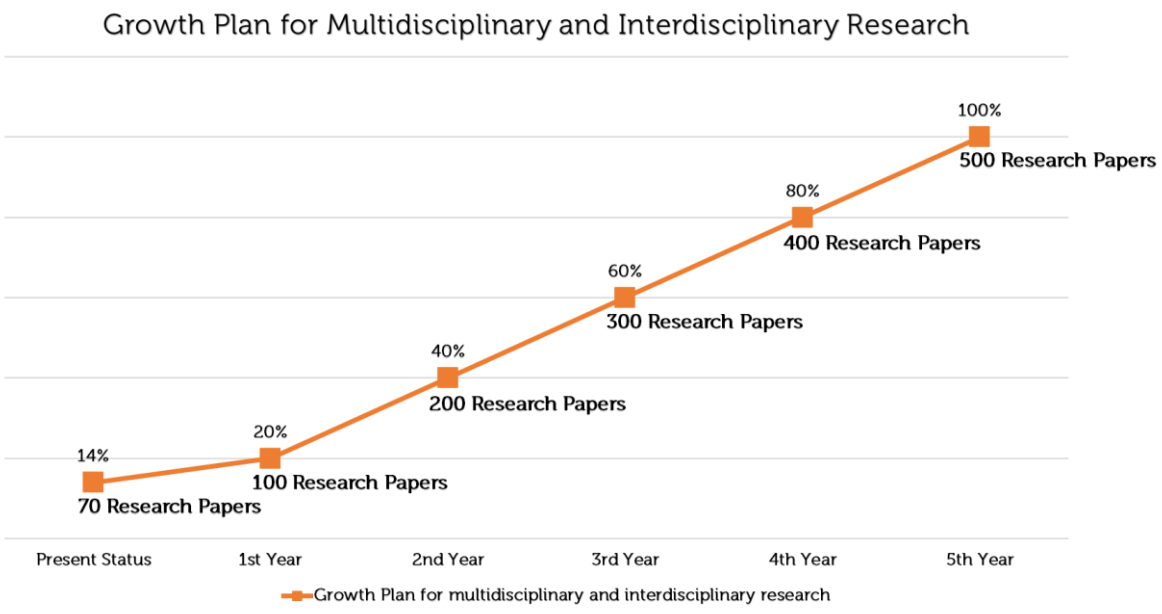
#### Actions

- Appoint Dean Academics for review and update the existing curriculum to include interdisciplinary and multidisciplinary courses that offer students a broader perspective and for smooth conductions of all academic activities.
- Introduce flexible credit systems to allow students to take courses from other departments and pursue minors or dual majors.
- Encourage students to participate in interdisciplinary research through internships, research assistantships, and project-based learning experiences.
- Offer research scholarships and grants for outstanding student proposals in interdisciplinary and transdisciplinary fields.
- Organize faculty workshops and seminars to promote the understanding and importance of interdisciplinary, multidisciplinary, and transdisciplinary approaches.

- Engage faculty members and researchers from different departments to collaborate on joint research projects and publications.
- Offer faculty development programs to equip educators with the skills needed for interdisciplinary teaching and research.
- Recognize faculty members and researchers for their contributions to interdisciplinary and multidisciplinary endeavours.
- Establish research committees to identify potential collaborative projects across different departments and research canters.
- Provide incentives and grants to faculty and researchers for initiating and leading interdepartmental research initiatives.
- Create interdisciplinary research canters and institutes to facilitate collaborative research and innovation.
- Establish multidisciplinary teams to address complex challenges and advance knowledge in various domains.
- Forge partnerships with industries, research organizations, and external institutions to foster interdisciplinary research and industry-academia collaboration.
- Facilitate joint projects, knowledge transfer, and expertise sharing with external partners.
- Establish transdisciplinary research platforms that focus on addressing complex societal challenges and integrating perspectives from multiple disciplines.
- Engage researchers, faculty, and students in collaborative problem-solving through these platforms.
- Form student-led clubs and forums that encourage cross-disciplinary interactions and discussions.
- Organize events, debates, and competitions that promote the exploration of interdisciplinary topics.




Target: By 5th Year, yearly budget for faculty incentives and research fund will be 1 Crore




Target: By 5th Year, yearly 500 multidisciplinary and interdisciplinary conferences and peer reviewed journals will be published

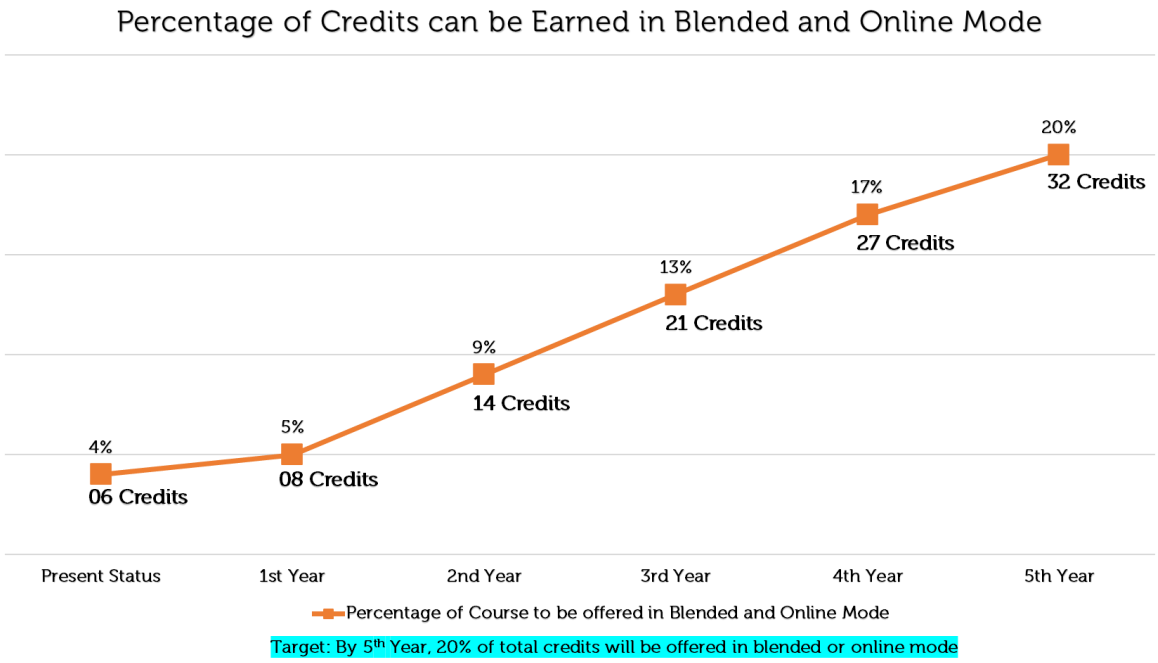
Our institute will encourage a collaborative and inventive atmosphere by following this complete action plan, supporting interdisciplinary, multidisciplinary, and transdisciplinary research and education. This innovative strategy will greatly contribute to our pursuit of university status, establishing us as a Centre for Research in engineering teaching and research with broad societal effect.

### Strategy 4: Utilize technology to improve teaching and learning.

The utilization of the digital technology environment will be employed to explore novel avenues for the discovery, experimentation, generation, and progression of knowledge, thereby augmenting the educational experience of our students. The objective is to enhance the capacity of the institution to offer faculty, students, and staff improved access to both physical and virtual educational settings. This will involve adapting the educational system to align with emerging trends and effectively equipping individuals with practical skills and workforce development opportunities. Additionally, there will be a focus on leveraging digital tools and technologies to facilitate research on critical global issues.

### Actions

- Promote the utilisation of technological resources among faculty, students, and staff to optimise the pedagogical experience. The institution has already implemented an Enterprise Resource Planning (ERP) system and a Learning Management System (LMS) to facilitate the delivery of course materials and educational procedures. Our objective is to optimise the efficiency and resilience of the current technology.
- The advent of Massive Open Online Courses (MOOCs) has significantly revolutionised the landscape of educational delivery. MVJCE is currently in the process of developing its own Massive Open Online Course (MOOC) programme, which will be made available for both internal and public use. The objective is to promote the inclusion of a Massive Open Online Course (MOOC) programme within the curriculum of all academic institutions, thereby extending its accessibility to both internal and external students.
- Develop a proficient Information Technology (IT) platform and infrastructure that efficiently caters to the academic and research requirements of the institution while maintaining financial sustainability. Cutting-edge technology will be employed to establish an environment conducive to collaborative work between faculty members and students, thereby fostering a culture centred on collaboration and knowledge sharing.




## Strategy 5: Enhance student and faculty diversity

In light of the National Education Policy (NEP) 2020's emphasis on the establishment of extensive multi-disciplinary institutions, it is imperative for the institute to augment its student population in order to accommodate a substantial increase in enrolments. Ensuring diversity is a crucial imperative for the institute. The presence of a diverse community comprising faculty and students would significantly contribute to the improvement of the teaching and learning process. Additionally, it would broaden the exposure of both students and faculty members to a wide array of experiences. Over the course of the next five to ten years, the institute will actively endeavour to enhance diversity in relation to both gender and geographical representation.

### Actions

- The institute will establish distinct objectives for every department or school with regards to the diversity of students and faculty members in terms of gender and geographic representation. Each school or department will contribute practical suggestions to facilitate the attainment of these

objectives. The objective is to attain a level of diversity of 25% among the student population across all academic programmes.

- The institute aims to establish a vital infrastructure that will effectively support the social integration of incoming students hailing from diverse regions across the nation and globe. The infrastructure of the institute encompasses a canteen facility that caters to the diverse culinary requirements of its members. Additionally, it provides accommodation for faculty members who relocate from different regions of the country and across the globe.
- We will ensure that all schools/departments prioritise the enhancement of diversity by implementing robust monitoring measures and appointing a Dean of Student Affairs. The department/schools will incorporate diversity as a significant component within their strategic plan.

Goal 2: Establish itself as a hub of exceptional research, knowledge creation and dissemination.

Strategy 1: Develop Centers of Excellence in Research in various clusters

Actions

- Identify departments/schools that possess the potential to produce research outcomes of exceptional quality on a global scale within the upcoming five-year period. Sufficient resources and mentorship would be allocated to these departments/schools in order to achieve desired outcomes. Develop better criteria for the systematic monitoring and tracking of research progress within each department.
- Develop a comprehensive research budget for each department or school, outlining the necessary resources to facilitate and undertake research activities. The allocation of research funds would be overseen by a research committee established at the highest level.
- Propose the establishment of the position of Head (Research) with the primary aim of fostering and promoting research activities and scholarly

publications within the various departments. The allocation of funds towards the employment of Research Assistants would be promoted in accordance with the research budget.

- Every department or school should prioritise the recruitment and retention of faculty members who possess strong research capabilities. Additionally, it is important to establish a structured mentorship programme to support faculty members who are in the early stages of their research endeavours.

