**A Detailed Project Report**
**for the Deemed to be University Status**
**under Distinct Category (Existing)**
**as per Clause 7(2) of the UGC Regulations 2023**

# TKR
# DEEMED TO BE
# UNIVERSITY

**Under Distinct Category**

**2026**

# Index

# List of Tables

# Introduction

**TKR Deemed to be University (TKRDU)** is proposed as a multidisciplinary, research-intensive institution conceived to operationalize national priorities articulated in the Preface through integrated education, research, innovation, entrepreneurship, and industry engagement. The proposed university represents the academic consolidation and advancement of existing Engineering, Diploma (Polytechnic), Pharmacy, and Management institutions under a unified governance and academic framework, enabling deeper interdisciplinary integration, enhanced academic autonomy, and long-term institutional sustainability.

The proposed university is structured to respond to India's evolving technological, industrial, healthcare, and business landscape by embedding multidisciplinary learning, research-led education, skill development, and digital enablement across its academic programs. Its academic model emphasizes convergence among engineering sciences, applied sciences, pharmaceutical sciences, management studies, and skill-oriented diploma programs, fostering a comprehensive and integrated understanding of technology, industry, healthcare support systems, entrepreneurship, and sustainable development.

In alignment with national digital priorities, **TKRDU** integrates digital public infrastructure into its academic and research ecosystem, including smart classrooms, advanced engineering laboratories, modern workshops, pharmaceutical laboratories, digital simulation platforms, business analytics environments, and technology-enabled teaching and learning systems. These systems are designed with due emphasis on data governance, cyber security, ethical use of emerging technologies, and regulatory compliance, ensuring institutional readiness for large-scale technical, pharmaceutical, and management education, research, and innovation.

The university's research and innovation framework is oriented toward nationally relevant, industry-driven, and socially impactful initiatives, addressing priority areas such as smart manufacturing, renewable energy systems, artificial intelligence, robotics, pharmaceutical formulation and quality assurance, healthcare technologies, business analytics, entrepreneurship development, sustainable infrastructure, and digital transformation. **TKRDU** is positioned to leverage advanced technologies, including artificial intelligence, decision-support systems, advanced analytics, automation technologies, and emerging digital tools, where appropriate, to strengthen research capability, professional training, and technology-driven solutions across disciplines.

A defining academic feature of **TKRDU** is the integration of theoretical knowledge with practical skill development and industry-oriented learning within a rigorous, evidence-based, and regulatory-compliant framework. This integrative approach supports innovation-driven education, promotes interdisciplinary collaboration, and contributes to the development of solutions that are technologically advanced, economically viable, socially responsible, and environmentally sustainable. Complementing this is the adoption of sustainability- and entrepreneurship-focused perspectives, recognizing the interconnections between technology, healthcare support systems, industry, management, and societal well-being, which are embedded across curricula, research initiatives, and outreach activities.

Through flexible curricular structures, interdisciplinary learning, research-embedded teaching, hands-on training, and strong industry and institutional partnerships, **TKRDU** aims to develop a future-ready workforce equipped with technical competence, professional skills, managerial capabilities, digital literacy, innovation mindset, ethical grounding, and social responsibility. Diploma programs will emphasize skill-based and industry-ready training, engineering

programs will focus on technological innovation and research, pharmacy programs will strengthen pharmaceutical sciences and healthcare support systems, and management programs will cultivate leadership, entrepreneurship, and strategic decision-making skills.

The proposed university is envisioned as a knowledge hub, innovation platform, and industry-engaged academic ecosystem, contributing to national development goals such as **Skill India, Digital India, Make in India, Startup India, and Viksit Bharat @2047**. By fostering multidisciplinary collaboration across engineering, pharmacy, diploma, and management domains, **TKRDU** seeks to address emerging workforce needs, promote technological advancement, strengthen pharmaceutical and healthcare support systems, and enhance entrepreneurial ecosystems.

With its multidisciplinary education and research experience spanning several decades, the sponsoring organization intends to combine the academic, technical, pharmaceutical, and management resources of its multiple colleges into **TKRDU**, and seeks its declaration as an **Institution Deemed to be a University under the "Distinct Category (Existing)"**, in accordance with the **UGC (Institutions Deemed to be Universities) Regulations, 2023**. This Detailed Project Report demonstrates the university's academic maturity, governance preparedness, research capability, infrastructure strength, and financial sustainability, positioning **TKRDU** as a multidisciplinary, digitally enabled, and industry-integrated institution capable of translating national priorities into measurable academic, technological, managerial, and societal outcomes.

The DPR is structured around three main chapters: **Chapter I** details the sponsoring body's rich legacy, including its aims, objectives, core values, research strengths, societal impact, and governance structure across Engineering, Diploma (Polytechnic), Pharmacy, and Management institutions under the TKR group. **Chapter II** outlines the vision of the proposed university as a multidisciplinary, research- and skill-intensive academic ecosystem aligned with **NEP 2020** and national priorities including **Viksit Bharat @2047**, integrating engineering, pharmaceutical sciences, management education, and skill-based diploma programs with advanced digital technologies. It presents the academic structure, infrastructure plan, faculty development strategy, UG–PG–Diploma–PhD programs, and the **2026–2030 financial roadmap**, demonstrating a clear pathway to address skill gaps, industry requirements, pharmaceutical sector needs, and India's digital and industrial transformation through education, research, innovation, and community engagement. **Chapter III** presents the projected outputs and outcomes of the proposed university.

# CHAPTER 1
# THE SPONSORING BODY

## Introduction

**TKR Educational Society**, registered under the **Registration of Societies, Government of Andhra Pradesh**, vide **Registration No. 6490/2001**, was established on **24 September 2001** with the objective of promoting quality education in technical, professional, and management disciplines. The Society represents a distinguished not-for-profit educational organization dedicated to advancing technical education, professional learning, research, innovation, and community development, particularly for students from rural and semi-urban regions.

The institutions under **TKR Educational Society** were founded by visionary educationists and academic leaders who recognized the growing need for accessible, high-quality technical and professional education to support India's industrial growth and knowledge-based economy. Guided by a strong commitment to academic excellence, innovation, and social responsibility, the Society conceptualized an integrated educational ecosystem that combines teaching, research, skill development, and industry interaction, thereby enabling students to acquire professional competence and practical skills required in modern industries and organizations.

As per the provisions of its registered bye-laws, the **Governing Body of TKR Educational Society** constitutes the supreme authority responsible for policy formulation, institutional development, and long-term strategic planning of the Society and its constituent institutions. The overall management and day-to-day administration of the Society and its affiliated institutions rest with the **Secretary**, functioning under the guidance of the Governing Body, supported by a **Management Committee** constituted in accordance with the relevant statutory provisions and guidelines of regulatory authorities such as the **All India Council for Technical Education (AICTE)**, **Pharmacy Council of India (PCI)**, **University Grants Commission (UGC)**, and other competent bodies governing higher and professional education in India. This governance framework ensures transparency, accountability, effective administration, and sustained institutional growth.

Building upon its foundational vision, **TKR Educational Society** has progressively expanded its academic initiatives to establish institutions offering undergraduate, postgraduate, and diploma-level programs in engineering, pharmaceutical sciences, management studies, and technical education. Over the years, the Society has developed a structured academic model that integrates classroom instruction with laboratory practice, industrial exposure, research orientation, and professional development, thereby fostering a holistic learning environment that supports intellectual growth and career readiness.

As part of its commitment to community engagement and social development, the institutions under the Society have actively undertaken outreach initiatives such as skill development programs, technical awareness activities, entrepreneurship development workshops, and community-oriented educational programs. These initiatives have contributed to enhancing employability, technological literacy, and entrepreneurial capacity among youth, particularly in underserved communities, thereby strengthening regional socio-economic development.

With a clear emphasis on institutional growth, sustainability, and academic excellence, **TKR Educational Society** has continuously strengthened its governance systems, academic infrastructure, faculty development initiatives, and industry collaborations. Modern laboratories, advanced workshops,

pharmaceutical laboratories, digital learning systems, innovation centers, and industry-linked training programs have been established to support quality education and applied research across disciplines including engineering, pharmacy, diploma-level technical education, and management studies.

Collectively, the institutions under **TKR Educational Society** represent more than two decades of sustained commitment to education, skill development, and professional excellence. The Society's multidisciplinary academic framework reflects a forward-looking vision that emphasizes integration across engineering, pharmaceutical sciences, management education, and skill-based diploma programs. This multidisciplinary approach supports the development of competent professionals capable of addressing contemporary industrial, technological, pharmaceutical, and business challenges.

Building on this strong academic legacy, the leadership of **TKR Educational Society** has articulated a strategic vision to transform its existing institutions into a multidisciplinary, technology-enabled, and research-oriented university ecosystem under **TKR to be Deemed University**. This vision emphasizes the integration of engineering innovation, pharmaceutical technologies, management practices, applied sciences, and emerging digital technologies such as artificial intelligence, data analytics, automation, and digital platforms. Such integration is expected to enhance academic quality, promote interdisciplinary collaboration, and foster innovation-driven learning and research.

**TKR Educational Society** is rooted in a strong tradition of educational service, academic integrity, and technological advancement. The Society's sustained growth since its establishment in **2001** demonstrates that the proposed **TKR to be Deemed University** is not a newly conceived initiative but rather an organic evolution of a well-established and recognized educational ecosystem. This long-standing institutional presence provides strong assurance of governance capability, academic maturity, and alignment with national educational priorities, thereby strengthening the credibility of the proposal and supporting its long-term sustainability.

Education has remained one of the central objectives of **TKR Educational Society**, guiding its expansion and academic diversification over the years. Through continuous investment in infrastructure, faculty development, research promotion, and student support systems, the Society has enhanced its institutional capacity to deliver high-quality education across disciplines. The collective efforts of the Society members continue to carry forward the founders' vision toward establishing a multidisciplinary university ecosystem that supports innovation, entrepreneurship, research excellence, and societal development for the betterment of future generations.

## 1.1 TKR Educational Society

TKR Educational Society is rooted in a strong tradition of dedication to educational service, academic excellence, professional learning, and technological advancement in India. This section establishes the institutional credibility and foundational strength of the sponsoring body and its constituent institutions under the TKR group. Over the years, the Society has consistently upheld its commitment to delivering quality technical and professional education, promoting innovation-driven learning, and supporting regional development through education and skill enhancement initiatives.

## 1.2 Genesis and Origin of the Society

TKR Educational Society was established in **2001** by visionary educationists and social leaders with a strong commitment to expanding access to quality technical and professional education. The founders recognized the growing national demand for skilled professionals in engineering, pharmaceutical sciences, management, and technical education, particularly among students from rural and semi-urban regions who required access to structured, industry-relevant academic opportunities.

The founders were guided by a philosophy rooted in service to society through education, recognizing that knowledge and technical skills serve as powerful tools for individual empowerment and national development. Their vision emphasized the importance of creating sustainable educational institutions capable of nurturing technical competence, professional ethics, innovation, and social responsibility among students. This guiding philosophy laid the foundation for the systematic development of institutions that integrate academic learning with practical exposure, research orientation, and industry engagement.

TKR Educational Society was formally registered under the **Registration of Societies, Government of Andhra Pradesh**, vide **Registration No. 6490/2001**, and has since functioned as a not-for-profit educational organization committed to advancing higher education across multiple professional disciplines. The sustained growth and institutional expansion achieved since its establishment demonstrate that the proposed **TKR Deemed to be University** represents an organic evolution of a well-established and government-recognized educational ecosystem, rather than a newly initiated endeavor.

The Society's continued presence and progressive institutional development over more than two decades provide strong assurance of governance capability, academic maturity, and adherence to regulatory and statutory requirements. This long-standing institutional continuity strengthens the credibility of the proposal and reflects the Society's alignment with national educational priorities, technological advancement goals, and workforce development initiatives.

Education has remained one of the central and most valued objectives of TKR Educational Society since its inception. Over the years, this commitment has gained sharper focus through the collective efforts of the Society's leadership, faculty, and stakeholders, who have consistently worked toward fulfilling the founders' vision of delivering accessible, quality-driven technical and professional education. Through sustained dedication and strategic institutional planning, the Society continues to expand its academic initiatives and strengthen its role in contributing to national development and societal progress through education.

### Table 1.1 Profile of Founding members of the TKR Educational Society (TKRES)

| S. No. | Name | Role in TKRES | Year of Association | Professional Background | Legacy & Key Contributions |
|---|---|---|---|---|---|
| 1 | Shri.Teegala Krishna Reddy s/o. Ram Reddy | Chairman | 2001 | Former Mayor of Hyderabad, Ex.MLA Maheswaram | Founder Chairman of TKRES; Visionary leader instrumental in establishing and expanding educational institutions under TKRES; Played a key role in infrastructure development and academic growth. |
| 2 | Mrs. T.Arundhati W/o. T.Krishna Reddy | Vice Chairman | 2001 | Educationist and Administrator | Contributed significantly to administrative planning and institutional development; Supported academic and student welfare initiatives across TKRES institutions. |
| 3 | Dr. T.Harinath Reddy S/o. T. Krishna Reddy | General Secretary | 2001 | Academician and Administrator | Actively involved in academic planning, institutional governance, and modernization of facilities; Promoted quality education and research activities. |
| 4 | Mr. T. Amarnath Reddy S/o. T. Krishna Reddy | Treasurer | 2001 | Administrator and Financial Manager | Oversees financial planning and resource management; Strengthened financial sustainability and infrastructure expansion of institutions. |
| 5 | Mrs. T. Tulasi W/o. T. Amarnath Reddy | Joint Secretary | 2001 | Educationist and Institutional Administrator | Supports administrative coordination and institutional activities; Contributes to student support systems and institutional welfare initiatives. |

## 1.3 Aims and Objectives of TKR Educational Society

The primary aims and objectives of **TKR Educational Society** are centered on promoting quality education, advancing professional learning, strengthening research and innovation, and contributing to societal development through technical and professional education. The Society operates as a **non-profit educational organization** committed to academic excellence, skill development, and knowledge dissemination across multiple disciplines.