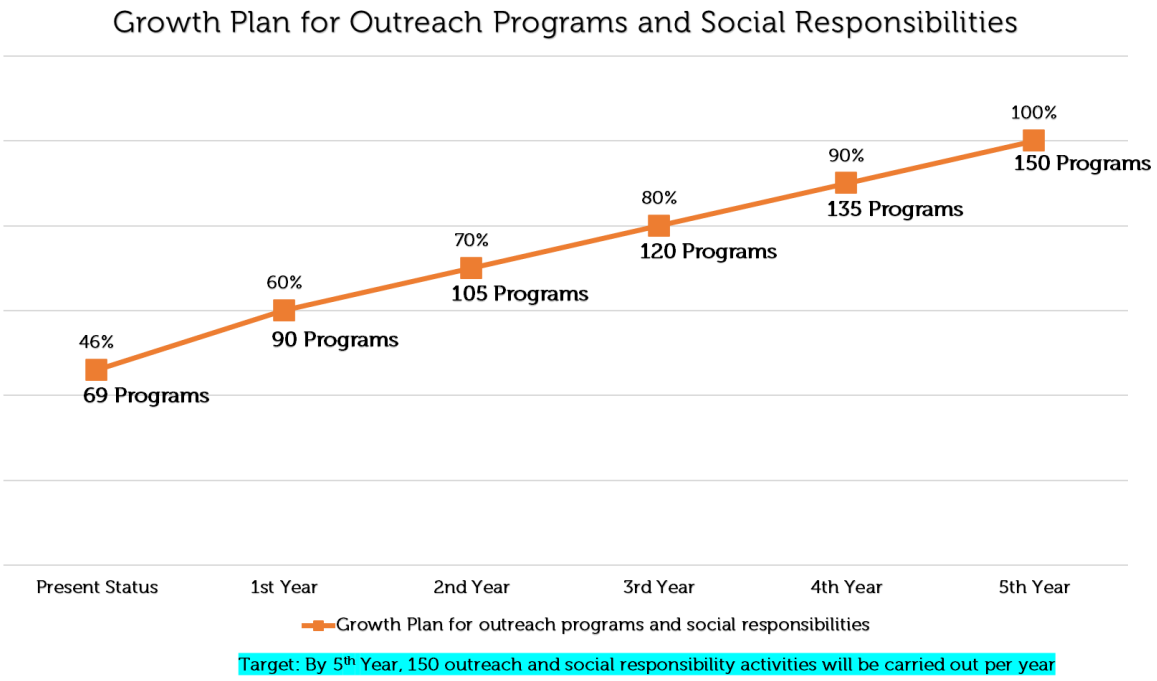
Goal 3: To scale up outreach programs for Sustainable Development Goals and Corporate Social Responsibility

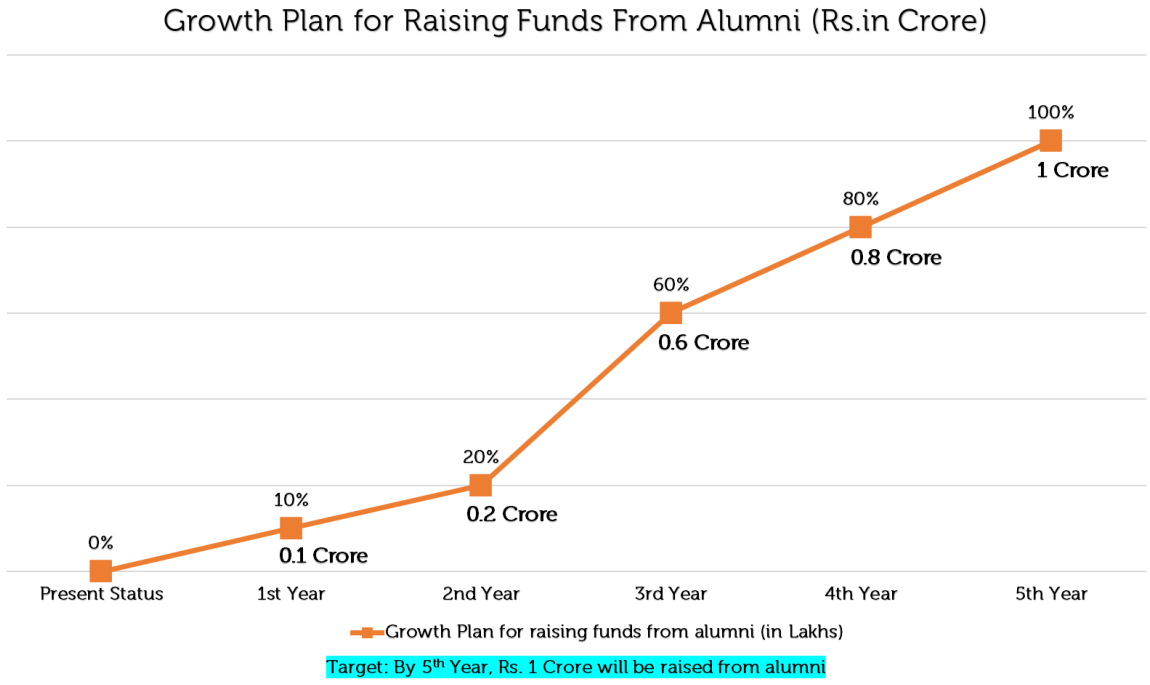
Strategy 1: Develop robust outreach initiatives that reach a broad range of stakeholders.

Actions

- The institute envisions that the research output generated by its diverse departments will have a positive impact on a wide range of societal segments. Therefore, we promote research that is focused on taking action and prioritising areas that have the greatest potential for impact. The institute aims to foster a collaborative relationship between researchers and live labs in order to identify projects that can have a significant societal impact.
- The institute promotes collaboration between its management programmes and industry by encouraging departments to actively engage in the identification of research projects. The institute aims to contribute to the industry by facilitating the dissemination of research output through conferences and workshops, which serve as platforms for faculty members to share their research findings.
- The objective is to enhance the professionalism and national presence of MVJ Outreach by expanding both the scale and scope of its activities. These initiatives would be incentivized to achieve self-sustainability by securing funding from external agencies and government programmes.

- **Community Engagement and Outreach**: The initial phase (Year 1-2) focuses on establishing the foundations for meaningful community engagement. A thorough Community Needs Assessment will enable us to identify and address the specific needs of the local community. By forging partnerships with local organizations, we aim to create synergies that amplify our collective impact. Service-learning programs initiated in Year 2 ensure that students actively contribute to community development.
- **Inclusivity and Diversity**: The plan underscores our dedication to fostering an inclusive and diverse campus culture. In the early years (Year 1-2), we'll implement inclusive admissions policies to diversify our student body, aiming for a 10% increase in enrolment from underrepresented groups. Concurrently, efforts to attract and retain diverse faculty members will be pursued, with a goal of a 5% increase in diverse faculty. An inclusive curriculum will be designed to incorporate diverse perspectives.
- **Sustainability and Environmental Responsibility**: Sustainability is a cornerstone of our development plan. Energy-efficient measures, waste reduction programs, and awareness campaigns will be launched in Year 1-2. By Year 2, we target a 10% reduction in energy consumption and a 20% decrease in campus waste. Subsequent years will see us promoting eco-friendly transportation and encouraging research in sustainability, further ingraining sustainable practices into our institution's ethos.
- **Monitoring and Evaluation**: To ensure accountability, we'll establish a dedicated office or committee responsible for monitoring and assessing our progress in community engagement, inclusivity, and sustainability efforts. Annual reviews and assessments will measure our impact, and feedback will drive continuous improvement.




Goal 4: Increase enrolment in accordance with the NEP 2020.

Strategy 1: To create scale in terms of schools and courses

- The National Education Policy (NEP) 2020 has significant implications for the strategic plan envisioned by MVJ University. The primary objective of the NEP is to establish expansive and comprehensive institutions that possess

both scale and scope, encompassing multiple disciplines. Degree-granting status will be conferred upon an institute that demonstrates adequate scale in terms of its range of courses and departments. The primary focus of the institute is to establish sufficient magnitude in terms of its programmes through the introduction of new programmes and departments.

- The institution should develop a new culture of multi-disciplinary flexible academic design that is in line with NEP 2020. The departments and faculty domain should be oriented towards addressing the seamless entry and exit policies, as well as credit transfer options outlined in the National Education Policy (NEP) of 2020.
- The University endeavours to attain the magnitude of a sizable educational institution by means of two pathways.
    - The university plans to augment the enrolment of students in existing programmes and strive to enhance both student and faculty numbers within a three-year period.
    - The university intends to establish various departments in order to enhance its status as a multi-disciplinary institution offering a wide range of programmes to accommodate a diverse student body.

| Year | Course/Department | Intake |
|---|---|---|
| 1st Year | | |
| 2nd Year | M-Tech in Aerospace Engineering | 18 |
| | M-Tech. Power Electronics and Drives | 18 |
| 3rd Year | BE in Cyber Security | 60 |
| | M-Tech. IoT & Sensor Systems | 18 |
| | BE in Robotics Engineering | 30 |
| 4th Year | BE in Electric Vehicle Technology | 30 |
| | Integrated M-Tech. Artificial Intelligence | 18 |
| | Integrated M-Tech. Computer Science and Engineering | 30 |
| 5th Year | BE in Electrical and Computer Science Engineering | 30 |
| | M-Tech Electric Mobility | 18 |
| | M-Tech in Environmental and Sustainable Engineering | 18 |

# 7. RESEARCH DEVELOPMENT PLAN

MVJ University is committed to the pursuit of excellence in research and aims to achieve international recognition through inter-school and inter-institutional collaborative research programs across a wide spectrum of Science, Engineering and Technological domains, namely, Aerospace Engineering, Aeronautical Engineering, Mechanical Engineering, Civil engineering, Electrical and Electronics Engineering, Chemical Engineering, Computer Science and Engineering, Information Science and Engineering, Electronics and Communication Engineering, Mathematics, Physics, Chemistry, and Management Sciences. The institute ensures that research in all fields, including trans and multidisciplinary types, grows exponentially, while keeping the ethical norms and research standards intact.

## 7.1 Objectives

- To strengthen the research activities in the Institution and be recognized in both national and international levels.
- To continuously encourage Research, Collaborations, and Consultancy among the faculty and take up collaborative research projects.
- To continuously strive for improving the quality of research, with a motive to address societal problems.

**Goal 1: To Strengthen the Research infrastructure of the university across all the schools.**

**Strategy: Participate in interdisciplinary / multidisciplinary / trans-disciplinary instruction and research**

Institution seeks to foster a culture of collaboration and knowledge exchange by actively engaging in interdisciplinary, multidisciplinary, and transdisciplinary instruction and research, in accordance with its vision of becoming a Deemed University.

Actions

- Review and update the existing curriculum to include interdisciplinary and multidisciplinary courses that offer students a broader perspective.
- Introduce flexible credit systems to allow students to take courses from other departments and pursue minors or dual majors.
- Encourage students to participate in interdisciplinary research through internships, research assistantships, and project-based learning experiences.
- Offer research scholarships and grants for outstanding student proposals in interdisciplinary and transdisciplinary fields.
- Organize faculty workshops and seminars to promote the understanding and importance of interdisciplinary, multidisciplinary, and transdisciplinary approaches.
- Encourage faculty members and researchers from different departments to collaborate on joint research projects and publications.
- Offer faculty development programs to equip educators with the skills needed for interdisciplinary teaching and research.
- Recognize faculty members and researchers for their contributions to interdisciplinary and multidisciplinary endeavours.
- Establish research committees to identify potential collaborative projects across different departments and research centres.
- Provide incentives and grants to faculty and researchers for initiating and leading inter-departmental research initiatives.
- Create interdisciplinary research centres and institutes to facilitate collaborative research and innovation.
- Establish multidisciplinary teams to address complex challenges and advance knowledge in various domains.
- Forge partnerships with industries, research organizations, and external institutions to foster interdisciplinary research and industry-academia collaboration.
- Facilitate joint projects, knowledge transfer, and expertise sharing with external partners.

- Establish transdisciplinary research platforms that focus on addressing complex societal challenges and integrating perspectives from multiple disciplines.
- Encourage researchers, faculty, and students to engage in collaborative problem-solving through these platforms.
- Form student-led clubs and forums that encourage cross-disciplinary interactions and discussions.
- Organize events, debates, and competitions that promote the exploration of interdisciplinary topics.

Our Institution will encourage a collaborative and inventive atmosphere by following this complete action plan, supporting interdisciplinary, multidisciplinary, and transdisciplinary research and education. This innovative strategy will greatly contribute to our pursuit of Deemed University status, establishing us as a Centre for Research in engineering teaching and research with broad societal effect.

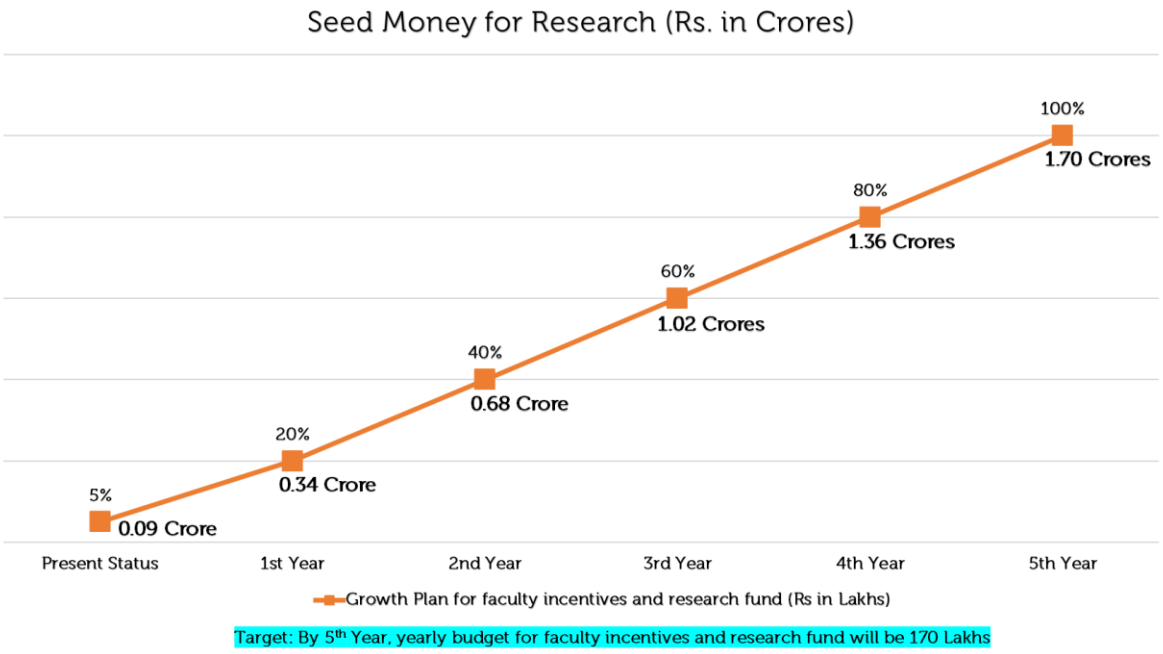
Goal 2: Establish itself as a hub of advanced research, knowledge creation and dissemination.

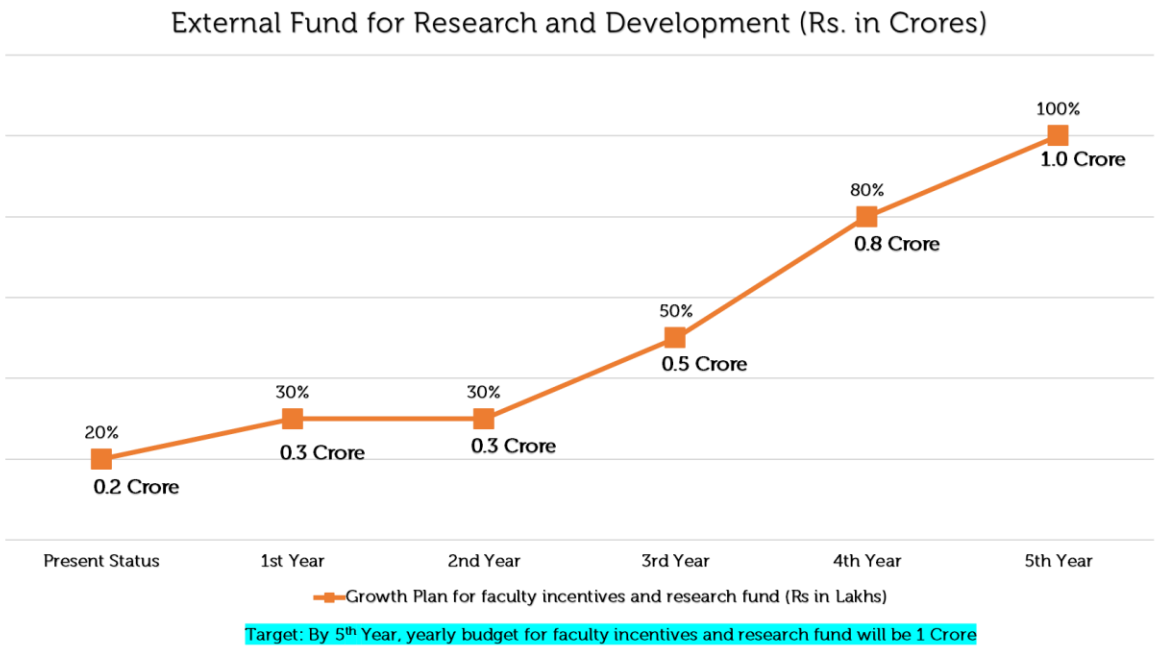
Strategy: Develop Centres for Research in various clusters

Actions

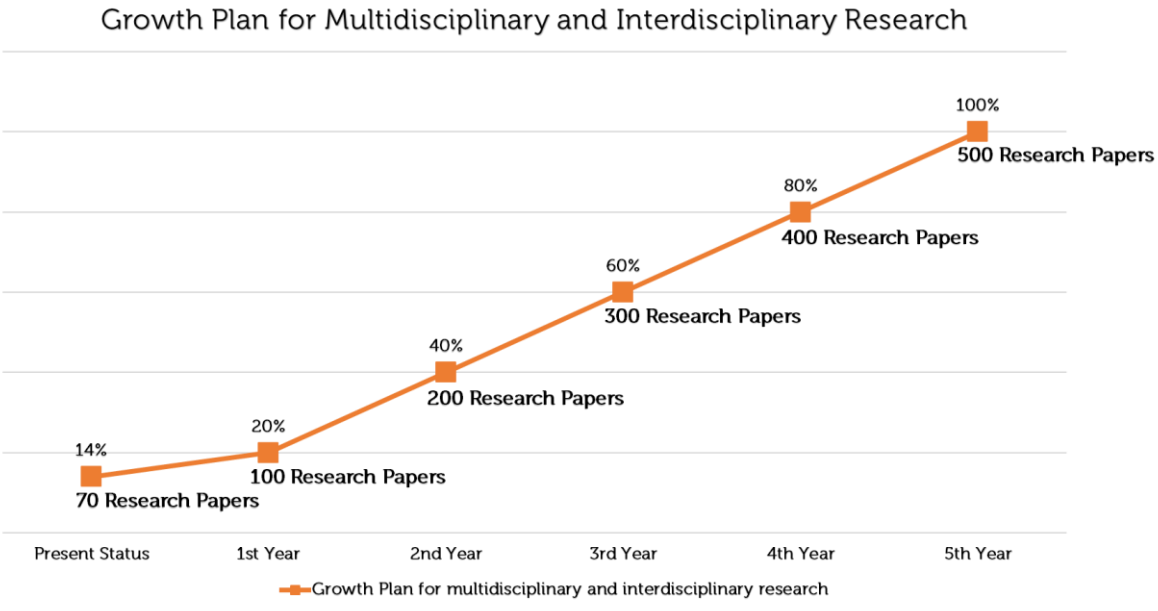
- Identify departments/schools that possess the potential to produce research outcomes of excellent quality on a global scale in the next five-year period. Sufficient resources and mentorship would be allocated to these departments/schools to achieve desired outcomes. Develop better criteria for the systematic monitoring and tracking of research progress within each department/school.
- Develop a comprehensive research budget for each department/school, outlining the necessary resources to facilitate and undertake research activities. The allocation of research funds would be overseen by a research committee established at the institution level.

- The allocation of funds towards the employment of Research Associates would be promoted in accordance with the research budget.
- Propose the establishment of the position of Research Chairs, with the primary aim of fostering and promoting research activities and scholarly publications for various departments.
- Every department or school should prioritise the recruitment and retention of faculty members who possess strong research capabilities. Additionally, it is important to establish a structured mentorship programme to support faculty members who are in the early stages of their research endeavours.






Target: By 5th Year, yearly budget for faculty incentives and research fund will be 1 Crore




Target: By 5th Year, yearly 500 multidisciplinary and interdisciplinary conferences and peer reviewed journals will be published

Goal 3: Develop a culture of research in various departments and create strong performance management system.

Strategy: To ensure significant quality of research work for meeting higher publication requirements.

Actions

- Adequate training and mentorship will be provided to the faculty members to develop themselves as excellent researchers.

- The departments would be encouraged to introduce research-based pedagogy like a dissertation, research projects to the students so that they can be converted into research and publication.
- The concerned researchers will focus on creating products, and patent them, with the intention of solving various practical social needs.

## 7.2 Existing Research Centres

Institute Research Promotional Centre (IRPC) and Research Monitoring Committee (RMC) at MVJCE help to create a research culture among faculty members and students. It enables a congenial and propitious environment for technological development, providing all the infrastructural facilities and monitoring the research activities of faculty and students. Faculty members are empowered to take up research activities, utilizing the facilities available at the Institute. The Institute Research Promotional Centre of the College motivates the faculty members to write feasibility studies and research projects, and get funding from various funding agencies like DRDO, DST, AICTE, DBT, KSCST, VGST. Presently there are 6 research centres recognized by VTU, in which research scholars are carrying out R&D activities and many faculty are pursuing their doctoral research. The recognized Research Centers are:

a. Department of Civil Engineering
b. Department of Mechanical Engineering
c. Department of Electronics & Communication Engineering
d. Department of Electrical & Electronics Engineering
e. Department of Computer Science & Engineering
f. Department of Chemistry

### 7.2.1 Robotics & Automation

Centre for Research in Robotics and Automation has been having a vibrant existence in the Department of Electronics and Communication Engineering. The Centre is aimed to enable students to develop skills and solve complex technological problems. The lab is equipped with state-of-the-art equipment which are used in many processing and manufacturing industries. The lab caters

to the need of budding automation engineers by enabling them to learn Pneumatics, Hydraulics, Electro-pneumatics, Electro-hydraulics and Programmable logic controllers. The students trained in the centre participate in India skills competition under various allied trades. The Centre offers internships, value-added courses and vocational skills in Robotics and Automation. The coordinators who guide the students are well trained to bridge the gap between Industry and Academia.