The following objectives guide the functioning and long-term institutional development of the Society:

1. To establish, manage, and operate educational institutions as non-profit centers of learning dedicated to providing quality technical, professional, and management education.
2. To undertake, promote, and support academic and research activities that contribute to the advancement of engineering sciences, pharmaceutical sciences, management studies, applied sciences, and technical education.

3. To establish, develop, and maintain institutions offering diploma, undergraduate, postgraduate, and research programs in engineering, pharmacy, management, and allied professional disciplines, with emphasis on academic excellence and industry relevance.
4. To create and strengthen laboratories, workshops, research centers, innovation hubs, and technology-enabled learning environments equipped with modern infrastructure necessary for teaching, training, and applied research.
5. To provide opportunities for skill development, practical training, and professional education through industry collaboration, internships, project-based learning, and technical training programs.
6. To promote research, innovation, entrepreneurship, and technology development through the establishment of research laboratories, incubation centers, and collaborative platforms with academic and industrial organizations.
7. To facilitate academic collaboration and exchange of knowledge with universities, research organizations, industries, and professional bodies in India and abroad, thereby enhancing academic quality and global exposure.
8. To institute scholarships, fellowships, awards, stipends, and other academic incentives to support meritorious students, encourage innovation, and promote research excellence across disciplines.
9. To contribute to community development through outreach initiatives such as technical awareness programs, entrepreneurship development activities, skill-based training programs, and educational support services, particularly for students from rural and semi-urban regions.
10. To ensure effective governance, transparent administration, and continuous quality improvement in all institutional activities, in accordance with regulatory requirements and national educational policies.

These objectives collectively guide the Society in fulfilling its mission of delivering accessible, industry-relevant, and innovation-driven education that contributes to national development and workforce readiness.

## Core Values of TKR Educational Society

The institutional philosophy of TKR Educational Society is founded upon a set of core values that guide its academic, administrative, and societal engagements. These values reflect the Society's commitment to quality education, ethical governance, and continuous institutional development.

1. **Excellence:**
   A steadfast commitment to achieving academic excellence through high-quality teaching, innovative learning practices, research-driven education, and continuous improvement in institutional performance.
2. **Integrity:**
   Upholding transparency, accountability, ethical conduct, and professional responsibility in all academic, administrative, and governance processes.
3. **Innovation:**
   Fostering a culture of creativity, research, and technological advancement by encouraging the adoption of emerging technologies, interdisciplinary learning, and solution-oriented thinking.
4. **Student-Centric Learning:**
   Promoting an inclusive and supportive academic environment that prioritizes student development, practical learning, professional competence, and lifelong learning.
5. **Community Engagement:**

Actively contributing to societal development through outreach programs, skill development initiatives, entrepreneurship promotion, and educational support activities for underserved communities.

6. **Lifelong Learning:**
   Encouraging continuous learning, professional growth, and knowledge enhancement among students, faculty, and staff, thereby fostering adaptability to evolving technological and industrial environments.

## Milestones in the Development of TKR Educational Society

The development of **TKR Educational Society** reflects a steady and strategic progression in establishing institutions across engineering, management, pharmacy, and diploma-level technical education. Since its establishment in **2001**, the Society has consistently expanded its academic footprint to address the growing demand for quality technical and professional education, particularly in emerging industrial and professional sectors.

The major milestones in the institutional growth of TKR Educational Society are outlined below:

**2001 :** Establishment of **TKR Educational Society**, registered under the Registration of Societies, Government of Andhra Pradesh (Registration No. 6490/2001), with the objective of promoting quality technical and professional education.

**2002 :** Establishment of **TKR College of Engineering & Technology**, marking the Society's entry into professional engineering education and laying the foundation for multidisciplinary technical education initiatives.

**2003 :** Establishment of **TKR Institute of Management and Science**, expanding academic offerings into management and professional education to support leadership development and business-oriented learning.

**2005 :** Establishment of **Teegala Krishna Reddy Engineering College**, strengthening engineering education capacity and expanding opportunities for students pursuing technical disciplines.

**2007 :** Establishment of **Teegala Krishna Reddy College of Pharmacy**, introducing pharmaceutical education programs to support the growing demand for professionals in pharmaceutical sciences and healthcare support sectors.

**2009 :** Establishment of **TKR College of Engineering & Technology – Diploma (Polytechnic)**, initiating skill-based diploma education aimed at strengthening technical training and industry-ready workforce development.

These milestones collectively demonstrate the systematic expansion and academic diversification of TKR Educational Society across multiple professional disciplines. The progressive establishment of institutions over the years reflects the Society's sustained commitment to strengthening technical education, promoting professional excellence, and contributing to regional and national development.

The cumulative institutional growth achieved through these milestones has laid a strong foundation for the proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)**, representing the natural academic consolidation of the Society's multidisciplinary institutions under a unified governance and academic framework.

## 1.4 Overview of the Activities of TKR Educational Society

The core activities of **TKR Educational Society** encompass teaching, skill development, research, innovation, and extension services in the fields of engineering, technology, management, pharmaceutical sciences, and diploma-level technical education. The Society has consistently focused on delivering quality education at undergraduate, postgraduate, and diploma levels, along with fostering research and industry-oriented skill development initiatives.

Teaching at undergraduate and postgraduate levels across engineering, management, and pharmaceutical sciences is carried out through well-structured academic programs designed to meet contemporary industry requirements. In addition to academic instruction, the Society actively promotes laboratory-based learning, project-based education, internships, and industry interaction to enhance practical knowledge and employability skills among students.

The Society also undertakes various extension activities, including technical training programs, skill development workshops, industry collaboration initiatives, and community-oriented programs aimed at promoting technical awareness and innovation among students and society at large.

### Core Research Strengths and Ongoing Academic Initiatives

TKR Educational Society places strong emphasis on applied research, innovation, and industry-oriented development activities that address real-world technological challenges and societal needs. The research philosophy of the Society focuses on translating theoretical knowledge into practical applications through design, development, testing, and implementation of technological solutions.

The consistent emphasis on industry-linked research and student-driven innovation reflects a commitment to creating a dynamic academic ecosystem that supports technological advancement and entrepreneurship. The institutional laboratories and innovation centers function as practical learning environments where students and faculty collaboratively engage in the development of prototypes, models, and solutions addressing engineering and technological challenges.

The current academic and research initiatives of TKR Educational Society include projects related to emerging areas such as computer science and information technology applications, electronics and communication systems, mechanical and civil engineering design solutions, pharmaceutical formulation and analysis, and management-based research in business analytics and entrepreneurship development.

Faculty members across various institutions under the Society actively participate in funded research projects, consultancy activities, and collaborative programs with academic institutions, industries, and professional organizations. These activities contribute significantly to strengthening the research culture and enhancing the academic quality of the institutions.

TKR Educational Society has also taken initiatives to strengthen research capacity by promoting faculty

development programs, student innovation projects, technical symposiums, and workshops in areas such as research methodology, data analysis, emerging technologies, and industry-relevant skill development. Institutional laboratories and research facilities support project-based learning and facilitate interdisciplinary collaboration among students and faculty members.

The progressive development of research and innovation activities within the Society has laid a strong academic foundation for the establishment of **TKR DEEMED TO BE UNIVERSITY (TKRDU)**, envisioned as a multidisciplinary institution fostering advanced research, innovation, and knowledge dissemination aligned with national development priorities.

### Table 1.2 Major Research & Projects Data

| S. No | Project Title | Duration | Estimated Population Covered | Budget | Funding Agency | Key Impact |
|---|---|---|---|---|---|---|
| 1 | EEE MODROBS | 2010–11 | 1200 Students per year | 12.8 L | AICTE (Ref No. 8024/RIFD/MOD-304/2010-11) | Strengthened electrical laboratories and enhanced practical learning for engineering students. |
| 2 | Determination of MFIS on CoNiAl FSMAs for Sensors and Actuators | 2012–15 | 500 Students & Researchers | 17.04 L | DST SERB, New Delhi | Advanced research in smart materials supporting sensor and actuator development. |
| 3 | Effect of Composition on Elastic Moduli for CoNiAl System | 2015–16 | 150 Researchers | 1.46 L | UGC Travel Grant | Facilitated collaborative research and dissemination of advanced material science knowledge. |
| 4 | Development of Mobile Air Conditioner with Eco-friendly Refrigerant R134a | 2020–21 | 300 Students & Industry Users | 3 L | TEQIP-III, JNTUH | Promoted eco-friendly cooling solutions and sustainable engineering practices. |

| | | | | | | |
|---|---|---|---|---|---|---|
| 5 | Five-Day FDP on 3D Printing and Design | 2020–21 | 200 Faculty & Students | 0.93 L | AICTE, New Delhi | Enhanced faculty competency in additive manufacturing and product design technologies. |
| 6 | Automatic Diagnostic Model for Detection of Malaria Parasites from Microscopic Images | 2020–21 | 10,000 Patients (Indirect) | 2.98 L | TEQIP-III, JNTUH | Enabled faster and accurate malaria diagnosis using image processing techniques. |
| 7 | Minimalistic Approach to Predict Cardiovascular Diseases | 2020–21 | 8,000 Patients (Indirect) | 2.6 L | TEQIP-III, JNTUH | Supported early identification of cardiovascular risks through predictive analytics. |
| 8 | Quality of Signal Improvement in GNRFET-based Ternary Logic System | 2021–23 | 400 Researchers & Students | 13.464 L | DST SERB, New Delhi | Contributed to next-generation semiconductor and integrated circuit design research. |
| 9 | Unmanned Surface Vehicle for Defense and Civilian Application | 2 Years | 5,000 Users (Defense & Civil) | 20 L | MSME | Developed autonomous navigation systems for surveillance and water operations. |
| 10 | Smart Wearables for Rescuers and Victims | 2 Years | 3,000 Rescue Personnel | 8 L | MSME | Improved safety monitoring and emergency response through wearable technologies. |
| 11 | AI-Driven Drowsiness | 2 Years | 12,000 Drivers | 15 L | MSME | Enhanced road safety by |

| | | | | | | |
|---|---|---|---|---|---|---|
| | Detection System | | | | | preventing accidents through fatigue detection systems. |
| 12 | Chips to Startup Programme | 3 Years | 100 Users | 1 Cr | MeiTY, Government of India | Fostering Next Generation Capabilities Among Chip Designers For Making India Self-Reliant In Electronics System Design |
| **13** | **Flow Master** | **2 Years** | **6,000 Farmers** | **12 L** | **MSME 5.O** | **Smart Agriculture** |
| **Startups established under TKRCET R&D** | | | | | | |
| **S. No.** | **Name of the Startup** | **Duration** | **Number of Beneficiaries** | **Amount** | **Funding Agency** | **Key Impact** |
| 1 | Unmanned Surface Vehicle | 1 Year | 4,000 Users | 13.98 L | DRDO, TSIC | Strengthened defense surveillance and marine automation capabilities. |
| 2 | Drive Care System | 1 Year | 15,000 Drivers | 25 L | IIT Hyderabad | Improved driver health and vehicle monitoring through intelligent safety systems. |
| 3 | MOBINAV | 1 Year | 7,000 Users | 10 L | IIT Hyderabad | Enabled smart navigation and mobility solutions for urban transport systems. |
| 4 | Longer Range Communication System | 1 Year | 20,000 Users | 6 L | IIT Hyderabad | Improved long-distance communication reliability in |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | remote areas. |
| 5 | Agricultural Rover | 6 Months | 6,000 Farmers | 15 L | Government of Maharashtra | Promoted smart agriculture through automated farming and field monitoring technologies. |
| 6 | Ament Capital | 2 years | 5 | 14.4 L | Self | Software Development |
| **Consultancy Projects under TKRCET R&D** | | | | | | |
| S. No. | Name of the Consultancy | Title of the project | Duration | Number of Beneficiaries | Amount | Key Impact |
| 1 | Wind Stream Energy Technologies India Pvt. Ltd. | Synchronous Reluctance Motor Design and Development with Pulse Regulatory Module for Motor Operation | 3 Years | 3 Departments (ECE, EEE, CSE) | 16.6 L | Optimize performance characteristics through advanced material selection, geometry design, and rotor-stator configuration. |
| 2 | REVON UNMANNED SYSTEMS | Development of an Indigenous carbon epoxy composite fibre sheets and pipes for USVs | 2 Years | 7 Departments (ECE, EEE, CSE, CSM, CSD, IT and CIVIL) | 5.5 L | Design and development of an Indigenous carbon epoxy composite fibre sheets and pipes for USVs. |

**Key Institutional Insights and Strategic Strengths of TKR Educational Society**

- The institutional framework of **TKR Educational Society** reflects a sustained commitment to academic excellence, skill development, research, and community-oriented initiatives over more than two decades since its establishment in **2001**. The Society's progressive expansion across engineering, management, pharmaceutical sciences, and diploma-level technical education demonstrates a long-term vision focused on academic quality, technological advancement, and societal development.

- Over the years, the institutions under TKR Educational Society have collectively served a large and diverse student population, supporting learners from varied socio-economic backgrounds and promoting inclusive access to professional education. The multidisciplinary academic environment supports students across multiple domains of engineering, management, and pharmacy, thereby strengthening the overall academic ecosystem.

- A strong emphasis on foundational technical education, skill-based learning, and professional development is evident through the establishment of specialized laboratories, workshops, and training programs designed to meet emerging industry requirements. These initiatives align closely with national priorities in skill development, innovation, and employability enhancement.

- Collaborative initiatives with industries, professional bodies, and academic institutions have enhanced institutional credibility and strengthened the practical orientation of academic programs. Industry interactions, internships, and training partnerships contribute significantly to bridging the gap between academic learning and real-world application.

- Several institutional initiatives have contributed to the development of innovative teaching methodologies, project-based learning models, and applied research practices that address technological and industrial challenges. These initiatives support the development of solutions relevant to manufacturing, infrastructure development, information technology, and pharmaceutical applications.

- Strong engagement with national educational policies, regulatory frameworks, and accreditation processes reflects the Society's commitment to quality assurance, transparency, and continuous institutional improvement. The adoption of modern teaching technologies, digital learning platforms, and outcome-based education methodologies further strengthens academic delivery systems.

- The institutional ecosystem integrates teaching, research, innovation, and community engagement through technical workshops, awareness programs, skill development initiatives, and outreach activities. These programs promote knowledge dissemination and technical awareness among students and the broader community.

- Many academic and research initiatives emphasize practical implementation and industry relevance, reinforcing the Society's role in preparing technically competent professionals capable of addressing contemporary industrial and societal challenges.

Overall, the academic and institutional portfolio of **TKR Educational Society** positions it as a regionally significant, academically credible, and socially responsible educational organization aligned with national educational priorities, including the objectives of the **National Education Policy (NEP)** and regulatory expectations of higher education authorities. This strong institutional foundation supports the proposed establishment of **TKR DEEMED TO BE UNIVERSITY (TKRDU)** as a multidisciplinary institution committed to excellence in education, research, and innovation.

## Summary of Research, Innovation, and Community-Oriented Projects

The institutional framework of **TKR Educational Society** includes a comprehensive portfolio of

academic, research, innovation, and community-oriented initiatives undertaken across its constituent institutions over the past two decades. These initiatives span engineering, technology, management, pharmaceutical sciences, and technical skill development, demonstrating strong alignment with national priorities in technological advancement, industrial development, and skill enhancement.

The academic and research initiatives undertaken by the institutions focus on emerging and interdisciplinary areas such as information technology applications, electronics and communication systems, civil and mechanical engineering design solutions, pharmaceutical formulation and analytical research, and management-oriented studies in entrepreneurship, operations, and business analytics. These initiatives reflect a sustained commitment to strengthening research culture, promoting innovation, and enhancing the practical competencies of students and faculty members.

Collectively, these initiatives have engaged large and diverse student groups through project-based learning, laboratory experimentation, industrial training, internships, and technical development programs. The projects range from student-driven innovation models to faculty-led applied research studies addressing real-world industrial and societal challenges. The emphasis on experiential learning ensures that students gain hands-on exposure to contemporary technologies and professional practices.

The research and innovation ecosystem within TKR Educational Society is further strengthened through collaboration with industries, professional organizations, and academic partners. These collaborations support consultancy services, industry-sponsored projects, training programs, and joint academic initiatives, thereby enhancing institutional credibility and strengthening industry relevance.

Many academic and innovation-driven projects have contributed to the development of practical models, prototypes, and solutions relevant to industrial automation, infrastructure development, digital technologies, and pharmaceutical applications. These outcomes support the broader objective of translating academic knowledge into implementable solutions that address technological and societal needs.

Overall, the portfolio of research, innovation, and community-oriented initiatives positions **TKR Educational Society** as an academically progressive and socially responsible educational organization aligned with national educational priorities, including the objectives of the **National Education Policy (NEP)** and regulatory expectations for higher education institutions. This strong foundation supports the proposed establishment of **TKR DEEMED TO BE UNIVERSITY (TKRDU)** as a multidisciplinary institution dedicated to excellence in education, research, innovation, and community engagement.

### 1.5 Impact of the Sponsoring Body on the Societal Fabric of the Region

**TKR Educational Society** has played a transformative role in strengthening the educational landscape and socio-economic development of the region since its establishment in **2001**. Through its network of professional institutions across engineering, management, pharmacy, and diploma education, the Society has been instrumental in fostering skilled professionals, promoting innovation, and enhancing employability among youth from diverse socio-economic backgrounds.

The institutions under TKR Educational Society have contributed significantly to the development of technically competent professionals who support various industrial and service sectors such as information technology, manufacturing, construction, pharmaceuticals, and business management. By nurturing

academic excellence and promoting industry-oriented education, the Society has strengthened the availability of trained manpower required for regional and national development.

During challenging periods such as the **COVID-19 pandemic**, the institutions demonstrated resilience and social responsibility by adopting digital learning platforms and ensuring continuity of academic activities without interruption. Faculty members and institutional teams actively supported students through online teaching, academic mentoring, and awareness initiatives, thereby safeguarding the academic progress of students during an unprecedented global crisis.

The consistent expansion of institutions under the Society has created substantial employment opportunities for qualified teaching and non-teaching staff, thereby contributing to regional job generation and professional development. In addition to direct employment, the Society has supported indirect employment through infrastructure development, institutional operations, and service-related activities associated with its campuses.

A key contribution of TKR Educational Society lies in democratizing access to quality professional education by offering affordable educational opportunities to students from rural, semi-urban, and economically weaker sections of society. Scholarships, academic support systems, and student welfare initiatives have enabled deserving students to pursue higher education and improve their socio-economic status.

The Society also actively promotes skill development and practical learning through workshops, technical training programs, internships, and industry interaction initiatives. These programs enhance the employability of graduates and equip them with the necessary competencies required to meet evolving industry demands. By bridging the gap between academic knowledge and practical application, the Society contributes to reducing unemployment and strengthening the local workforce.

Over the years, the integrated academic ecosystem developed by TKR Educational Society has contributed significantly to regional educational advancement, human resource development, and socio-economic progress. The sustained commitment to academic quality, affordability, and community engagement demonstrates the Society's strong alignment with national educational priorities and social development goals.

Overall, the contributions of **TKR Educational Society** to education, employment generation, skill development, and community empowerment have had a lasting and meaningful impact on the societal fabric of the region. This sustained institutional commitment provides a strong foundation for the establishment of **TKR DEEMED TO BE UNIVERSITY (TKRDU)** as a multidisciplinary institution dedicated to academic excellence, innovation, and societal development.

Alumni of institutions under **TKR Educational Society**, including engineering, pharmacy, management, and diploma programs, have achieved notable academic and professional success across diverse technical and professional domains. Graduates have secured employment and advanced academic opportunities in reputed national and multinational organizations, higher education institutions, and professional sectors such as information technology, manufacturing, construction, pharmaceuticals, business management, and entrepreneurship.

Several alumni have pursued higher education in prestigious institutions in India and abroad, contributing

to advanced research, innovation, and professional development. Many graduates have been employed in leading technology companies, pharmaceutical industries, consulting firms, infrastructure organizations, and entrepreneurial ventures, demonstrating the effectiveness of the academic and training ecosystem developed under TKR Educational Society.

The continued success of alumni across industries and academic institutions highlights the Society's commitment to producing competent professionals capable of addressing contemporary technological, pharmaceutical, and managerial challenges at regional, national, and global levels.

## Collaboration Statement

Institutions under TKR Educational Society have established collaborative relationships with industries, professional organizations, and academic institutions to strengthen research, training, and skill development activities. These collaborations support internships, industrial visits, faculty development programs, joint workshops, and industry-oriented projects that enhance the practical learning experience of students.

The engineering, pharmacy, and management institutions regularly engage with industrial partners to facilitate technology-based learning, professional training, and exposure to contemporary industrial practices. Collaborative initiatives include joint technical workshops, industry-sponsored projects, guest lectures by domain experts, and skill enhancement programs in emerging areas such as software development, automation, pharmaceutical formulation, business analytics, and entrepreneurship development.

These collaborations contribute significantly to strengthening institutional credibility, enhancing employability of graduates, and ensuring alignment of academic programs with evolving industry requirements. The sustained engagement with industry and academic partners reflects the Society's commitment to fostering innovation, applied research, and professional readiness among students and faculty members.

## Overall Impact Statement

Since its establishment in 2001, TKR Educational Society has made substantial contributions to regional educational advancement, workforce development, and socio-economic progress through its multidisciplinary institutions. The Society has collectively educated thousands of students across engineering, management, pharmacy, and diploma-level technical programs, many of whom have successfully established careers in diverse professional sectors.

Through academic programs, skill development initiatives, industry collaborations, and community-oriented outreach activities, the institutions under the Society have contributed to strengthening technical literacy, employability, and entrepreneurial capacity among youth. The academic ecosystem developed by the Society has supported the development of technically competent professionals capable of contributing to industrial growth, technological innovation, and business development.

In addition to direct academic contributions, the Society has generated significant indirect societal benefits through employment creation, technical awareness programs, infrastructure development, and support for community-based educational initiatives. The cumulative impact of teaching, training, research, and

outreach activities undertaken over more than two decades reflects the Society's sustained commitment to societal development, technological advancement, and national progress.

Overall, the institutional achievements and community contributions of TKR Educational Society demonstrate its role as a socially responsible and academically progressive organization aligned with national educational priorities, workforce development initiatives, and regional development goals. This sustained impact provides a strong foundation for the proposed establishment of TKR DEEMED TO BE UNIVERSITY (TKRDU) as a multidisciplinary institution dedicated to academic excellence, innovation, and societal transformation.

## 1.6 Members and Management Board of TKR Educational Society

TKR Educational Society is governed by a structured leadership framework comprising experienced educationists, administrators, and professionals committed to promoting academic excellence and institutional growth. The Society was established under the leadership of visionary founders who recognized the importance of structured governance, transparent administration, and strategic institutional planning in sustaining long-term academic development.

The governing framework of the Society includes the Chairman, Vice Chairman, Secretary, Treasurer, Joint Secretary, and other Governing Body members who collectively guide policy formulation, institutional planning, financial management, and academic development across all constituent institutions. The leadership structure ensures effective coordination among engineering, pharmacy, management, and diploma institutions functioning under the Society.

Under the guidance of the Governing Body, the Society has implemented systematic administrative processes, academic quality assurance mechanisms, and infrastructure development initiatives that support institutional growth and regulatory compliance. The leadership team actively oversees strategic initiatives related to faculty recruitment, infrastructure expansion, research development, industry collaboration, and student welfare programs.

The governance and management structure of TKR Educational Society reflects a commitment to transparency, accountability, and continuous improvement, ensuring that institutional activities are aligned with national educational policies and regulatory standards. This well-defined management framework provides a stable and sustainable administrative foundation for the proposed establishment of TKR DEEMED TO BE UNIVERSITY (TKRDU).