### 7.2.2 Objectives

- Training Students in robotics and automation with related programming.
- Making students as competent as industrialist by providing solutions for real time problems and to make collaboration with the industry.
- Preparing the students to participate various technical competitions.
- Supporting students to do research and analyze application specific robots.
- Enriching students to create innovative products and extending as consultancy projects

### 7.2.3 What we do

In connection with this lab, we have planned to develop products in the field of robotics and automation by our students and prepare them to participate in various competitions at the national, and international level.

## 7.3 Proposed Centres for Research

To promote vigorous R&D in the Institution, it is proposed to establish various Centre for Research. Each Centre for Research will be either altogether a new facility or augmentation of the existing research infrastructure. These Centre for Research will be well equipped to perform basic / applied research, design, synthesis, simulation, testing, prototype development, and fabrication. These Centre for Research with expertise and competence will be used as enablers to promote collaborative research between industries and academic / research

institutes. It is proposed to enter into joint R&D activities / MoUs with various industries to achieve technological developments, address day-to-day societal issues and find solutions.

The proposed Centre for Research are briefly outlined here.

### 7.3.1 Centre for Research – Advanced Materials

As a part of Centre for Research, both basic research and technology development for structural applications would be taken up in the area of advanced composite materials, keeping in view of environment, energy and other sectors. The Centre for Research also brings together expertise from faculty members engaged in diverse polymer research activities to initiate projects in specific areas. Additionally, the center would attempt to help industry in development of new technologies/products in the theme areas. It is the objective of the center to create trained manpower that can be absorbed by the industry to help in research, product and process development in the area of advanced composites.

#### Research Areas

1. Advanced polymer composites
2. Bio-composites
3. Nano structured materials
4. Composites for structural applications
5. High performance Composites
6. Composites for sustainable constructions.

#### Objectives of Centre for Research

1. To have state of the art facilities to carry out research activities on advanced polymer composites.
2. To carry out basic research to facilitate the application of proposals for major funds.
3. To facilitate research scholars to carry out research activities on advanced polymer composites.
4. To support students to take up innovative projects.

5. To provide consultancy services.
6. To promote R&D activities in the domain of polymer composites and advanced Materials.

Expected Outcomes

The Centre for Research is expected to generate significant research output in major thrust areas including energy materials and devices, fuel production from biowaste, process intensification, real-time monitoring and mitigation of water and soil pollution, biomimetic and biomolecular chemistry and polymer nanocomposites and blends for strategic applications.

### 7.3.2 Centre for Research – Energy Systems

The consumption rates of fossil fuels and energy are increasing day by day, and these conventional energy resources are fast depleting in nature. It is estimated that in the next 50 to 100 years the world will exhaust most of its fossil fuel resources, and this situation may result in energy crisis, unless newer resources are not found. Realizing the seriousness of the energy issue, many developing countries are moving towards exploring and harnessing renewable energy sources. To explore the renewable energy completely we need to understand technology. 173,000 terawatts of solar energy striking the earth continuously, which is 10000 times more energy compared to energy utilized in the whole world, but it is unexplored. Hence, we need a system or a technology to explore the solar energy, at its full potential. On the same account, we can minimize the consumption of non-renewable energy by upgrading the present technology. Our institute is trying to address this issue through a new Centre for Research dedicated for research activities in the field of Energy. It is proposed to initiate the center of excellence with investment in the basic research infrastructure to help both the student and researchers.

Objectives: The Objectives of the proposed Centre for Research are as follows:

1. To develop a new innovative solution to address the present energy problem and at the same time optimize the energy utilization.

2. To bring together all the faculty members working in different areas of energy such as solar cells, solar thermal, bio-oil, alternate fuel etc., including those pursuing their doctoral research in this area.
3. To promote collaborative research, industry partnership leading to patents and research publications.

Expected Outcomes

The Centre for Research will be focused in the research and development of new technologies, and upgradation of existing technologies that facilitate the use of Renewable energy systems. The Center will strive towards the incorporation of high efficiency energy convertors and harvesters, that can ensure maximum energy throughput, in the present scenario of global energy scarcity.

### 7.3.3 Centre for Research - Antenna, Microwave and RF Engineering

**Vision** - To be a leader in the field of Antennas and Radio Frequency technologies for Wireless Systems.

**Mission** - To engage in advanced research, design, innovation, training, and consultation in the field of Antennas and Radio Frequency technologies for Wireless Systems.

Objectives

- To conduct Advanced Research leading to innovations in the areas of Antennas and RF systems.
- To offer Consultancy Services and to seek external Funding from the government agencies and industry.
- To collaborate with Industrial partners in the design and development of novel Antennas and RF systems for applications in wireless systems.
- To offer Workshops and short-term courses to train Engineers in the Wireless Industry.
- Train students in the Research and Design of Antennas and RF systems.
- To publish Journal articles and Patents.

Expected Outcomes:

The Centre for Research will focus to provide the following research activities:

- Simulation and optimization of Antennas and RF components
- Antenna integration and SAR analysis using CST-MWS/ ANSYS HFSS
- Antenna testing and measurement facilities
- Meta surface testing for absorption, reflection, and metamaterial properties
- RF Leakage testing for Radars

### 7.3.4 Centre for Research - Semiconductor Devices Research Lab (SDRL)

Semiconductor device research is a critical field that plays a key role in the development of new technologies and the advancement of electronic devices. Some of the areas where semiconductor devices are used include computing, communications and consumer electronics. Therefore, it is required to have a lab facility that focusses on the development and investigation of semiconductor devices.

In the proposed Lab, both faculty and students can work on a variety of aspects related to the design, fabrication and characterization of different semiconductor devices, including sensors, transistors, solar cells.

Another objective of this proposed lab is to enhance students' knowledge of the semiconductor devices with hands-on experience by fabricating and characterising semiconductor devices.

The proposed Centre will have the following components:

- Thermal evaporator
- Sputtering unit
- Thermal oxidation furnace
- Mask aligner
- Spinner
- Probe station with LCR meter
- I-V meter

### 7.3.5 Centre for Research – Artificial Intelligence and Machine Learning

A Centre for Research in Artificial Intelligence and Machine Learning is a dynamic hub where cutting-edge research, innovation, and practical applications in AI&ML converge. Its primary goal is to accelerate the growth and impact of AI&ML technologies across various domains, including healthcare, finance, manufacturing, and more.

## Objectives

The objectives of the Centre for Research will be focusing on

- Research Advancement
- Skill Development
- Innovation Incubation
- Industry Collaboration
- Ethical AI

## 7.4 Proposed Research Labs & Research Centres

### 7.4.1 Electric Vehicle Lab

An electric vehicle (EV) lab is a specialized facility or workspace where research, development, testing, and experimentation related to electric vehicles will take place. This lab will play a crucial role in advancing electric vehicle technology, improving their efficiency, safety, and performance, and addressing various challenges associated with EVs.

#### Vision

To be a well-recognized lab in cutting edge technologies in the niche area of electric vehicles research and development for the benefit of society.

#### Research Areas

1. Battery Research
2. Motor and Power Electronics Testing
3. Vehicle Performance Testing
4. Charging Infrastructure
5. Wireless power transfer technologies
6. Vehicle-to-Grid (V2G) Integration
7. Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) Communication
8. Autonomous Vehicle Integration
9. Data Analysis and Simulation

**Battery Research:** EV lab will focus on the development and improvement of battery technology. This includes researching new materials for batteries, testing battery durability and lifespan, and optimizing charging and discharging processes.
**Motor and Power Electronics Testing:** Lab will have facilities for testing electric motors, inverters, and other power electronics components used in EVs. Researchers evaluate motor efficiency, control algorithms, and thermal management systems.

**Vehicle Performance Testing**: EV labs will be equipped with dynamometers and other testing equipment to assess the performance of electric vehicles, including acceleration, braking, handling, and range under various conditions.

**Charging Infrastructure**: Researchers will study and develop EV charging infrastructure, including fast chargers, wireless charging technology, and smart charging systems. This helps improve charging speed, convenience, and efficiency.

**Vehicle-to-Grid (V2G) Integration**: The lab will also explore V2G technology, which allows EVs to not only draw power from the grid but also send excess energy back to it. This can help stabilize the grid and reduce electricity costs.

**Vehicle-to-Vehicle (V2V) and Vehicle-to-Infrastructure (V2I) Communication**: Lab will work on developing and testing communication protocols that allow EVs to communicate with each other and with infrastructure for improved safety and traffic management.

**Autonomous Vehicle Integration**: With the rise of autonomous driving technology, EV lab will focus on integrating electric vehicles with self-driving systems and testing their performance in autonomous mode.

**Data Analysis and Simulation**: Researchers use computer simulations and data analysis tools to model and optimize various aspects of electric vehicle design, including battery management, energy efficiency, and aerodynamics.

### 7.4.2 Additive Manufacturing Research Lab

In today's rapidly evolving technological landscape, 3D printing has emerged as a transformative tool with vast potential across industries such as manufacturing, healthcare, education, and design. We envision the proposed 3D Printing Lab Facility as a hub of innovation, fostering creativity, research, and development and consultancy for both faculty and students.

**Objectives of the 3D Printing Lab:**

**Innovation and Research:** The lab will serve as a centre for pioneering research and development, enabling us to explore novel applications of 3D printing technology and advance our understanding of its capabilities.

**Collaboration**: We aim to foster interdisciplinary collaborations by providing a shared space where experts from diverse fields can converge, exchange ideas, and collectively work on projects that leverage 3D printing.

**Education**: The facility will facilitate educational programs, workshops, and training sessions, equipping individuals with the skills required to harness the potential of 3D printing in their respective domains.

**Prototyping and Manufacturing**: Our lab will empower faculty and student to create rapid prototypes and manufacture complex components with precision and efficiency.

**Facility Overview**:

The proposed Additive Manufacturing Research Lab Facility will include:

**Advanced 3D Printers**: A range of high-quality 3D printers capable of working with various materials, from plastics to metals, allowing for diverse applications.

**Design Software**: Cutting-edge design and modeling software to assist users in creating intricate and customized 3D models.

**Material Resources**: A variety of materials suitable for different projects, ensuring compatibility with various requirements.

**Workstations and Collaboration Areas**: Well-equipped workstations for designing, modeling, and post-processing, as well as collaborative spaces to encourage knowledge exchange.