### Table 1.3 General Body Members

| S. No. | Name | Role in TKRES | Year of Association | Professional Background | Legacy & Key Contributions |
|---|---|---|---|---|---|
| 1 | Shri.Teegala Krishna Reddy s/o. Ram Reddy | Chairman | 2001 | Former Mayor of Hyderabad, Ex.MLA Maheswaram | Founder Chairman of TKRES; Visionary leader instrumental in establishing and expanding educational institutions under TKRES; Played a key role in infrastructure development and academic growth. |

| | | | | | |
|---|---|---|---|---|---|
| 2 | Mrs. T.Arundhati W/o. T.Krishna Reddy | Vice Chairman | 2001 | Educationist and Administrator | Contributed significantly to administrative planning and institutional development; Supported academic and student welfare initiatives across TKRES institutions. |
| 3 | Dr. T.Harinath Reddy S/o. T. Krishna Reddy | General Secretary | 2001 | Academician and Administrator | Actively involved in academic planning, institutional governance, and modernization of facilities; Promoted quality education and research activities. |
| 4 | Mr. T. Amarnath Reddy S/o. T. Krishna Reddy | Treasurer | 2001 | Administrator and Financial Manager | Oversees financial planning and resource management; Strengthened financial sustainability and infrastructure expansion of institutions. |
| 5 | Mrs. T. Tulasi W/o. T. Amarnath Reddy | Joint Secretary | 2001 | Educationist and Institutional Administrator | Supports administrative coordination and institutional activities; Contributes to student support systems and institutional welfare initiatives. |

## Table 1.4 Key Academic and Administrative Personnel

| S. No | Name | Designation | Key Professional Expertise |
|---|---|---|---|
| 1 | Dr. A. Ramaswamy Reddy | Principal, Professor (CSE), TKRCET | **Academic Leadership & Institutional Administration:** Leading academic and administrative functions of TKRCET with extensive experience in higher technical education management. **Computer Science & Engineering:** Expertise in Computer Science education, curriculum planning, and academic governance. **Quality & Institutional Development:** Contributed to institutional growth, accreditation processes, and outcome-based education implementation. |
| 2 | Dr. J. Vara Prasad Reddy | Director, MBA | **Management Education Leadership:** Extensive experience in MBA education, academic planning, and institutional administration. **Industry Interaction & Strategic Planning:** Promotes industry-academia collaboration, management training, and professional development initiatives. **Academic Administration:** Oversees curriculum delivery, faculty coordination, and student development activities. |
| 3 | Dr. Vijaya Kuchana | Principal, TKRCOP | **Pharmaceutical Education Leadership:** Leading pharmacy education with focus on academic excellence |

| | | | |
|---|---|---|---|
| | | | and professional standards.<br>**Research & Regulatory Compliance:** Expertise in pharmaceutical regulations, institutional administration, and research coordination.<br>**Academic Development:** Promotes quality education, laboratory development, and student-centric learning practices. |
| 4 | Mr. M. Manohar | Incharge Principal, TKRCET – Diploma | **Polytechnic Administration:** Experienced in diploma-level technical education management and institutional coordination.<br>**Student & Academic Affairs:** Oversees academic monitoring, student discipline, and technical training activities.<br>**Technical Education Management:** Focused on skill-oriented education and curriculum implementation. |
| 5 | Mr. G. Laxminarayana | Administrative Officer | **Institutional Administration:** Expertise in office administration, institutional coordination, and policy implementation.<br>**Regulatory Coordination:** Handles statutory compliance, documentation, and liaison with regulatory authorities.<br>**Office Management:** Manages administrative operations, records, and institutional logistics efficiently. |
| 6 | Dr. D. Nageshwar Rao | Professor (ECE), Controller of Examinations | **Examination Management:** Extensive experience in conducting university examinations, evaluation, and academic records management.<br>**Academic Administration:** Oversees examination reforms, result processing, and institutional academic coordination.<br>**Electronics & Communication Engineering:** Expertise in ECE teaching, research, and curriculum development. |
| 7 | Dr. G. Manjunath | Professor (CSE), Dean of Academics, HoD – CSE | **Academic Planning & Curriculum Development:** Leads curriculum design, academic monitoring, and outcome-based education practices.<br>**Computer Science Leadership**: Extensive expertise in Computer Science education, departmental administration, and research guidance.<br>**Institutional Quality Enhancement:** Supports accreditation, academic audits, and continuous quality improvement initiatives. |
| 8 | Dr. M. Jagadish Chandra | Professor (ECE), Dean of Academics | **Academic Administration:** Oversees academic operations, curriculum implementation, and |

| | | | |
|---|---|---|---|
| | | | institutional academic planning.<br>**Electronics & Communication Engineering:** Expertise in ECE education, research, and technical mentoring.<br>**Faculty & Student Development:** Promotes teaching excellence and academic coordination across departments. |
| 9 | Dr. D.V.S.R. Anil Kumar | Professor (Mathematics), Dean of S&H | **Science & Humanities Administration:** Leads Science and Humanities departments with focus on foundational education.<br>**Mathematics Education:** Expertise in Engineering Mathematics, academic mentoring, and curriculum planning.<br>**Academic Coordination:** Supports interdisciplinary teaching, faculty development, and student academic progression. |
| 10 | Dr. B. Rajini Kanth | Dean – Research & Development (R&D) | **Research Administration:** Coordinates institutional research activities, sponsored projects, and innovation initiatives.<br>**Technology Development & Innovation:** Promotes research collaborations, patent activities, and industry-linked innovation.<br>**Academic Research Leadership:** Guides faculty and students in research publications and funded project development. |
| 11 | Dr. V. Krishna | Professor (IT), HoD-IT, IQAC Coordinator | **Quality Assurance & Accreditation:** Leads IQAC activities, NAAC/NBA processes, and institutional quality enhancement initiatives.<br>**Academic Audits & Governance:** Coordinates academic audits, policy implementation, and outcome assessment processes.<br>**Computer Science & Data Science:** Expertise in CSD education, departmental administration, and curriculum innovation. |
| 12 | Dr. K.V.S.R. Satya Sai | HoD – Civil | **Civil Engineering Leadership:** Expertise in structural engineering, construction planning, and academic administration.<br>**Departmental Management:** Oversees curriculum implementation, laboratory development, and student mentoring.<br>**Infrastructure & Technical Education:** Supports practical learning and industry-oriented technical training. |
| 13 | Dr. K. Prasada | HoD – EEE | **Electrical & Electronics Engineering:** Expertise in |

| | | | |
|---|---|---|---|
| | Rao | | power systems, electrical machines, and engineering education.<br>**Academic Leadership:** Leads departmental administration, curriculum development, and faculty coordination.<br>**Technical Training:** Promotes industry-relevant skills and laboratory-based learning practices. |
| 14 | Dr. M. Mahesh | HoD – ECE | **Electronics & Communication Engineering:** Expertise in communication systems, embedded systems, and electronics education.<br>**Academic Administration:** Oversees departmental operations, academic planning, and student mentoring.<br>**Research & Technical Guidance:** Encourages innovation, project development, and technical skill enhancement. |
| 15 | Dr. Sirisha K.L.S. | HoD – AIML | **Artificial Intelligence & Machine Learning:** Expertise in AI, ML, data analytics, and emerging technologies.<br>**Curriculum Innovation:** Develops industry-oriented academic programs aligned with technological advancements.<br>**Research & Student Mentoring:** Guides students in research, innovation, and project-based learning. |
| 16 | Dr. G. Ravi | HoD – CSD | **Information Technology Leadership:** Expertise in networking, software systems, and IT education.<br>**Academic Planning & Administration:** Oversees curriculum implementation, faculty management, and departmental coordination.<br>**Technology Integration:** Promotes modern IT practices, digital learning, and industry interaction. |
| 17 | Dr. C. Umadevi | HoD – Mathematics | **Applied Mathematics:** Expertise in Engineering Mathematics, analytical methods, and academic instruction.<br>**Academic Coordination:** Supports interdisciplinary teaching, student mentoring, and curriculum planning.<br>**Research & Education:** Encourages mathematical research and problem-solving methodologies. |
| 18 | Dr. N. Anuradha | HoD – Chemistry | **Chemistry Education & Research:** Expertise in engineering and pharmaceutical chemistry with focus on laboratory practices**.**<br>**Laboratory Management:** Oversees chemical laboratories, safety practices, and research activities.<br>**Academic Leadership:** Coordinates curriculum delivery and student academic development. |

| | | | |
|---|---|---|---|
| 19 | Mrs. G. Sandhya | HoD – Physics | **Physics Education:** Expertise in Engineering Physics, applied sciences, and laboratory-based instruction.<br>**Research & Laboratory Administration:** Manages laboratory facilities, scientific experimentation, and student training.<br>**Academic Coordination:** Supports interdisciplinary science education and curriculum development. |
| 20 | Mr. N. Murali Mohan | HoD – English | **Communication Skills & Language Training:** Expertise in English communication, soft skills, and professional development training.<br>**Student Skill Development:** Conducts language enhancement and employability-oriented programs.<br>**Academic Coordination:** Supports curriculum delivery and student mentoring in communication competencies. |
| 21 | Dr. K. Gyaneshwari | HoD – MBA | **Management Studies Leadership:** Expertise in business administration, management education, and academic planning.<br>**Research & Consultancy:** Guides research activities, case studies, and industry-oriented projects.<br>**Department Administration:** Oversees curriculum implementation and faculty coordination in MBA programs. |
| 22 | Dr. Raghu Kiran | Professor in Pharmacy | **Pharmaceutical Sciences:** Expertise in clinical pharmacy, pharmaceutical research, and academic mentoring.<br>**Research & Publications:** Contributes to research guidance, scholarly publications, and laboratory development.<br>**Student Mentorship:** Promotes professional competency and research-oriented pharmacy education. |
| 23 | Dr. Sanjay | Professor in MBA | **Business Management Education:** Expertise in management studies, organizational behaviour, and strategic management.<br>**Research & Consultancy:** Guides academic research, management consultancy, and industry-linked learning.<br>**Professional Development:** Supports student employability and leadership training initiatives. |
| 24 | Mr. Y. Govardhan Reddy | NCC-Incharge | **NCC Administration & Leadership:** Coordinates NCC activities, discipline, and leadership development programs.<br>**Student Development:** Promotes personality development, teamwork, and social responsibility among students. |

| | | | |
|---|---|---|---|
| | | | **Training & Coordination:** Organizes camps, drills, and community-oriented initiatives. |
| 25 | Mr. Rajasekhar | Training & Placement Officer (TPO) | **Industry Collaboration & Placements:** Coordinates campus recruitment, industry interaction, and placement activities**.**<br>**Internship & Career Development:** Facilitates internships, career guidance, and employability skill training.<br>**Corporate Relations:** Builds partnerships with industries for student opportunities and professional exposure. |
| 26 | Ms. V. Pranathi | Training & Placement Officer (TPO) | **Placement Coordination**: Assists in campus recruitment, student training, and placement management.<br>**Industry Relations:** Supports collaborations with companies for internships and recruitment drives.<br>**Skill Development:** Organizes aptitude, communication, and career readiness programs. |
| 27 | Mr. G. Srinivas Reddy | Librarian | **Library & Information Management:** Expertise in library administration, cataloguing, and academic resource management.<br>**Digital Resource Services:** Manages e-resources, digital libraries, and information access systems.<br>**Academic Support Services:** Facilitates research, reference services, and knowledge dissemination. |
| 28 | Mr. A. Balakrishna | Liaison Officer | **Government & Regulatory Liaison:** Coordinates communication with government agencies and statutory bodies<br>.**Institutional Coordination:** Handles approvals, compliance documentation, and administrative follow-up.<br>**Public Relations:** Supports institutional representation and stakeholder coordination activities. |
| 29 | Mr. K. Kishore | Additional Controller of Examinations | **Examination Coordination:** Supports examination scheduling, conduct, and evaluation processes.<br>**Academic Records Management:** Oversees student records, documentation, and result processing.<br>**Administrative Support:** Assists in maintaining transparency and efficiency in examination systems. |
| 30 | Mr. P.V. Kishan Rao | Additional Controller of Examinations | **Examination Administration:** Coordinates examination procedures, assessments, and evaluation activities.<br>**Student Assessment Management:** Supports academic documentation and result compilation |

| | | | |
|---|---|---|---|
| | | | processes.<br>**Institutional Academic Support:** Ensures smooth conduct of university examination-related operations. |
| 31 | Dr. J. Sunitha Kumari | NSS Programme Officer | **Community Engagement & Social Outreach:** Coordinates NSS activities, awareness programs, and community service initiatives.<br>**Student Volunteer Management:** Promotes leadership, teamwork, and social responsibility among students.<br>**Extension Activities:** Organizes health camps, rural outreach, and social impact programs. |
| 32 | Mr. Johnson | Physical Director | **Sports Administration & Physical Education:** Oversees sports activities, fitness training, and physical education programs.<br>**Student Fitness & Development:** Promotes health, wellness, and participation in sports competitions.<br>**Event Coordination:** Organizes tournaments, athletic events, and extracurricular sports activities. |

## 1.7 Existing Institutes under the Society

The Society runs the following Institutions:

- TKR College of Engineering & Technology (TKRCET)
- TKR Institute of Management and Sciences (TKRIMS)
- Teegala Krishna Reddy Engineering College (TKREC)
- Teegala Krishna Reddy College of Pharmacy (TKRCOP)
- TKR College of Engineering & Technology (TKRCET)-Diploma

### TKR College of Engineering & Technology (TKRCET)

**TKR College of Engineering & Technology (TKRCET)** was established in 2002 under the aegis of the TKR Educational Society with the objective of imparting quality technical education and promoting innovation-driven learning. The institution offers undergraduate and postgraduate programs in various engineering disciplines and provides a strong academic foundation supported by modern laboratories and infrastructure. The college has well-equipped classrooms, computing facilities, and a central library with a wide collection of academic resources. The campus is enabled with internet and Wi-Fi facilities to support digital learning and research activities. The institution encourages industry interaction, technical training, and project-based learning to enhance student employability and professional competence.

### Vision

The Institution endeavours towards imparting quality education with ethical values and strives to make students technically competent to reach heights and make our nation self-reliant and globally recognized The institution aspires to be a center of excellence in engineering and technology education. Our vision is to:

- Impart high-quality education that blends academic excellence with ethical values.
- Nurture technically competent graduates who are capable of addressing real-world challenges with innovative solutions.
- Promote leadership and professionalism in every student to foster a spirit of responsibility and service.
- Encourage lifelong learning through continuous development and skill enhancement.
- Strive for national self-reliance by preparing students to contribute effectively to India's growth in science and technology.
- Gain global recognition by producing industry-ready professionals equipped with global competencies.