**Training Facilities**: Dedicated spaces for training sessions, workshops, and seminars to educate users about the principles and practices of 3D printing.

The establishment of 3D Printing Lab Facility aligns with our institute's commitment to innovation and excellence. We firmly believe that this initiative will place us on the cutting edge of technology and open doors to good opportunities in consultancy and grant proposal funding. This facility will be helpful for the student projects and faculty research work and publication of Journal papers.

### 7.4.3 Vibration Test Measurement Lab

#### Objectives

Vibration lab is essential to expose Aero students to experimental part of Structural Dynamics, which they study as a theory subject (Theory of Vibrations). Working in

the Vibrations lab will make them understand the subject in a better way, because of practical applications and testing. It is useful for B Tech, M Tech and PhD students. The hands on experience gained by our students will make them industry ready and compete better with other students.
Also useful for flutter studies of Aerospace Structures to acquire and process the data collected during the wind tunnel testing.

Facilities/ equipment

The lab set up will consists of Data Acquisition System, Sensors, Impulse Hammer, Cables and few Aerospace Structural models.

Research/ consultancy area of activities

Ones the setup is available and made operational, it can be used for research activities and consultancy works as well. We can provide services to many startups developing drones and UAVs and to DRDOs on a need basis.

Utilization

The vibrations measurement system can be used to work on Civil structures also. The dynamic characteristics of civil structures can be studied at model level and full-scale level.
It will be useful for Mechanical department to study all mechanical structures and their behaviors under different vibration modes.
It will also be useful to train EC, EEE and Instrumentation students to learn Digital Signal Processing and sensors which they study in their course.

## 7.5 Targets for Research Publications and Patents

### 7.5.1 Five-Year Targets (Next Five Years)

#### 7.5.1.1 Research Publications:

- Research Papers in Peer-Reviewed Journals: Aim to publish a minimum of 200 research papers in reputed peer-reviewed journals across various disciplines.

- **Conference Papers**: Target at least 150 conference papers, including presentations at national and international conferences.
- **Interdisciplinary Research**: Encourage and ensure that 30% of the research papers are the result of interdisciplinary collaboration.
- **Impact Factor**: Strive to maintain an average impact factor of 2.5 or higher for journal publications.
- **Online Repositories**: Ensure that 90% of research documents and reports are available through institutional online repositories.

#### 7.5.1.2 Patents:

- **Patent Filings**: File for a minimum of 20 patents, emphasizing innovation and practical applications.
- **Collaborative Patents**: Promote collaborative patents involving industry partnerships, targeting a minimum of 40% of total patent filings.
- **Technology Transfer**: Facilitate the transfer of technology through licensing or commercialization for at least 5 patents.
- **International Patents**: File for 5 international patents to protect intellectual property on a global scale.
- **Patent Citations**: Aim for at least 100 citations of institution-owned patents in external research and industry publications.

### 7.5.2 Ten-Year Targets (Next Ten Years)

#### 7.5.2.1 Research Publications:

- **Research Papers in Peer-Reviewed Journals**: Increase the annual publication rate to 300 research papers in reputed peer-reviewed journals.
- **Conference Papers**: Target a minimum of 250 conference papers annually.
- **Interdisciplinary Research**: Elevate the percentage of interdisciplinary research papers to 50% of total publications.
- **Impact Factor**: Maintain an average impact factor of 3.0 or higher for journal publications.

#### 7.5.2.2 Patents:

- **Patent Filings**: Accelerate patent filings to a minimum of 40 patents per year.
- **Collaborative Patents**: Increase collaborative patents with industry partners to constitute at least 50% of total patent filings.
- **Technology Transfer**: Actively promote technology transfer for 10 patents annually.
- **International Patents**: File for 10 international patents annually to strengthen global intellectual property presence.

- **Patent Citations:** Target a minimum of 500 citations for institution-owned patents in external research and industry publications.

### 7.5.3 Monitoring and Evaluation:

Regularly assess progress toward these targets through an established Key Performance Indicator (KPI) tracking system.

Conduct quarterly or semi-annual reviews to evaluate the institution's research performance and make necessary adjustments to strategies and resource allocation.

Utilize feedback and data analysis to ensure that research efforts are aligned with the institution's overarching goals and objectives.

This plan provides a clear roadmap for increasing research productivity and impact over the next five and ten years. It reflects the institution's commitment to fostering a culture of research excellence, interdisciplinary collaboration, and innovation in line with the principles of NEP 2021.

# 8. INFRASTRUCTURE DEVELOPMENT PLAN

## 8.1 Introduction

MVJ College of Engineering (MVJCE) has invested significantly in developing state-of-the-art infrastructural facilities that cater to the diverse needs of students, faculty, and researchers. These amenities play a pivotal role in enhancing the comprehensive learning experience, fostering innovation, and nurturing holistic development among students. This advancement is enabling us towards achieving the esteemed status of a deemed university.

### 8.1.1 Scope of the Plan

University infrastructure development is a strategic process that employs a robust planning framework designed to achieve the University's strategic objectives. This policy advocates for infrastructure advancements on the University premises while aligning with the University's Mission and Vision.

## 8.2 Existing infrastructure at MVJCE

MVJ College of Engineering (MVJCE) currently has a range of well-established facilities that contribute to its vibrant learning environment. These facilities are designed to enhance the educational experience and provide students with the resources they need to excel in their studies. From state-of-the-art classrooms to advanced laboratories, MVJCE is equipped to support various disciplines and activities. Additionally, the campus offers recreational spaces, libraries, and other amenities to ensure a well-rounded and enriching college journey for all its students. A comprehensive breakdown of the current infrastructure facilities available at MVJ is shown below.

### 8.2.1 Administrative Block

The administrative block of MVJCE provides individual chambers for Chairman, Principal, Administrative office, Admission office, Registrar and Public relations officer with all required facilities.

### 8.2.2 Human Resources (HR) section

The section is functioning from a well-established office with an interview hall and an air-conditioned board room. The board room is utilized for conducting important meetings also. A record room is provided as an annexure.

### 8.2.3 Administrative office

This office has a vital role in fulfilling the administrative needs of MVJCE. It concentrates on all the activities related to students and employees which include admissions, accounts, purchase, salary, remuneration, scholarships and maintains these records. The office has separate cubicles for Registrar, Superintendent and other staff working in the office. The office is equipped with all necessary facilities like internet, phone, duplicating machines, scanner, Fax machine, storage racks etc.

### 8.2.4 Examination section

A well-established examination section is functioning effectively in the campus. It has a special confidential room as per standards, equipped with high-speed photocopying machines and high-resolution CCTV camera. Only authorized personnel will be permitted to enter the room. To enhance the evaluation process, the existing valuation centre is equipped with necessary facilities. The centre is also fitted with CCTV cameras to monitor the overall process. The Controller of Examinations, Deputy Controller of Examinations and other examination staff manages this section.

### 8.2.5 Visitor's lounge

A well-furnished area is reserved at the entrance of the administrative block where a visitor can relax and wait until his work is fulfilled in the campus. A receptionist always will be present during working hours in the lounge to assist and give proper directions to the guest.

### 8.2.6 Campus store

The store caters the needs of all departments, sections, staff and students and opens on all working days. The stores contain most of the items needed for an educational institution so that a user need not spend extra time to procure them from outside. A faculty in-charge manages the requirements of the store.

### 8.2.7 Principal Office

The office of the principal is spacious, air conditioned and adjacent to main office with all facilities. A waiting space with comfortable seating arrangement is available that can accommodate visitors. This chamber is also used for academic meetings.

### 8.2.8 Staff Room

MVJCE provides staff rooms for each department. Departments have separate HOD and staff room with adequate facilities. The staff room is partitioned to accommodate individual faculty, provided with computer and internet facility. It also has a cabinet with locker facility to store individual's books and other confidential files.

### 8.2.9 Common Room

MVJCE has provided separate common rooms one each for boys and girls. The rooms are open on working days for relaxing during break times. The rooms are furnished with adequate facilities.

### 8.2.10 Canteen

The canteen of MVJCE is in proximity to all the departments and opens during college hours. It has a well-maintained hygienic kitchen, dining halls with sufficient seating capacity and essential services as required to staff and students. The canteen has an annexe catering to guests.

Apart from the canteen service, two counters maintained by Nescafe and Cafe Coffee Day are open beyond office hours for the benefit of students and employees.

### 8.2.11 Auditorium

MVJCE has a large state-of-the-art auditorium with a seating capacity of one thousand and high-quality audio-visual equipment for effective organization of various national and international events. The auditorium has live video conferencing and media streaming facilities. The auditorium is offered to reputed companies and organizations for their pre-placement presentation talk or orientation program. The auditorium is also supported by large parking spaces, reception and vacant lobby areas. This auditorium is named after our founder chairman as Dr. M V Jayaraman Memorial Auditorium.

Smt. Rajalakshmi Jayaraman seminar hall is located at the ground floor of main auditorium, which is spacious, centrally air conditioned, also fitted with high quality audio-visual systems for effective presentations and has a seating capacity of 400. The ambience of hall makes it an ideal setting for various conferences and seminars. In addition, the college has an open-air auditorium to cater the needs of the faculty and students.

### 8.2.12 Internet facilities

MVJCE provides internet facilities for all staff and students. All the computing systems available in the college are connected to 100Mbps LAN with 1:1 contention ratio on fibre hand out. The entire campus is enabled with Wi-Fi facility with a bandwidth of 3.02 GBPS with 70 extendable access points placed in various locations like library, labs, hostel, canteen, corridors, outdoor etc. The internet connection is controlled and regulated using a UTM device consisting of a SOPHOS-antivirus and Anti-spam data base. College surveillance camera recordings are spooled on to the video storage. All the important servers are in a safe and secured place and IT help desk manages entire network in the campus. The help desk also resolves issues like hardware trouble shooting,

software installation, maintenance of biometric devices and other network related issues.

### 8.2.13 Medical facilities

Medical facilities are available in the campus through a dispensary. A Medical Officer and one First Aid attendant are looking after the dispensary needs. Dr. S U Shivaprakash, MBBS, M D is working as Medical Consultant. The medical centre is full-fledged and equipped with all the necessary equipment. Adequate medicines are available to cover the primary healthcare needs and first aid. Comfortable bed facility is available to take rest and for the convenience of doctor to treat the patients. Clean and hygienic environment prevails in and around the medical centre.

### 8.2.14 Transport

MVJCE provides faculty and students with bus services from different parts of Bangalore city to the institute. The buses are comfortable, safe and economical, being subsidised by the Institute. Five well-maintained buses fitted with speed governors and ply between different routes covering.

most of the important locations in the city. A separate transport in-charge coordinates the transportation system.

The bus service is also used for other purposes during free hours. It is used to commute students and faculty for industrial visits, survey camps, sport competitions, techno-cultural festivals etc, held in and around Bangalore.

### 8.2.15 Hostels for Boys and Girls

MVJCE has separate hostels for boys and girls that can accommodate a total strength of 635students (Boys: 472, Girls: 163). The hostels are hygienic and maintained regularly. Newspapers and magazines are provided in each hostel. Common TV viewing rooms are provided. Laundry facility is available for the benefit of hostel students.