## Mission

The Institution is committed and dedicated to mould the students into quality engineers and technologists with aplomb by providing world-class scientific and technical education through:

- Ensuring excellent branch wise infrastructural facilities with eminent and qualified faculty
- Making the institute a research/resource centre to enhance scope for consultancy and R&D

Our mission is to cultivate a dynamic learning environment that transforms students into capable engineers and responsible citizens. To achieve this, we are committed to:

- Providing World-Class Technical Education:
  Delivering comprehensive programs across all disciplines through a curriculum that is aligned with industry needs and emerging technologies.
- Ensuring State-of-the-Art Infrastructure:
  Maintaining modern laboratories, libraries, and computing facilities to support both teaching and research activities in every department.
- Employing Eminent and Qualified Faculty:
  Engaging experienced educators and researchers to mentor students and promote academic excellence.
- Promoting Ethical and Professional Values:
  Instilling a strong sense of ethics, discipline, and responsibility among students to prepare them for societal and professional roles.
- Encouraging Innovation and Research:
  Fostering a research-centric atmosphere that encourages students and faculty to undertake projects with practical and social relevance.
- Establishing Industry Partnerships:
  Collaborating with leading industries to enhance learning through internships, guest lectures, and joint research opportunities.
- Becoming a Hub for R&D and Consultancy:
  Positioning the institute as a recognized resource center for advanced research, development, and consultancy services.

- Supporting Holistic Student Development:
  Offering extracurricular and co-curricular activities to shape well-rounded individuals with leadership and communication skills.

**Academic Programs:** Engineering Programs

UG- Civil, EEE, ECE, CSE, CSE-AIML, CSE-DS, IT

PG- CSE, EEE, MBA (Finance, HR, Marketing, Entrepreneurship)

## TKR Institute of Management and Sciences (TKRIMS)

TKR Institute of Management & Science, established in 2003 with the approval of AICTE, New Delhi, offers a two-year full-time MBA programme affiliated with Osmania University, Hyderabad, with an approved intake of 180 students. Over the years, the institute has built a strong reputation and carved a niche for itself among leading management institutions in a relatively short span of time.

Guided by its Society vision of being "Indian in values and International in excellence," the institute provides quality management education supported by modern infrastructure and a team of competent and experienced faculty members. The focus is on the practical application of knowledge, along with the development of positive attitudes, professional skills, and managerial competencies among students. The teaching methodology is dynamic and includes lectures, case studies, role-plays, and simulations to ensure holistic learning.

The School of Management (SoM) is strengthened by a well-qualified faculty team and is further enriched by the contribution of distinguished visiting faculty from academia and industry. The institute has consistently achieved good placement outcomes, supported by strong industry connections and a proven academic track record. With a commitment to continuous improvement, the faculty strives to position the institution as a centre of excellence in management education, aligned with evolving global and industry requirements.

### Vision

To be a centre of excellence in all aspects of management education through continuous competency building and innovation.

### Mission

To prepare professionally competent managerial manpower to meet the challenges of corporate, business, service sectors and the government and thereby help contribute to economic development of the nation. It endeavours to impart quality management education and inculcate among the youth humane and ethical perspective based on values of honesty, dedication and social justice.

**Academic Programs:** Master of Business Administration (MBA)- Finance, HR, Marketing, Entrepreneurship, Systems with Business Analytics

## Teegala Krishna Reddy Engineering College (TKREC)

**Teegala Krishna Reddy Engineering College (TKREC)** was established in 2005 under the TKR Educational Society with the objective of expanding access to quality engineering education. The institution offers undergraduate engineering programs supported by modern infrastructure and well-equipped laboratories. The college provides a conducive academic environment with experienced faculty and digital learning resources. The central library supports academic and research needs with a wide range of books and journals. The institution promotes technical skill development, innovation, and industry-oriented training to enhance student competence and employability.

### Vision

Imparting Knowledge and instilling skills to the aspiring students in the field of Engineering, Technology, Science and Management to face the emerging challenges of the society.

### Mission

- Encouraging scholarly activities that transfer knowledge in the areas of Engineering, Technology, Science and Management.
- Ensuring students of all levels, well trained to meet the needs of education and their future endeavors.
- Inculcating human values and ethics into the education system for the all-round development of the students.

**Academic Programs:** UG- Civil, EEE, ECE, CSE, IT, CSE-AIML, CSE-DS

## Teegala Krishna Reddy College of Pharmacy (TKRCOP)

**Teegala Krishna Reddy College of Pharmacy (TKRCOP)** was established in 2007 under the TKR Educational Society to provide quality pharmaceutical education and develop skilled professionals in the field of pharmacy. The institution offers pharmacy programs supported by well-equipped laboratories, modern instrumentation, and qualified faculty. The college provides a strong academic environment with emphasis on practical training, research activities, and industry exposure. The central library is equipped with pharmaceutical textbooks, journals, and digital learning resources. The institution promotes research, innovation, and professional ethics to prepare competent pharmacy professionals capable of serving healthcare and pharmaceutical industries.

Teegala Krishna Reddy College of Pharmacy was established in the year 2007 approved by AICTE, PCI and is affiliated to JNTUH with an intake of 60. The intake was increased to 120 in the year 2010. Another milestone in the development of the Pharmacy College in 2010 was introduction of two PG courses, with the approval of AICTE. Additional 3 PG course were introduced in the successive academic years up to 2013-2014 with the approval of AICTE.

### Vision

To Impart Quality education and become a leading academic Institution dedicated to advancing, applying & facilitating high standards of Research in Pharmaceutical Sciences that optimizes the health and wellness of Individuals and communities.

### Mission

- To offer state-of-the-art Undergraduate & Post graduate programmes.
- To stimulate the culture of diversity of thought and learning.

- To develop potential to face the Global Challenges.
- To promote long term interaction of academia with industry.
- To generate cutting-edge-research.

**Academic Programs:** UG- B.Pharmacy

PG- M.Pharmacy- Pharmaceutics, Pharmaceutical Analysis, Pharmacology

## TKR College of Engineering & Technology (TKRCET)-Diploma

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY – Polytechnic College (Code: 241) was established in the year 2009 under the esteemed management of TKR EDUCATIONAL SOCIETY (TKRES).The institution is located at Survey No. 8/A, Medbowli, Meerpet, Balapur Mandal, Hyderabad, Telangana.The college is approved by the All India Council for Technical Education (AICTE) and the State Board of Technical Education and Training (SBTET), Telangana, ensuring adherence to high standards of technical education and academic excellence.

### Vision

To be a recognized institution in diploma engineering education fostering technical skills and professional competence.

### Mission

To provide quality diploma education, develop practical skills, promote technical knowledge, and prepare students for employment and higher education in engineering fields.

### Academic Programs:

- Diploma in Civil Engineering
- Diploma in Electrical and Electronics Engineering (EE
- Diploma in Electronics and Communication Engineering (EC)
- Diploma in Mechanical Engineering
- Diploma in Computer Science Engineering

# CHAPTER 2
# TKR DEEMED TO BE UNIVERSITY

**TKR Deemed to be University (TKRDU)** would be a **Multidisciplinary Higher Education Institution**, proposed to be established as a **Deemed to be University** functioning from **Hyderabad (Telangana, India)**. **TKR DEEMED TO BE UNIVERSITY (TKRDU)** would be an amalgamation of the **physical, human, intellectual, infrastructural, and technological resources** of the following institutions functioning under the same sponsoring body, namely **TKR Educational Society**.
The following institutions are proposed to be brought under the ambit of the proposed Deemed to be University:

- **TKR College of Engineering & Technology**
- **TKR Institute of Management and Sciences**
- **Teegala Krishna Reddy College of Pharmacy**
- **TKR College of Engineering & Technology-Diploma (Polytechnic)**

## 2.1 Establishment of TKR DEEMED TO BE UNIVERSITY (TKRDU)
## Distinctiveness

The proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)** is envisioned as a **multidisciplinary institution** dedicated to integrating **traditional knowledge, engineering principles, modern science, technology, pharmaceutical sciences, management practices, and innovation ecosystems** to advance holistic education, research excellence, and sustainable societal development.
While contemporary higher education and research ecosystems have achieved remarkable specialization and technological advancement, they often remain fragmented and discipline-centric. Traditional knowledge and indigenous technological practices offer valuable perspectives on sustainability, systems-based thinking, and resource optimization; however, their integration into modern academic frameworks remains limited due to gaps in scientific validation, interdisciplinary frameworks, and institutional mechanisms.

The proposed university seeks to bridge these gaps by creating an **inclusive academic and research ecosystem** where traditional knowledge systems and modern technological advancements coexist and complement each other. By leveraging advanced technologies such as **artificial intelligence, data analytics, robotics, automation, digital platforms, Internet of Things (IoT), advanced manufacturing technologies, and emerging engineering tools**, the institution will promote **evidence-based learning, interdisciplinary research, and innovation** across engineering, technology, pharmaceutical sciences, management, natural sciences, social sciences, and humanities.

Aligned with **National Education Policy (NEP-2020)**, national innovation priorities, and global sustainable development goals, the university aims to nurture **future-ready graduates**, generate impactful technological solutions, foster entrepreneurship, and contribute meaningfully to industrial growth, societal welfare, and national development.

## Distinctive Aspects of the University

### Integrated Multidisciplinary Knowledge Convergence Model

The university adopts a **unique multidisciplinary academic and research model** that goes beyond conventional discipline-based teaching by actively integrating **engineering, technology, pharmaceutical sciences, management, sciences, and humanities**. This convergence promotes interdisciplinary learning, systems thinking, and innovation-driven problem-solving, positioning the institution as a pioneer in multidisciplinary knowledge integration rather than isolated specialization.

### Technology-Enabled Knowledge Validation and Innovation

Advanced technologies such as **Artificial Intelligence (AI), Machine Learning (ML), Data Analytics, Digital Engineering Platforms, Simulation Tools, and Smart Laboratory Systems** will be systematically embedded across academic and research activities. These technologies will support design validation, prototype development, predictive modeling, and technology innovation, ensuring scientific rigor, scalability, and global relevance of research outputs.

### Multidisciplinary Education for Future-Ready Graduates

The university will offer flexible, multidisciplinary academic programs aligned with **NEP-2020**, enabling students to acquire cross-domain competencies in engineering, pharmaceutical sciences, management, digital technologies, and innovation. Graduates will be trained in integrative thinking, digital literacy, entrepreneurship, ethical values, and global perspectives, enabling them to address complex technological, industrial, and societal challenges.

### Research with Societal and Industrial Impact

Research at the university will be **purpose-driven, interdisciplinary, and industry-aligned**, addressing technological challenges, industrial needs, and societal priorities. By integrating engineering innovation with applied research methodologies, the institution will generate solutions supporting sustainable development, industrial modernization, and national technological advancement.

### Global Engagement with Indigenous Innovation Focus

While rooted in indigenous knowledge systems and local technological needs, the university will maintain a strong global outlook through **international collaborations, technology partnerships, academic exchanges, and joint research initiatives**. This balanced approach of local relevance and global integration will position the university as a leading institution in multidisciplinary engineering and technological education.

## Vision

To become a **globally recognized multidisciplinary university** that integrates **engineering, technology, pharmaceutical sciences, management, and innovation** for holistic education, research excellence, and sustainable technological advancement.

## Mission

- To create an inclusive and interdisciplinary academic ecosystem that integrates engineering, technological innovation, and scientific knowledge.
- To promote evidence-based education, applied research, and technology-driven innovation across multiple disciplines.
- To leverage advanced technologies for knowledge creation, skill development, and industrial transformation.
- To foster ethical values, critical thinking, creativity, and lifelong learning among students and scholars.
- To contribute to national priorities, industrial development, and global technological progress through education, research, and community engagement.

## OBJECTIVES

### Academic Objectives

- To offer multidisciplinary **undergraduate, postgraduate, doctoral, and post-doctoral programs** integrating engineering, technology, pharmaceutical sciences, management, sciences, and humanities.
- To design innovative curricula encouraging **interdisciplinary learning, experiential education, project-based learning, and industry engagement**.
- To develop graduates equipped with **digital competencies, technical expertise, innovation skills, ethical values, and global perspectives**.

### Research Objectives

- To promote **high-quality interdisciplinary and translational research** addressing industrial, technological, and societal challenges.
- To establish **Centers of Excellence** in emerging technologies such as Artificial Intelligence, Robotics, Data Science, Sustainable Engineering, Pharmaceutical Research, and Advanced Manufacturing.
- To utilize advanced digital tools, analytics platforms, and simulation systems to enhance research quality and innovation outcomes.
-

### Innovation & Societal Objectives

- To encourage **innovation, entrepreneurship, intellectual property development, and technology commercialization**.
- To engage communities through **technology outreach, digital literacy programs, and sustainable engineering solutions**.
- To contribute technology-driven insights supporting national initiatives and industrial development.
-

### Global & Institutional Objectives

To foster **national and international collaborations** for academic exchange, research partnerships, and technological innovation.

- To align institutional activities with **NEP-2020, Sustainable Development Goals (SDGs), and global engineering education standards**.
- To position the university as a **leading institution in multidisciplinary engineering and technology education**.

### Table 2.1 Distinct Features of TKRDU Proposal

| Distinct Feature | Description | Present Status in India |
|---|---|---|
| Integration of Multidisciplinary Engineering and Sciences | Development of integrated academic programs combining engineering, pharmacy, management, and sciences | Limited implementation of fully multidisciplinary models |
| AI-Powered Adaptive Learning | Personalized, data-driven learning platforms for engineering and technology education | Emerging but not widely implemented |
| Immersive VR/AR Engineering Simulations | Realistic simulation-based learning for engineering design and system testing | Rarely integrated comprehensively |
| AI-Driven Engineering Decision Systems | Real-time predictive modeling and design optimization tools | Limited adoption |
| Virtual Engineering Laboratories | Repeated experimentation and remote lab accessibility | Developing stage |
| IoT-Enabled Smart Campus | Real-time monitoring of infrastructure, energy systems, and operations | Limited adoption |
| AI-Enabled Research Platforms | Accelerated research using advanced computational tools | Requires further expansion |
| Technology Innovation Ecosystem | Interdisciplinary R&D, incubation centers, and startup development | Emerging in select institutions |
| Smart Infrastructure Systems | Automation, data analytics, and digital engineering systems | Not yet standardized |
| Digital Collaborative Platforms | Interdisciplinary learning across engineering and management disciplines | Limited formal integration |
| Continuous Digital Professional Development | Lifelong skill development and upskilling through digital learning platforms | Largely evolving |

## 2.2 Existing Constituent Colleges

**TKR DEEMED TO BE UNIVERSITY (TKRDU)** the proposed Deemed to be University, will comprise multiple constituent colleges offering programs in **Engineering, Technology, Pharmaceutical Sciences, Management, Basic Sciences, and Allied Disciplines**. These institutions have been functioning under the aegis of **TKR Educational Society** and have established strong academic systems, infrastructure facilities, qualified faculty resources, and industry linkages over the years.

The following constituent colleges will continue to function under the proposed **Deemed-to-be-University**, in addition to the newly initiated multidisciplinary academic programs aligned with **NEP-2020** and emerging technological domains:

- **TKR College of Engineering & Technology**
- **TKR Institute of Management and Sciences**
- **Teegala Krishna Reddy College of Pharmacy**
- **TKR College of Engineering & Technology-Diploma(Polytechnic)**

**Table 2.2 Institution wise year of inception, student on roll and faculty strength**

| S No | Institution | Year of Inception | Students on role | Faculty Strength | Courses offered | | |
|---|---|---|---|---|---|---|---|
| | | | | | Diploma | UG | PG |
| 1 | TKR College of Engineering & Technology | 2002 | 1488 | 295 | | Yes | Yes |
| 2 | TKR Institute of Management and Sciences | 2003 | 366 | 20 | | | Yes |
| 3 | Teegala Krishna Reddy College of Pharmacy | 2007 | 145 | 39 | | Yes | Yes |
| 4 | TKR College of Engineering & Technology-Diploma(Polytechnic) | 2009 | 1205 | 66 | Yes | | |

**2.2.1 TKR College of Engineering & Technology (TKRCET),** established under the aegis of **TKR Educational Society**, Hyderabad, is a premier institution dedicated to providing quality technical education in engineering and technology. Since its inception, the institution has consistently focused on academic excellence, innovation-driven learning, and industry-oriented education to meet the evolving technological demands of the nation and global industry.

The college **commenced its academic programs with an initial Undergraduate (UG) intake of 240 students** in core engineering disciplines. Over the years, the institution has demonstrated steady academic growth and infrastructural expansion to meet the increasing demand for quality engineering education.

**At present, the college has expanded significantly to accommodate a total intake of 1488 students across Undergraduate and Postgraduate programs**, reflecting the institution's strong academic reputation and sustained growth trajectory. This expansion has been supported by the development of modern laboratories, advanced computing facilities, digital classrooms, research infrastructure, and enhanced student support systems.

The institution offers undergraduate and postgraduate programs across multiple engineering disciplines, supported by well-equipped laboratories, modern computing facilities, digital classrooms, and advanced research infrastructure. The institution promotes experiential learning through project-based education, internships, industrial training, and collaborative research initiatives with industries and research organizations.

The college has developed strong industry linkages that facilitate internships, live projects, consultancy activities, and placement opportunities for students. Emphasis is placed on innovation, entrepreneurship, and interdisciplinary learning, enabling students to develop practical skills and professional competencies required for modern technological environments.

Through continuous curriculum enrichment, faculty development initiatives, and student-centric learning approaches, the institution has built a strong academic reputation and continues to contribute significantly to engineering education and technological advancement. The growth in student intake from **240 to 1488** demonstrates the institution's capacity for expansion, academic credibility, and readiness for integration into the proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)** framework.

## Vision

The Institution endeavours towards imparting quality education with ethical values and strives to make students technically competent to reach heights and make our nation self-reliant and globally recognized

The institution aspires to be a center of excellence in engineering and technology education. Our vision is to:

- Impart high-quality education that blends academic excellence with ethical values.
- Nurture technically competent graduates who are capable of addressing real-world challenges with innovative solutions.
- Promote leadership and professionalism in every student to foster a spirit of responsibility and service.
- Encourage lifelong learning through continuous development and skill enhancement.
- Strive for national self-reliance by preparing students to contribute effectively to India’s growth in science and technology.
- Gain global recognition by producing industry-ready professionals equipped with global competencies.

## Mission

The Institution is committed and dedicated to mould the students into quality engineers and technologists with aplomb by providing world-class scientific and technical education through:

- Ensuring excellent branch wise infrastructural facilities with eminent and qualified faculty
- Making the institute a research/resource centre to enhance scope for consultancy and R&D

Our mission is to cultivate a dynamic learning environment that transforms students into capable engineers and responsible citizens. To achieve this, we are committed to:

- Providing World-Class Technical Education:
  Delivering comprehensive programs across all disciplines through a curriculum that is aligned with industry needs and emerging technologies.
- Ensuring State-of-the-Art Infrastructure:
  Maintaining modern laboratories, libraries, and computing facilities to support both teaching and research activities in every department.
- Employing Eminent and Qualified Faculty:
  Engaging experienced educators and researchers to mentor students and promote academic excellence.

- Promoting Ethical and Professional Values:
  Instilling a strong sense of ethics, discipline, and responsibility among students to prepare them for societal and professional roles.
- Encouraging Innovation and Research:
  Fostering a research-centric atmosphere that encourages students and faculty to undertake projects with practical and social relevance.
- Establishing Industry Partnerships:
  Collaborating with leading industries to enhance learning through internships, guest lectures, and joint research opportunities.
- Becoming a Hub for R&D and Consultancy:
  Positioning the institute as a recognized resource center for advanced research, development, and consultancy services.
- Supporting Holistic Student Development:
  Offering extracurricular and co-curricular activities to shape well-rounded individuals with leadership and communication skills.

### Objectives

- To deliver outcome-based engineering education.
- To strengthen research and development activities.
- To enhance industry interaction and practical learning.
- To promote innovation, startups, and intellectual property development.
- To prepare graduates capable of addressing real-world engineering challenges.

### Core Values

- Academic Excellence
- Innovation and Creativity
- Professional Integrity
- Social Responsibility
- Lifelong Learning
- Teamwork and Leadership

### Quality Policy

The college is committed to providing quality technical education through continuous improvement in teaching-learning processes, modern infrastructure development, faculty training, and industry collaboration, ensuring graduates meet global professional standards.

**Programs Offered:** Engineering Programs

UG- Civil, EEE, ECE, CSE, CSE-AIML, CSE-DS, IT

PG- CSE, EEE

## 2.2.2 TKR INSTITUTE OF MANAGEMENT AND SCIENCE (TKRIMS)

**TKR Institute of Management and Science (TKRIMS)**, established in **2003** under the aegis of TKR

Educational Society, Hyderabad, is a premier institution dedicated to providing quality management education and developing competent managerial professionals. The institute was established with the approval of the All India Council for Technical Education (AICTE), New Delhi, and offers a **two-year full-time Master of Business Administration (MBA)** programme affiliated with Osmania University, Hyderabad, with an approved intake of **180 students**.

Since its inception, the institute has consistently focused on academic excellence, skill-oriented learning, and industry-relevant education to meet the dynamic needs of the corporate and business sectors. Over the years, the institute has built a strong reputation and carved a niche among leading management institutions within a relatively short span of time. Guided by the Society's vision of being **"Indian in values and International in excellence,"** the institute provides quality management education supported by modern infrastructure and a team of competent and experienced faculty members.

The institute emphasizes the **practical application of knowledge** along with the development of professional attitudes, leadership qualities, and managerial competencies among students. The teaching-learning process is dynamic and student-centric, incorporating **lectures, case studies, role-plays, simulations, presentations, group discussions, and project-based learning**, ensuring holistic development of students.

The **School of Management (SoM)** is strengthened by a team of well-qualified faculty members and enriched through the contributions of distinguished visiting faculty from academia and industry. The institute has developed strong industry linkages that facilitate internships, industry interactions, guest lectures, and placement opportunities for students. TKRIMS has consistently achieved commendable placement outcomes, supported by strong academic practices and industry engagement.

With a commitment to continuous improvement and innovation in teaching-learning processes, the institute strives to position itself as a **center of excellence in management education**, aligned with evolving global trends and industry requirements. The institute contributes significantly to management education and is well-positioned for integration into the proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)** framework.

## Vision

To be a centre of excellence in all aspects of management education through continuous competency building and innovation.
The institution aspires to:

- Provide high-quality management education aligned with global standards
- Develop competent managerial professionals with leadership qualities
- Foster innovation, creativity, and strategic thinking among students
- Promote ethical values and social responsibility in professional practice
- Encourage lifelong learning and continuous professional development
- Achieve recognition as a leading institution in management education

## Mission

To prepare professionally competent managerial manpower capable of meeting the challenges of corporate, business, service sectors, and government organizations, thereby contributing to the economic

development of the nation.

The institution is committed to:

- **Providing Quality Management Education:** Delivering industry-relevant curricula that integrate theoretical knowledge with practical application
- **Developing Managerial Competencies:** Enhancing leadership, communication, decision-making, and analytical skills
- **Promoting Ethical and Social Values:** Instilling honesty, dedication, and social justice among students
- **Strengthening Industry Interaction:** Encouraging internships, industrial visits, and corporate engagements
- **Encouraging Innovation and Professional Growth:** Supporting creative thinking and problem-solving abilities
- **Supporting Holistic Development:** Preparing students to become responsible professionals and socially conscious citizens

## Objectives

- To provide quality management education aligned with industry requirements
- To enhance managerial and leadership competencies among students
- To promote innovation, entrepreneurship, and business ethics
- To strengthen industry interaction and practical exposure
- To prepare graduates capable of addressing real-world managerial challenges

## Core Values

- Academic Excellence
- Professional Integrity
- Innovation and Leadership
- Ethical Responsibility
- Social Commitment
- Lifelong Learning

## Quality Policy

The institute is committed to providing quality management education through continuous improvement in teaching-learning methodologies, faculty development, infrastructure enhancement, and industry collaboration, ensuring graduates meet professional and global management standards.

**Programs Offered**: Management Programs

### Postgraduate (PG) Programs:

- Master of Business Administration (MBA)- Finance, HR, Markenting, Entrepreneurship, Systems with Business Analytics

### 2.2.3 Teegala Krishna Reddy College of Pharmacy (TKRCOP)

**Teegala Krishna Reddy College of Pharmacy (TKRCOP)**, established in **2007** under the aegis of **TKR Educational Society**, Hyderabad, is a premier institution dedicated to providing quality pharmaceutical education and fostering excellence in pharmaceutical sciences, research, and healthcare services.

Since its inception, the college has focused on delivering **high-quality education in pharmacy**, supported by modern laboratories, qualified faculty members, and a strong academic framework aligned with regulatory standards. The institution aims to produce competent pharmacy professionals capable of contributing to healthcare, pharmaceutical industries, and research organizations.

The college has developed **well-equipped laboratories**, including facilities for pharmaceutical chemistry, pharmaceutics, pharmacology, pharmacognosy, and pharmaceutical analysis. The institution promotes **hands-on training and practical learning**, ensuring that students gain comprehensive knowledge of drug formulation, quality assurance, clinical practices, and regulatory compliance.

Over the years, the college has strengthened its academic and research ecosystem through:

- Modern pharmaceutical laboratories
- Drug analysis and formulation facilities
- Research-oriented academic practices
- Industry and hospital collaborations
- Student training and skill development programs

The institution encourages **research activities, innovation, and industry interaction**, enabling students to participate in seminars, workshops, and research projects relevant to modern pharmaceutical sciences. The college also emphasizes **ethical practices and patient safety**, aligning with national healthcare goals.

TKR College of Pharmacy plays a significant role in producing qualified pharmacy professionals and contributing to pharmaceutical education and healthcare development. The institution is well-positioned to integrate into the proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)** framework and expand into emerging areas such as clinical research, pharmaceutical biotechnology, and drug development.

#### Vision

To be a **center of excellence in pharmaceutical education and research**, producing competent pharmacy professionals committed to healthcare and societal well-being.