### 8.2.16 Seminar Halls

MVJCE has seminar halls which are fully air-conditioned with necessary facilities like LCD projector, and audio-visual systems. These halls have a minimum of hundred seating capacity.

### 8.2.17 Maintenance

The Maintenance department of MVJCE is situated near the main entrance of the administrative block. It looks about the matters related to housekeeping, maintenance of the buildings, gardens etc. Entire campus is well maintained with hygienic conditions.

### 8.2.18 Placement office

The Training and Placement cell at MVJCE facilitates the process of recruitment, training programmes for all students. Many of our students are recruited through the cell during on-campus placement process. The cell continuously is in touch with the corporate world arranging for placements in leading Indian and multinational companies to understand the specific needs of industry like talent, competitiveness, leadership etc. MVJCE also provides individual counselling sessions for needy. The placement cell has enough facilities for group discussions, interviews and online tests (more than 400 computers with dedicated internet and LAN connectivity).

### 8.2.19 EDC Cell

Entrepreneurship Development Cell promotes the importance of entrepreneurship in campus. With the help of EDC students can explore entrepreneurship as their career option. Its objective is to help create the entrepreneurial leaders of tomorrow, who are focused on opportunity, value creation, and have the necessary knowledge, skills and network to be successful. These leaders positively impact economic growth and nurture the entrepreneurial ecosystem of the nation.

Entrepreneurial interaction, awareness camp, idea box presentations etc. are arranged by the cell. On innovation day the creative ideas of engineers of tomorrow are encouraged. National level Project Expo and Competition are being held on the same day.

### 8.2.20 IIPC

MVJCE has an active Industry Institute Partnership Cell (IIPC). The primary aim of the cell is to ensure that the graduating students are "Industry Ready" by forging strong interaction with relevant industries. IIPC prepares the students of MVJCE to meet the needs and requirements of industry.

The IIPC has representatives from all departments of the college who facilitate interaction with the industries in their respective domain / specialisation. The college has laboratories and test equipment that can be used by interested industries to carry out their testing / experiments for developing new products. The college is open to collaborate with industries in addressing / solving their day-to-day problems in their production floor / processes where latest and innovative solutions can help in improving their productivity. The college has experienced faculty with sound industry background, who understand the industry needs and can work with them in finding solutions. The IIPC will facilitate industries to utilise the available latest equipment in the college laboratories as Research and Development Lab for the industry needs.

### 8.2.21 NSS/NCC Cell

National Service Scheme (NSS) unit of MVJCE was started on September 5, 2011under the guidance of VTU. It operates under a program officer and a student coordinator. The main objective of NSS program is to prepare the NSS volunteers for the democratic, self-disciplined, and self-reliant way of life. The student leaders, NSS volunteers and other members of the staff, and eminent personalities from the community are also associated with it. They are being encouraged to participate in planning, execution, and evaluation of NSS

program. MVJCE conducts regularly various activities as per VTU guidelines and our management.

MVJCE has established National Cadet Corps (NCC) Wing under 1 KarArmdSqn NCC from 2022

**Sports Facilities** in the College Campus (indoor/outdoor), Playgrounds, Fitness equipment, sports coaches, etc. MVJCE provides ample opportunities to develop encouraging physical health, positive personality and imbibe ethical social values by students' participation in various sports activities. The college has large playgrounds, one of which is floodlit and also concreted basketball court. Dedicated facilities within the campus for both indoor and outdoor sports provide the perfect training ground. Physical education director supervises all activities of the sports department.

MVJCE also provides excellent fitness and gym facilities. Fitness Centre has training facilities for both men and women. Members can have training on variety of latest equipment comparable to any of the commercial fitness Centre. It offers the latest cardio and weight training equipment to its faculty and students. The department of sports organizes different tournaments of VTU as applicable. It also organizes Dr. M.V. Jayaraman Memorial Cricket tournament and Smt. Rajalakshmi inter-collegiate Volleyball tournament in the campus.

| Covered Area of Classrooms | | | | |
|---|---|---|---|---|
| Type of Facility | No. of Rooms | Covered Area of each Room | | Total Area (Sq. ft.) |
| | | Sq. m. | Sq. ft. | |
| Classrooms (UG) | 67 | 66 | 710 | 47598 |
| | 9 | 69 | 743 | 6684 |
| Classrooms (PG) | 13 | 33 | 355 | 4618 |
| Tutorial rooms (UG) | 19 | 33 | 355 | 6749 |
| Drawing Hall | 1 | 132 | 1421 | 1421 |
| **Total** | **109** | | | **67070** |

Covered Area of Laboratories

| Sl. No. | Lab No. | Name of Laboratory | Carpet Area (Sq.mt) |
|---|---|---|---|
| Department of Aeronautical Engineering | | | |
| 1 | AE1 | Structures Lab | 61.555 |
| 2 | AE2 | Aerodynamic Lab | 167.002 |
| 3 | AE3 | Propulsion Lab | 306.072 |
| 4 | AE4 | Simulation Lab | 65.963 |
| 5 | AE5 | Design, Modeling & Analysis Lab | 65.963 |
| 6 | AE 6 (PG) | Aerodynamic Lab | 167.002 |
| 7 | AE7 (PG) | Propulsion Lab | 306.072 |
| Department of Aerospace Engineering | | | |
| 8 | AS1 | Aerospace Propulsion Lab | 130 |
| 9 | AS2 | Flight Simulator Lab | 66 |
| 10 | AS3 | Aerospace Structures Lab | 66 |
| 11 | AS4 | Design Modelling and Analysis Lab | 66 |
| 12 | AS5 | Computational Fluid Dynamics | 66 |
| 13 | AS6 | Aerodynamics Lab | 66 |
| Department of Chemical Engineering | | | |
| 14 | CH1 | Chemical Reaction Engineering Lab | 63.25 |
| 15 | CH2 | Process Control Lab | 63.24 |
| 16 | CH3 | Heat Transfer Lab | 167.002 |
| 17 | CH4 | Mass Transfer Lab | 64.24 |
| 18 | CH5 | Computer Application and Simulation Lab | 65.88 |
| 19 | CH6 | Mechanical Operations Lab | 62.45 |
| 20 | CH7 | | 63.54 |

| | | | |
|---|---|---|---|
| | | Instrumental Analysis and Pollution control Lab | |
| 21 | CH8 | Momentum Transfer Lab | 62.54 |
| 22 | CH9 | Engineering Technical chemistry lab | 65.32 |
| 23 | CH10 | Project and research | 63.54 |
| Department of Chemistry | | | |
| 24 | CHY1 | Engineering Chemistry Lab | 70 |
| 25 | CHY2 | Engineering Chemistry Lab | 70 |
| 26 | CHY3 | Chemistry Research lab | 66 |
| Department of Computer Science & Engineering | | | |
| 27 | CS1 | COMPUTER PROGRAM LAB1/ PROJECT LAB | 64.65 |
| 28 | CS2 | COMPUTER PROGRAM LAB2/PROJECT LAB | 64.65 |
| 29 | CS3 | EC/LD LAB | 65.628 |
| 30 | CS4 | MP and MC LAB/DBMS LAB | 69.225 |
| 31 | CS5 | Data Structure & C Lab | 65.179 |
| 32 | CS6 | Computer Networks Lab | 65.628 |
| 33 | CS7 | Machine Learning Lab | 65.628 |
| 34 | CS8 (PG) | Data Analytics Lab | 66 |
| 35 | CS9 (PG) | OS AND ADBMS Lab | 69.225 |
| Department of Civil Engineering | | | |
| 36 | CV1 | Concrete Lab | 98.97 |
| 37 | CV2 | Geotechnical Engineering Laboratory | 96.975 |
| 38 | CV3 | Survey Stores | 27.933 |
| 39 | CV4 | Environmental Engineering Lab | 65.179 |
| 40 | CV5 | Applied Engineering Geology Lab | 64.65 |
| 41 | CV6 | Computer Aided Design Lab | 64.65 |
| 42 | CV7 | Basic Material Testing Lab | 104.32 |
| 43 | CV8 | Hydraulics & Hydraulics Machinery Lab | 169 |

| | | | |
|---|---|---|---|
| 44 | CV9 (PG) | Structural Engineering Lab | 136.42 |
| 45 | CV10 (PG) | Highway Materials Testing lab | 98.97 |
| Department of Electronics & Communication Engineering | | | |
| 46 | EC1 | AEC and ADC Lab/LIC Lab | 102.4 |
| 47 | EC2 | Power Electronics Lab | 102.4 |
| 48 | EC3 | Logic Design Lab | 98 |
| 49 | EC4 | Computer Lab 1 | 103.6 |
| 50 | EC5 | Computer Lab 2 | 102.4 |
| 51 | EC6 | HDL/CCN Lab | 144 |
| 52 | EC7 | Signal Processing Lab | 66 |
| 53 | EC7 (PG) | DEC LAB | 62.1 |
| Department of Electrical & Electronics Engineering | | | |
| 54 | EE1 | Logic Design Lab | 64.991 |
| 55 | EE2 | Electrical Measurements and Control Systems Lab | 64.594 |
| 56 | EE3 | Relay & High Voltage Lab | 65.963 |
| 57 | EE4 | Power System Simulation Lab | 61.555 |
| 58 | EE5 | Power Electronics Lab | 65.257 |
| 59 | EE6 | DC Machines Lab | 104.321 |
| 60 | EE7 | Basic Electrical Lab | 126.546 |
| 61 | EE8 | Transformers and Generators Lab | 66 |
| Department of Information Science & Engineering | | | |
| 62 | IS1 | Design and Analysis of Algorithm, Computer Networks | 64.991 |
| 63 | IS2 | Analog & Digital Electronics Lab | 64.594 |

| | | | |
|---|---|---|---|
| 64 | IS3 | Data Structures, Micro Processor, Database Management System, Web Technology | 65.257 |
| 65 | IS4 | Machine Learning Lab | 64.594 |
| 66 | IS5 | Artificial Intelligence Lab | 64.594 |
| 67 | IS6 | Data Analytics Lab | 65.25 |
| Department of Mechanical Engineering | | | |
| 68 | ME1 | CAMD/CAMA Lab | 131.541 |
| 69 | ME2 | Design Lab | 62.192 |
| 70 | ME3 | CIM Lab | 65.963 |
| 71 | ME4 | Material Testing Lab | 104.321 |
| 72 | ME5 | CAED Lab | 131.393 |
| 73 | ME6 | Heat Mass Transfer Lab | 96.9 |
| 74 | ME7 | Machine Shop | 243.523 |
| 75 | ME8 | Energy Conversion lab | 127.783 |
| 76 | ME9 | Fluid Machinery Lab | 212.123 |
| 77 | ME10 | Workshop | 145.124 |
| 78 | ME11 | Foundry and forging lab | 145.92 |
| 79 | ME12 | Mechanical Measurement & Metrology Lab | 61.555 |
| 80 | ME13 | CNC & Robotics Lab | 27.563 |
| Department of Physics | | | |
| 81 | PHY | Engineering Physics -I | 110 |
| 82 | PHY | Engineering Physics -II | 110 |
| 83 | PHY | Research Lab | 30 |
| Department of AIML | | | |
| 84 | AIML | Artificial Intelligence Lab | 66 |
| 85 | AIML | Machine Learning Lab | 66 |
| Department of CSE(DS) | | | |
| 86 | CD | Data Visualization Lab | 66 |
| 87 | CD | Big Data Analytics Lab | 66 |

| Department of IOT | | | |
|---|---|---|---|
| 88 | IOT | IOT Lab | 70 |
| 89 | IOT | Computer Lab | 70 |
| Department of Computer Science and Design | | | |
| 90 | CSD | OO Design Pattern Lab | 66 |
| | | Total | 7659.239 |