The institution aspires to:

- Provide quality pharmacy education aligned with global standards
- Promote pharmaceutical research and innovation
- Develop competent professionals for healthcare and pharmaceutical industries
- Encourage ethical pharmaceutical practices
- Contribute to public health and national healthcare development
- Achieve national and international recognition in pharmaceutical education

## Mission

The institution is committed to developing skilled pharmacy professionals through:

- Providing Quality Pharmaceutical Education
- Delivering comprehensive programs aligned with regulatory requirements and industry needs.
- Ensuring Modern Laboratory Facilities
- Maintaining state-of-the-art laboratories supporting practical and research activities.
- Employing Qualified Faculty
- Engaging experienced faculty members to guide students academically and professionally.
- Promoting Research and Innovation
- Encouraging research-based learning and pharmaceutical advancements.
- Strengthening Industry and Hospital Linkages
- Facilitating training, internships, and professional exposure.
- Supporting Ethical Healthcare Practices
- Instilling responsibility, safety, and ethical values in pharmaceutical practice.
- Encouraging Professional Development
- Promoting lifelong learning and professional growth.

## Objectives

- Provide quality education in pharmaceutical sciences
- Promote research and innovation in drug development
- Strengthen industry and hospital collaborations
- Enhance practical training and clinical exposure
- Prepare competent pharmacy professionals
- Support healthcare and pharmaceutical advancements

## Core Values

- Academic Excellence
- Professional Ethics
- Innovation in Healthcare
- Patient Safety
- Social Responsibility
- Lifelong Learning

## Quality Policy

The college is committed to providing quality pharmaceutical education through continuous improvement in:

- Teaching-learning methodologies
- Laboratory infrastructure
- Faculty development
- Industry and healthcare collaboration

Ensuring graduates meet **professional and regulatory standards**.

## Programs Offered — Pharmacy

## Undergraduate (UG) Programs

- Bachelor of Pharmacy (B.Pharm)

### Postgraduate (PG) Programs

- M.Pharmacy- Pharmaceutics, Pharmaceutical Analysis, Pharmacology

## 2.2.4 TKR College of Engineering & Technology – Diploma (Polytechnic)

**TKR College of Engineering & Technology – Diploma (Polytechnic)**, established in **2009** under the aegis of **TKR Educational Society**, Hyderabad, is dedicated to providing quality technical education at the diploma level, focusing on skill development, employability, and industry readiness.

The Polytechnic institution was established to meet the growing demand for **technically skilled manpower** in various engineering sectors. Since its inception, the institution has consistently emphasized **practical-oriented technical education**, preparing students for direct entry into industry or further academic progression.

The institution offers diploma programs across multiple engineering disciplines supported by **well-equipped laboratories**, workshops, and experienced faculty members. The curriculum focuses on **hands-on learning**, enabling students to acquire technical skills required for industrial operations and technical services.

The Polytechnic institution promotes:

- Skill-based technical education
- Industry-oriented training
- Practical workshop-based learning
- Career-oriented technical skill development

Over the years, the institution has strengthened its infrastructure and academic systems through:

- Engineering workshops and laboratories
- Computer laboratories
- Technical skill development programs
- Industrial visits and training
- Student mentoring and career guidance

The Polytechnic also maintains **industry collaborations** to facilitate training, internships, and placement opportunities. It plays a crucial role in developing technically skilled diploma engineers who contribute to industrial productivity and national development.

With continuous academic and infrastructural development, the Polytechnic institution is well-positioned to integrate into the proposed **TKR DEEMED TO BE UNIVERSITY (TKRDU)** framework and support vertical mobility pathways for diploma students into degree programs.

## Vision

To be a **leading institution in diploma-level technical education**, producing skilled technicians capable of contributing to industrial and technological growth.

The institution aims to:

- Provide quality diploma-level technical education
- Promote practical skill development
- Support industry-oriented learning
- Encourage technical innovation
- Enhance employability of diploma graduates
- Contribute to national skill development initiatives

## Mission

The institution is committed to developing skilled diploma engineers through:

- Providing Practical-Oriented Education
- Delivering diploma programs focused on applied technical knowledge.
- Maintaining Modern Workshops and Laboratories
- Ensuring hands-on learning environments.
- Employing Skilled Faculty
- Providing technical mentorship and professional guidance.
- Strengthening Industry Interaction
- Facilitating industrial visits, training, and internships.
- Promoting Technical Skill Development
- Enhancing employability and technical competence.
- Supporting Academic Progression
- Encouraging students to pursue higher education.

## Objectives

- Provide quality diploma-level technical education
- Develop industry-ready technical skills
- Strengthen practical learning environments
- Enhance employability of diploma graduates
- Promote technical competency and innovation

## Core Values

- Technical Excellence
- Practical Learning
- Professional Discipline
- Innovation
- Responsibility

- Lifelong Learning

### Quality Policy

The Polytechnic institution is committed to delivering quality technical education through:

- Continuous curriculum improvement
- Skill-based learning
- Infrastructure enhancement
- Industry collaboration

Ensuring students acquire **industry-relevant technical competencies**.

## Programs Offered — Diploma

### Diploma Programs

- Diploma in Civil Engineering
- Diploma in Electrical and Electronics Engineering (EE
- Diploma in Electronics and Communication Engineering (EC)
- Diploma in Mechanical Engineering
- Diploma in Computer Science Engineering

## 2.3 15-Year Strategic Vision Plan for TKR Deemed to be University (TKRDU)

SWOC Analysis for 15-Year Strategic Vision and 5-Year Rolling Implementation Plan

A comprehensive **SWOC (Strengths, Weaknesses, Opportunities, and Challenges) Analysis** was conducted to support the development of a **15-Year Strategic Vision Plan** and a **5-Year Rolling Implementation Plan** for the proposed **TKR Deemed to be University (TKRDU)**. The analysis reflects the institutional capabilities, growth potential, and alignment with national priorities in technical and professional education.

### 2.3.1 SWOC Analysis

### Strengths

1. Strong Institutional Legacy and Academic Credibility
   - Established under the aegis of **TKR Educational Society**, with over two decades of contribution to professional education.
   - Proven institutional growth with expansion from modest initial intake levels to large multidisciplinary student strength.
   - Recognized reputation for academic excellence, discipline, and outcome-based education.
   - Consistent performance in university examinations, placements, and academic achievements.

2. Comprehensive Academic Infrastructure
   - Well-established campuses with **modern laboratories, digital classrooms, libraries, and computing facilities**.
   - Strong infrastructure supporting **Engineering, Management, and allied disciplines**.

- Availability of research laboratories and advanced computing environments.
- Continuous infrastructure development aligned with emerging technological needs.

3. Experienced Faculty and Academic Ecosystem
   - Qualified and experienced faculty with strong academic and research orientation.
   - Regular faculty development programs and training initiatives.
   - Student-centric teaching-learning practices including project-based learning and internships.
   - Integration of academic delivery with practical exposure.

4. Industry Linkages and Employability Focus
   - Established partnerships with industries for internships, training, and placement support.
   - Regular industry interactions, guest lectures, and live project opportunities.
   - Strong placement ecosystem supporting graduate employability.
   - Focus on entrepreneurship and innovation development.

5. Innovation and Research Orientation
   - Promotion of innovation-driven education and interdisciplinary projects.
   - Encouragement of startups, innovation cells, and intellectual property creation.
   - Participation in funded research projects and collaborative initiatives.
   - Development of research culture among students and faculty.

6. Alignment with National Educational Priorities
   - Alignment with **NEP 2020** emphasizing multidisciplinary education.
   - Focus on **skill development, digital learning, and employability enhancement**.
   - Contribution toward national technological growth and innovation ecosystem.
   - Support for India's vision of becoming a global knowledge hub.

## Weaknesses

1. Rapid Expansion and Resource Optimization Needs
   - Expansion in programs requires proportional growth in infrastructure and faculty strength.
   - Need for continuous monitoring of resource allocation across departments.
   - Requirement for long-term planning to ensure sustainable development.

2. Need for Enhanced Research Output
   - Requirement to increase research publications in high-impact journals.
   - Need for strengthening patent filing and technology commercialization activities.
   - Limited interdisciplinary research collaborations at large scale.

3. International Visibility and Global Outreach
   - Limited global collaborations and student exchange programs.
   - Need for increased participation in international academic networks.
   - Requirement to enhance global academic branding.

4. Digital Transformation Requirements
   - Need to expand Learning Management Systems (LMS) and hybrid learning platforms.
   - Requirement to strengthen cybersecurity and IT infrastructure.
   - Need for adoption of emerging educational technologies.

## Opportunities

1. Favourable Policy and Regulatory Environment
   - **NEP 2020** encourages multidisciplinary universities.
   - UGC initiatives supporting institutional autonomy and innovation.
   - Increasing demand for skill-based and technology-driven education.
   - Government initiatives supporting research and entrepreneurship.

2. Growing Demand for Technical and Professional Education
   - Rapid growth in demand for engineers, management professionals, and IT specialists.
   - Increasing industry demand for emerging technologies such as **AI, Data Science, and Cybersecurity**.
   - Expansion of startup ecosystem creating opportunities for innovation-based education.

3. Technology-Driven Education and Innovation
   - Adoption of **Artificial Intelligence, Data Analytics, IoT, and Cloud Computing** in education.
   - Growth of simulation-based and virtual learning platforms.
   - Opportunities to establish innovation hubs and incubation centers.

4. Industry Collaboration and Research Partnerships
   - Opportunities for collaborative research with industries and research institutions.
   - Expansion of consultancy services and technology development projects.
   - Potential funding support from government and private agencies.

5. Global Collaboration Opportunities
   - Potential for academic partnerships with international universities.
   - Faculty exchange and joint research programs.
   - Opportunities to attract international students.

## Challenges

1. Regulatory Compliance and Academic Governance
   - Need to comply with multiple regulatory authorities.
   - Requirement to maintain academic standards and accreditation benchmarks.
   - Continuous monitoring of quality assurance mechanisms.

2. Maintaining Academic Excellence During Expansion
   - Ensuring quality delivery while increasing student intake.
   - Maintaining student-faculty ratio and infrastructure adequacy.
   - Sustaining high academic standards across programs.

3. Faculty Recruitment and Development
   - Availability of highly qualified faculty in emerging technologies.
   - Need for continuous faculty upskilling.
   - Requirement for interdisciplinary teaching capabilities.

4. Technology Integration and Infrastructure Investment
   - Requirement for significant investment in digital infrastructure.

- Adoption of advanced laboratory and research technologies.
- Ensuring cybersecurity and digital resilience.

### 2.3.2 Strategic Goals (15-Year Strategic Vision Goals)

To emerge as a globally respected multidisciplinary university integrating science, engineering, management, and emerging technologies to promote innovation, knowledge creation, and sustainable societal development.

#### 1. Academic Excellence and Programme Expansion

- Establish TKRDU as a nationally recognized multidisciplinary university.
- Expand undergraduate, postgraduate, and doctoral programs across Engineering, Management, and emerging disciplines.
- Introduce industry-relevant and future-oriented programs.
- Strengthen curriculum aligned with global standards.

#### 2. Research, Innovation, and Entrepreneurship

- Develop strong research ecosystems supporting innovation and technology development.
- Promote patent generation, startup incubation, and technology transfer.
- Encourage interdisciplinary research collaborations.
- Establish centers of excellence in emerging technologies.

#### 3. Industry Integration and Employability

- Strengthen industry partnerships for internships and placements.
- Introduce industry-certified training programs.
- Enhance employability through skill-based education.
- Develop entrepreneurship and startup culture.

#### 4. Faculty Excellence and Human Resource Development

- Recruit highly qualified faculty members.
- Promote faculty development and research engagement.
- Encourage interdisciplinary collaboration.
- Establish leadership development programs.

#### 5. Digital Transformation and Smart Campus Development

- Implement advanced Learning Management Systems.
- Introduce smart classrooms and digital laboratories.
- Use data analytics for academic planning and performance monitoring.
- Enhance IT infrastructure and cybersecurity systems.

### 6. Global Engagement and Institutional Reputation

- Establish international collaborations.
- Promote faculty and student exchange programs.
- Achieve national and international rankings.
- Enhance global visibility and recognition.

### 7. Governance, Quality Assurance, and Sustainability

- Strengthen transparent governance mechanisms.
- Implement continuous quality improvement frameworks.
- Ensure financial and environmental sustainability.
- Maintain compliance with regulatory standards.