Details of Central Library

| (a) Distribution of the area | | | |
|---|---|---|---|
| S. No. | Location | Area | |
| | | $m^2$ | $ft^2$ |
| 1 | UG Courses – Books Collection | 720 | 7746 |
| 2 | Reading Room Area | 170 | 1829 |
| 3 | MBA Collection | 210 | 2259 |
| 4 | PG Library & Periodical Collection | 200 | 2152 |
| 5 | Digital library and Project Reports | 300 | 3228 |
| | Total Carpet Area | 1600 | 17213 |
| | | Seating Capacity | 250 |

Details of Hostels

| S. No | Hostel Name | Floor | No. of Rooms | Capacity | Occupancy | Total |
|---|---|---|---|---|---|---|
| 1 | Boys Hostel - I | Ground Floor | 19 | 238 | 76 | 238 |
| | | First Floor | 21 | | 83 | |
| | | Second Floor | 20 | | 79 | |
| 2 | Boys Hostel - II | Ground Floor | 5 | 234 | 20 | 234 |
| | | First Floor | 23 | | 70 | |
| | | Second Floor | 24 | | 72 | |
| | | Third Floor | 24 | | 72 | |
| 3 | Girls Hostel | First Floor | 15 | 163 | 54 | 163 |
| | | Second Floor | 16 | | 55 | |
| | | Third Floor | 15 | | 54 | |
| | | Total | 182 | 635 | 588 | 635 |

## 8.3: Facility Requirement and Master Plan for Proposed MVJ University Building

The proposed MVJ University campus consists of different sections like

- Centre for Research
- University Administration Section
- Hostel Block
- General Amenities

The Centre for Research has various clusters like

- Mechanical Engineering Cluster
    - Mechanical Engineering
    - Chemical Engineering
    - Aeronautical Engineering
    - Aerospace Engineering

- Electrical and Electronics Engineering Cluster
    - Electrical and Electronics Engineering
    - Electronics and Communication Engineering

- Computer Science Engineering Cluster
    - Computer Science Engineering
    - Information Science Engineering

- Civil Engineering Cluster

- Basic Science Engineering Cluster
    - Physics
    - Chemistry
    - Mathematics

## 8.3.1: Department specific requirements under MVJ university

***Table 1:Department specific requirements***

| Sl No. | Cluster | Department | Requirement | Approx. area in Sq.m | Specialized requirement | Remarks |
|---|---|---|---|---|---|---|
| 1 | ME | CHEMICAL | Research Lab-Sophisticated Instruments Lab | 66 | Analytical Equipment Lab in Ground Floor with Air Conditioning Facility | This lab can be used by departments like CV, ME, Chemistry, Physics and AE for their research.<br>Can be used to provide testing facilities for outside students and consultancy purpose.<br>Require Heavy Duty Electrical line facility with a chemical disposal system. |
| | | CHEMISTRY | Lab and facilities can be shared from Chemical department. | | | |
| 2 | | AE/AS | UAV Lab | 130 | NA | To assemble the various components of the UAV or Drone models<br>To display the various assembled models in the lab |
| 3 | | | Astronomy Lab | 66 | NA | To set up the various model of telescope in the lab.<br>To display the various models of telescope which was made by the astronomy club members. |
| 4 | | | Flight training lab | 66 | Air Conditioning Facility | To set up the flight training lab with minimum of 30 computers along with Joystick, Rudder pedal and Thrust master pack.<br>To set up of a Virtual Reality Flight training lab for the Aeronautical students |
| 5 | | | Mini Runway for the RC plane | Can be calculated based on the specification of the RC Plane | Open Area | To provide the runway space for the take-off and landing of the RC Plane.<br>To provide space for the take-off and landing of the Drones. |
| 6 | | ME | Centre for Research on Polymer Composites | 90 | Should be in Ground Floor consisting of working | Centre for Research is proposed on Polymer Composites and focus will be on consultancy, |

| Sl No. | Cluster | Department | Requirement | Approx. area in Sq.m | Specialized requirement | Remarks |
|---|---|---|---|---|---|---|
| | | | | | Platform and bedding. | training, and Industrial support. |
| 7 | | | Discussion Room with board, Projector and training Centre | 66 | NA | Presentation on advanced topics, decision making and progress presentation |
| 8 | | | Staff Room | 33 | NA | To monitor any activity going on in the center. |
| 10 | EEE | ECE | IOT and Embedded Lab with 15 computers | 66 | Air Conditioning Facility | Current IOT lab is running with 15 sessions per week and fully occupied throughout the week. |
| 11 | | | Discussion Room with board, Projector and training centre | 66 | NA | Presentation on advanced topics, decision making and progress presentation |
| 12 | | | Discrete Laboratory | 66 | NA | To manufacture any electronics devices like Soldering Machines, 3D Printing, Microwave Equipment and Assembly line are required to connect software and hardware. |
| 13 | | | Staff Room | 33 | NA | To monitor any activity going on in the Centre |
| 14 | | EEE | Centre for Research on Electric Vehicles | 66 | Ground Floor for testing vehicles with wider entrance. | To provide paid internships, Certification courses, workshops, vocational courses for external candidates.<br>Further it will be extended for providing consultancy on Vehicle design and maintenance. |
| 15 | | | Project Display Hall for displaying various industry ready prototypes and models developed by Electrical and Electronics Engineering Department. | 33 | NA | This display hall will help to showcase students' and faculty competencies in product development.<br>During the visit of external resource persons to the campus for various events, it can be displayed to get the information and suggestions for further development and start-ups. |

| Sl No. | Cluster | Department | Requirement | Approx. area in Sq.m | Specialized requirement | Remarks |
|---|---|---|---|---|---|---|
| | | | | | | The list of prototypes will be updated every semester based on the reviews of external resources. |
| 16 | CSE | CSE | Research lab on AI consisting of 15 systems | 66 | NA | Faculty working on AI, Image Processing can utilize the facility and MATLAB can be added in the future.<br>This lab can be used by ISE also. |
| 17 | | CSE | Discussion Room with board, Projector and training centre | 33 | NA | Presentation on advanced topics, decision making and progress presentation |
| 18 | | ISE | IITB spoken tutorial extension lab consisting of around 100 systems and can be also used as Android Studio lab. | 195 | Air Conditioning Facility | State coordinator of IITB is contacted to conduct Training Programmes and certification courses for students.<br>Used to conduct any events and competitions for all circuit branches and training sessions. |
| 19 | CV | CV | Structural Dynamics Lab | 33 | Ground Floor with Bedding (Vibrating Table) | Collaboration with the Institution for research promotion, consultancy services on dynamic behavior of structures.<br>Also helps students to participate in technical forum and participation. |
| 20 | | | Advanced Geo Technical Lab | | | |
| 21 | | | Geo Informatics Lab (Instrumentation Lab) | 33 | Air Conditioning Facility | The lab consists of Mirror stereoscope with Binoculars and spatial data collection facilities with Aerial photo interpretation.<br>Helps to conduct skill enhancement and Vocational courses with the help of govt. and non-govt. bodies. |
| 22 | | | Advanced Transportation Engineering Lab | 45 | Air Conditioning Facility | Advanced equipment for Traffic Analysis and traffic simulation tools |
| 23 | | | Department computer Centre | | | Other software pertaining to all civil specializations can be used |

| Sl No. | Cluster | Department | Requirement | Approx. area in Sq.m | Specialized requirement | Remarks |
|---|---|---|---|---|---|---|
| 24 | | | Advanced Environmental and water resources lab | 66 | | Advanced research in hydrology, fluid mechanics and environmental modelling. |
| 25 | | | Centre Head Room and document office | 10 | NA | To monitor any activity going on in the Centre |
| 26 | | | Scholar Room | 15 | NA | For preparation and documentation work. |
| 27 | | | Discussion Room with board, Projector and training centre | 33 | NA | Presentation on advanced topics, decision making and progress presentation |
| 28 | MAT | Mathematics | Research lab - System lab (consisting of 5 to 10 systems) | 33 | NA | Research scholars can utilize the lab in areas of MATLAB. |
| 29 | PHY | Physics | R&D lab-Material Physics lab | 90 | NA | A new course on consultancy can be started. |
| 30 | | | Optical Lab (Laser Related instruments) | 66 | Dark Room | Research related to Lasers can be carried out. |
| 31 | | | Discussion Room with board, Projector and training centre | 33 | NA | For training programs and conducting competitions. |

8.3.2: Requirement and area of various department specific research centers based on different clusters:

***Table 2: Department specific requirements for Research***

| Sl No. | Floor | Cluster | Department | Facility | No. | Unit Area | Total area in Sq.m (Approx. ) |
|---|---|---|---|---|---|---|---|
| 1 | G | ME | CHEMICAL | Research Lab-Sophisticated Instruments Lab | 1 | 66 | 66 |
| 2 | | ME | AE/AS | UAV Lab | 1 | 130 | 130 |
| 3 | | ME | AE/AS | Astronomy Lab | 1 | 66 | 66 |
| 4 | | ME | AE/AS | Flight training lab | 1 | 66 | 66 |
| 5 | | ME | AE/AS | Mini Runway for the RC plane | 1 | | |
| 6 | | ME | ME | Centre for Research on Polymer Composites | 1 | 90 | 90 |
| 7 | | ME | ME | Discussion Room with board, Projector and training centre | 1 | 66 | 66 |
| 8 | | ME | ME | Staff Room | 1 | 33 | 33 |
| 10 | | EEE | ECE | IOT and Embedded Lab with 15 computers | 1 | 66 | 66 |
| 11 | | EEE | ECE | Discussion Room with board, Projector and training centre | 1 | 66 | 66 |
| 12 | | EEE | ECE | Discrete Laboratory | 1 | 66 | 66 |
| 13 | | EEE | ECE | Staff Room | 1 | 33 | 33 |
| 14 | G | EEE | EEE | Centre for Research on Electric Vehicles | 1 | 66 | 66 |
| 15 | | EEE | EEE | Project Display Hall for displaying various industry ready prototypes and models developed by Electrical and Electronics Engineering Department. | 1 | 33 | 33 |

| Sl No. | Floor | Cluster | Department | Facility | No. | Unit Area | Total area in Sq.m (Approx. ) |
|---|---|---|---|---|---|---|---|
| 16 | | CSE | CSE | Research lab on AI consisting of 15 systems | 1 | 66 | 66 |
| 17 | | CSE | CSE | Discussion Room with board, Projector and training centre | 1 | 33 | 33 |
| 18 | | CSE | ISE | IITB spoken tutorial extension lab consisting of around 100 systems and can be also used as Android Studio lab. | 1 | 195 | 195 |
| 19 | G | CV | CV | Structural Dynamics Lab | 1 | 33 | 33 |
| 20 | G | CV | CV | Advanced Geo Technical Lab | 1 | | |
| 21 | | CV | CV | Geo Informatics Lab (Instrumentation Lab) | 1 | 33 | 33 |
| 22 | | CV | CV | Advanced Transportation Engineering Lab | 1 | 45 | 45 |
| 23 | | CV | CV | Department computer centre | 1 | | |
| 24 | | CV | CV | Advanced Environmental and water resources lab | 1 | 66 | 66 |
| 25 | | CV | CV | Centre Head Room and document office | 1 | 10 | 10 |
| 26 | | CV | CV | Scholar Room | 1 | 15 | 15 |
| 27 | | CV | CV | Discussion Room with board, Projector and training centre | 1 | 33 | 33 |
| 28 | | MAT | Mathematics | Research lab - System lab (consisting of 5 to 10 systems) | 1 | 33 | 33 |
| 29 | | PHY | Physics | R&D lab- Material Physics lab | 1 | 90 | 90 |
| 30 | | PHY | Physics | Optical Lab (Laser Related instruments) | 1 | 66 | 66 |
| 31 | | PHY | Physics | Discussion Room with board, Projector and training centre | 1 | 33 | 33 |

***Table 3: Area requirements – Academic and Research***

| Cluster | | Area in Sq. m | Total Cluster Area in Sq. m |
|---|---|---|---|
| Mechanical Engineering Cluster | Mechanical Engineering | 189 | 517 |
| | Chemical Engineering | 66 | |
| | Aeronautical Engineering | 262 | |
| | Aerospace Engineering | | |
| Electrical and Electronics Engineering Cluster | Electrical and Electronics Engineering | 99 | 330 |
| | Electronics and Communication Engineering | 231 | |
| Computer Science Engineering Cluster | Computer Science Engineering | 99 | 294 |
| | Information Science Engineering | 195 | |
| Civil Engineering Cluster | Civil Engineering | 235 | 235 |
| Basic Science Engineering Cluster | Physics | 189 | 222 |
| | Chemistry | - | |
| | Mathematics | 33 | |

| | |
|---|---|
| Carpet Area Sq. m | 1598 |
| Circulation Area Sq. m | 1118.6 |
| Total Area Sq. m | 2716.6 |

### 8.3.4: University Administration Block:

The university block consists of various sections like office Accounts Department, Principal Room, exam section etc. This is a part of the administration cluster.

***Table 4: University Administration Block details***

| Sl No. | Floor | Cluster | Department | Facility | No. | Unit Area | Total area in Sq.m (Approx. ) |
|---|---|---|---|---|---|---|---|
| 1 | G | ADMIN | ADMIN | Reception | 1 | 40 | 40 |
| 2 | G | ADMIN | ADMIN | PRO | 1 | 30 | 30 |
| 3 | G | ADMIN | ADMIN | Principal | 1 | 60 | 60 |
| 4 | G | ADMIN | ADMIN | Director | 1 | 30 | 30 |
| 5 | | ADMIN | EXAM | Registrar | 1 | 20 | 20 |
| 6 | | ADMIN | EXAM | Controller of Examination | 1 | 60 | 60 |
| 7 | | ADMIN | ADMIN | Deans (Executive, Academics) | 2 | 20 | 40 |
| 8 | | ADMIN | EXAM | Exam Section | 1 | 60 | 60 |
| 9 | | ADMIN | EXAM | Valuation Centre | 1 | 150 | 150 |
| 10 | G | ADMIN | OFFICE | Accounts Department | 1 | 100 | 100 |
| 11 | | ADMIN | ADMIN | Board Room | 1 | 60 | 60 |
| 12 | G | ADMIN | GEN | Storeroom | 1 | 100 | 100 |
| 13 | G | ADMIN | GEN | Estate Officer | 1 | 20 | 20 |
| 14 | | ADMIN | OFFICE | Office Section 1 | 1 | 200 | 200 |
| 15 | | ADMIN | OFFICE | Office Section 2 | 1 | 150 | 150 |
| 16 | | ADMIN | ADMIN | Conference Hall | 1 | 150 | 150 |
| 17 | G | ADMIN | GEN | Security | 1 | 20 | 20 |
| 18 | G | ADMIN | GEN | House Keeping | 1 | 20 | 20 |
| 19 | G | ADMIN | GEN | Placement Office | 1 | 50 | 50 |
| 20 | | ADMIN | GEN | Pantry for Staff | 1 | 20 | 20 |
| | | | | | | Carpet Area Sq. m | **1380** |
| | | | | | | Circulation Area Sq. m | **966** |
| | | | | | | Total Area in Sq. m | **2346** |

### 8.3.5: Hostel Block:

The hostel block includes accommodation for UG and PG students. The details are shown below.

***Table 5: Hostel Block details***

| Sl No. | Floor | Cluster | Department | Facility | No. | Unit Area | Total area in Sq.m (Approx. ) |
|---|---|---|---|---|---|---|---|
| 52 | | Hostel | Quarters | Director | 1 | 200 | 200 |
| 53 | | Hostel | Quarters | Registrar | 1 | 180 | 180 |
| 54 | | Hostel | Quarters | Deans (Executive, Academics) | 2 | 160 | 320 |
| 55 | | Hostel | Quarters | Controller of Examination (Centre for Research) | 1 | 160 | 160 |
| 56 | | Hostel | Quarters | Teaching Faculty (Professor) | 6 | 120 | 720 |
| 57 | | Hostel | Quarters | Teaching Faculty (Asso.Professor) | 12 | 100 | 1200 |
| 58 | | Hostel | Quarters | Teaching Faculty (Asst.Professor) | 24 | 100 | 2400 |
| 59 | | Hostel | Quarters | Non-Teaching & Assistants | 18 | 90 | 1620 |
| 60 | | Hostel | Hostel | Boys - PG (100 Capacity) | 100 | 20 | 2000 |
| 61 | | Hostel | Hostel | Boys- UG (200 Capacity) | 200 | 20 | 4000 |
| 62 | | Hostel | Hostel | Boys - Research Scholar (50) | 50 | 2 | 100 |
| 63 | | Hostel | Hostel | International hostel (20 Capacity) | 50 | 20 | 1000 |
| | | | | | | Carpet Area Sq. m | 13900 |
| | | | | | | Circulation Area Sq. m | 9730 |
| | | | | | | Total Area Sq. m | 23630 |

## 8.3.6: General Amenities:

***Table 6: General Amenities Details***

| Sl No. | Facility | No. | Unit Area | Total area in Sq.m (Approx. ) |
|---|---|---|---|---|
| 1 | Guest Room 1 | 5 | 20 | 100 |
| 2 | Guest Room 2 | 10 | 10 | 100 |
| 3 | Auditorium | 1 | 2000 | 2000 |
| 4 | Cafeteria | 1 | 150 | 150 |
| 5 | Swimming Pool | 2 | 450 | 900 |
| 6 | Gym | 2 | 200 | 400 |
| 7 | Indoor Stadium | 2 | 600 | 1200 |
| 8 | Medical Centre | 1 | 60 | 60 |
| 9 | Sports Club | 1 | 200 | 200 |
| 10 | Playground - Football | 1 | 7140 | 7140 |
| 11 | Playground - Cricket+Football | 1 | 7660 | 7660 |
| 12 | Playground - Basketball | 1 | 428 | 428 |
| 13 | Playground - Skating+Basketball | 1 | 332 | 332 |
| 14 | Bank | 1 | 30 | 30 |
| 15 | Post Office | 1 | 20 | 20 |
| 16 | Shopping Complex | 1 | 100 | 100 |
| | Carpet Area Sq. m | | | **20820** |
| | Circulation Area Sq. m | | | **14574** |
| | Total Area Sq. m | | | **35394** |

## 8.3.7: Area Distribution

Total area distribution including various sections is as shown below.

***Table 7: General Amenities***

| Cluster | | Area in Sq. m | Total Cluster Area in Sq. m |
|---|---|---|---|
| Mechanical Engineering Cluster | Mechanical Engineering | 189 | 517 |
| | Chemical Engineering and Chemistry | 66 | |
| | Aeronautical Engineering | 262 | |
| | Aerospace Engineering | | |
| Electrical and Electronics Engineering Cluster | Electrical and Electronics Engineering | 99 | 330 |
| | Electronics and Communication Engineering | 231 | |
| Computer Science Engineering Cluster | Computer Science Engineering | 99 | 294 |
| | Information Science Engineering | 195 | |
| Civil Engineering Cluster | Civil Engineering | 235 | 235 |
| Basic Science Engineering Cluster | Physics | 189 | 222 |
| | Chemistry | 66* | |
| | Mathematics | 33 | |
| University Administration Block | | | 1370 |
| Total Build Area in Sq. m | | | 2968 |
| Circulation Area in Sq. m | | | 2077.6 |
| Total Area in Sq. m | | | 5045.6 |
| Total Area in Sq. feet | | | 54290.656 |
| Area of each floor in Sq. feet | | | 10800 |
| Number of Floors | | | 5 |
| Hostel Block in Sq. m | | | 13900 |
| Hostel Block in Sq. ft | | | 149564 |
| Hostel having each floor of 4000 Sq. ft area, No. of floors | | | 4 |
| General Amenities excluding playgrounds in Sq. m | | | 5260 |
| General Amenities excluding playgrounds in Sq. ft | | | 56597.6 |
| Total Build Area in sq. ft | | | 71397.6 |
| Total Build Area in Acres Excluding Playgrounds | | | 1.639 |
| Total Build Area in Acres Including Playgrounds | | | 5.4 |

# 9. CONCLUSION

In the pursuit of academic excellence and our commitment to delivering the highest standards of education, our esteemed engineering institute is starting on a transformative journey. This journey, guided by the visionary National Education Policy (NEP) of 2021, is aimed at achieving the coveted status of a university. The Institute Development Plan presented herein outlines our strategic vision for the next fifteen years, meticulously aligned with the principles and aspirations of NEP 2021.

India's technical education landscape is at a crucial juncture. The country's economic growth and innovation are inextricably linked to the quality and relevance of our technical institutions. NEP 2021 has led the way in a new era, emphasizing multidisciplinary education, flexibility, and global competitiveness. Our plan recognizes the evolving demands of the Indian job market, the need for technological innovation, and the importance of nurturing well-rounded engineers capable of addressing complex societal challenges.

Effective governance is the cornerstone of any institution's success. Our governance plan outlines a dynamic framework that ensures transparency, accountability, and inclusivity. It establishes clear lines of responsibility and authority, with a focus on faculty and student participation in decision-making processes. The plan also details strategies for fostering a culture of innovation and continuous improvement, in line with NEP 2021's vision of responsive and forward-looking institutions. In conclusion, our Institute Development Plan is a testament to our unwavering dedication to transforming our engineering institute into a university of global repute. It embodies the progressive spirit of NEP 2021, striving for academic excellence, research innovation, and societal impact.