### Table 2.3: Years Phased Strategic Vision Plan Matrix (15-Year Plan – TKRDU)

| Strategic Goal | Phase I – Foundation (Years 1–5) | Phase II – Integration & Expansion (Years 6–10) | Phase III – Global Leadership (Years 11–15) | Key Performance Indicators (KPIs) |
|---|---|---|---|---|
| 1. Multidisciplinary Academic Ecosystem | Strengthen core Engineering, Management, and Allied programmes; introduce foundation courses in emerging technologies and Indian Knowledge Systems (IKS) | Launch interdisciplinary programmes integrating Engineering, Management, Computing, and Applied Sciences | Recognition as a leading multidisciplinary university offering globally benchmarked programmes | New multidisciplinary programmes introduced; IKS-integrated curricula; Student diversity ratio |
| 2. Emerging Technologies & Innovation Leadership | Establish centres for AI, Data Science, IoT, and Cybersecurity; initiate pilot technology labs | Develop standardized innovation frameworks and interdisciplinary research laboratories | Recognition as a centre of excellence in emerging technologies and innovation | Number of innovation labs; Industry-supported programmes; Technology-based outcomes |
| 3. Research, Innovation & Knowledge Translation | Establish research centres in Engineering, Management, and Applied Sciences | Promote funded projects, collaborative research, patent filing, and product development | Global recognition for research output, patents, and technology commercialization | Funded projects; Patents filed; Research publications; Technology transfer initiatives |
| 4. Digital | Implement Learning | Develop AI- | Establish fully | Digital platforms |

| | | | | |
|---|---|---|---|---|
| Transformation & Smart Campus Development | Management Systems (LMS), digital classrooms, and centralized data systems | enabled smart classrooms, simulation laboratories, and analytics-driven academic systems | digital, AI-driven smart university infrastructure | deployed; AI tools in use; Technology-enabled learning outcomes |
| 5. Industry Integration & Community Engagement | Establish structured internship and industry training programmes | Expand consultancy services, industry collaboration projects, and community skill development initiatives | Achieve large-scale societal and industrial impact through collaborative models | Industry partnerships; Community programmes; Placement outcomes |
| 6. Faculty Excellence & Capacity Building | Conduct faculty training programs and encourage research participation | Promote interdisciplinary teaching, joint research, and global exposure | Establish globally recognized faculty leadership in research and teaching | Faculty trained; Certifications obtained; Leadership roles achieved |
| 7. Innovation, Entrepreneurship & Startup Ecosystem | Establish incubation centres and innovation support systems | Promote student startups and industry-based innovation projects | Develop globally recognized innovation and entrepreneurship ecosystem | Startups incubated; Industry partnerships; Revenue from innovation activities |
| 8. Global Engagement, Policy Influence & Sustainability | Develop national academic collaborations and partnerships | Expand international collaborations, dual degree programs, and research exchanges | Achieve global recognition and sustainable governance practices | Global MoUs signed; International collaborations; Sustainability metrics |

## 2.4 Five years rolling implementation plans (2026-2030)

The rolling implementation plans for Academic plan, faculty recruitment plan, student admission

plan, research plan, campus information and communication technology plan, infrastructure plan, finance plan, administrative plan and governance plan.

### 2.4.1 Academic plan

The five year's academic plan consists of year-wise starting of UG/ PG/ Ph.D programs, duration, intake, and the curriculum for the programs which are going to be started in 2026-27, followed by the distinctive programs that are also presented.

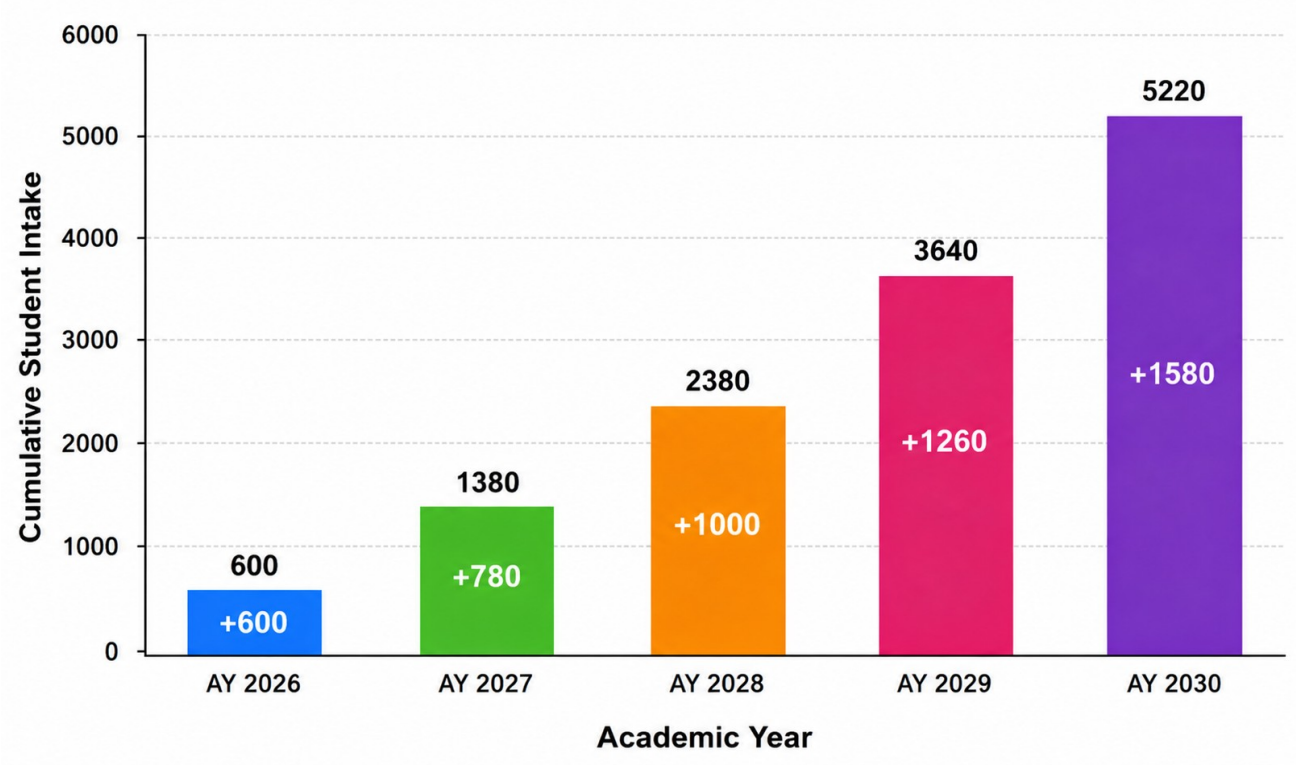
**Table 2.4 The academic programs, duration, year of starting, current intake and feature intake**

| S No | Subject | Duration | Current Intake | Increased Intake | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | 2026 | 2027 | 2028 | 2029 | 2030 |
| **School of Emerging Engineering & Technology (22 Courses)** | | | | | | | | |
| 1 | B.Tech Electric Vehicle Technology | 4 | | 60 | 30 | 30 | 30 | 60 |
| 2 | B.Tech Robotics and Intelligent Automation | 4 | | 60 | 30 | 30 | 30 | 60 |
| 3 | B.Tech Cyber Threat Intelligence | 4 | | 60 | 30 | 30 | 30 | 60 |
| 4 | B.Tech Renewable Energy Systems | 4 | | 60 | 30 | 30 | 30 | 60 |
| 5 | B.Tech Artificial Intelligence & Intelligent Systems | 4 | | 60 | 30 | 60 | 30 | 60 |
| 6 | B.Tech Drone Technology | 4 | | 60 | 30 | 30 | 30 | 60 |
| 7 | B.Tech Smart Manufacturing | 4 | | | 60 | | 30 | 30 |
| 8 | B.Tech Internet of Things | 4 | | | 60 | | 30 | 60 |
| 9 | B.Tech Quantum Computing | 3 | | | 60 | | 30 | 40 |
| 10 | B.Tech Autonomous Systems | 4 | | | 60 | | 30 | |
| 11 | M.Tech Blockchain Technology | 2 | | | 30 | 20 | 20 | 20 |
| 12 | B.Tech Augmented & Virtual Reality | 4 | | | | 60 | 30 | |
| 13 | B.Tech Biomedical Instrumentation | 4 | | | | 60 | 30 | |
| 14 | B.Tech Nanotechnology | 4 | | | | 60 | 50 | |
| 15 | B.Tech Sustainable Engineering | 4 | | | | 60 | 40 | |
| 16 | M.Tech Mechatronics Engineering | 2 | | | | 30 | 30 | 30 |
| 17 | B.Tech Climate Technology | 4 | | | | | 80 | 40 |
| 18 | B.Tech Hydrogen Energy Systems | 4 | | | | | 80 | 40 |
| 19 | B.Tech Space Technology | 4 | | | | | 80 | 40 |
| 20 | B.Tech Smart Infrastructure Engineering | 4 | | | | | 80 | 60 |
| 21 | B.Tech Digital Twin Technology | 4 | | | | | | 120 |
| 22 | Ph.D. in Artificial Intelligence & Sustainable Engineering Systems | 3 | | | 30 | | | 30 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **School of Social Sciences (7 Courses)** | | | | | | | | |
| **23** | **B.A Sustainable Infrastructure Planning** | **4** | | **60** | **30** | **30** | **30** | **60** |
| **24** | **B.A Innovation and Design Thinking** | **4** | | **60** | **30** | **30** | **30** | **60** |
| **25** | **B.A Public Policy & Governance** | **4** | | | | | | **80** |
| **26** | **B.A Urban Development Studies** | **4** | | | **60** | **40** | | **40** |
| **27** | **B.A Disaster Management** | **4** | | | | **40** | **40** | |
| **28** | **B.A Behavioral Sciences** | **3** | | | | | **80** | **20** |
| **29** | **Ph.D. in Public Policy, Governance & Behavioral Sciences** | **3** | | | | | | **30** |
| **School of Pharmacy (7 Courses)** | | | | | | | | |
| **30** | **B.Pharm Intelligent Healthcare Systems** | **4** | | **60** | **30** | **60** | **30** | **60** |
| **31** | **B.Pharm Clinical Data Science** | **4** | | **60** | **30** | **60** | **30** | **60** |
| **32** | **B.Pharm Pharmacovigilance** | **4** | | | **60** | **40** | | |
| **33** | **B.Pharm Regulatory Affairs** | **4** | | | | **60** | | **20** |
| **34** | **B.Pharm Industrial Pharmacy** | **4** | | | | | **80** | **20** |
| **35** | **B.Pharm Pharmaceutical Biotechnology** | **4** | | | | | | **120** |
| **36** | **Ph.D. in Pharmaceutical Sciences & Clinical Research** | **3** | | | | | | **30** |
| **School of Management Sciences (4 Courses)** | | | | | | | | |
| **37** | **BBA Healthcare Management** | **4** | | | **60** | **60** | **20** | **20** |
| **38** | **MBA Health Informatics** | **2** | | | | **80** | **40** | **40** |
| **39** | **MBA Pharmaceutical Management** | **2** | | | | | **60** | **20** |
| **40** | **Ph.D. in Healthcare Management & Digital Business Analytics** | **3** | | | | | | **30** |
| | **Total** | | **2299** | **600** | **780** | **1000** | **1260** | **1580** |

The total **40 academic programs** are offered across the **four constituent Colleges/Schools of TKR Deemed to be University (TKRDU)**, encompassing diverse disciplines such as **Engineering and Technology, Computer Science, Management Sciences, Pharmaceutical Sciences, and Polytechnic Engineering**, thereby reflecting a **multidisciplinary academic framework** designed to fulfil the vision of the University in delivering quality technical, professional, and skill-oriented education.

## Graphical presentation of year wise enrolment from 2026–27 to 2030–31




The University demonstrates a strong multidisciplinary approach by offering 40 academic programs across four constituent Colleges/Schools, including Engineering and Technology, Management Sciences, Pharmaceutical Sciences, and Polytechnic Engineering. The academic structure is predominantly focused on engineering, technology, and professional education, with TKR College of Engineering & Technology offering the largest number of undergraduate and postgraduate programs across multiple engineering disciplines, while TKR Institute of Management and Sciences, Teegala Krishna Reddy College of Pharmacy, and TKR College of Engineering & Technology Polytechnic contribute specialized programs in management, pharmaceutical sciences, and diploma engineering education.

Program durations vary from 2-year postgraduate programs such as M.Tech, MBA, and M.Pharm to 3-year diploma programs and 4-year undergraduate programs such as B.Tech and B.Pharm, ensuring vertical and lateral academic mobility across disciplines. Intake capacities are substantial in foundational programs, particularly across Computer Science and Engineering and emerging specializations such as Artificial Intelligence & Machine Learning and Data Science, while postgraduate programs maintain comparatively smaller cohorts to support focused advanced learning and research activities.

The total intake capacity across all constituent colleges is planned to expand progressively across multiple phases in alignment with institutional growth strategies, infrastructure development, and industry-driven academic expansion, thereby strengthening the University's capacity to deliver multidisciplinary and industry-relevant education.

**Table 2.5 Year wise proposed UG, PG and Ph.D programs and total number of programs**

| S | Year | UG | PG | Ph.D | Total |
|---|---|---|---|---|---|

| No. | | | | | |
|---|---|---|---|---|---|
| 1 | 2026-27 | 10 | | | 10 |
| 2 | 2027-28 | 7 | 1 | 1 | 9 |
| 3 | 2028-29 | 6 | 2 | | 8 |
| 4 | 2029-30 | 6 | 1 | | 7 |
| 5 | 2030-31 | 2 | | 3 | 5 |
| | **Total** | **31** | **5** | **4** | **40** |

The proposed **total number of academic programs is 40** under the **five-year rolling plan (2026–2030)** of TKR Deemed to be University (TKRDU). Out of these, **existing programs form the academic foundation**, while several **new undergraduate (UG), postgraduate (PG), and doctoral (Ph.D.) programs** are planned to be introduced in a phased manner to strengthen multidisciplinary education.

During the academic year **2026–27**, the University proposes to introduce **eight new UG programs and one new PG program**, focusing on emerging and industry-relevant areas within **Engineering and Technology, Management Sciences, and Pharmaceutical Sciences**. In **2027–28**, **three additional UG programs** are planned to expand undergraduate opportunities in specialized and interdisciplinary domains. In **2028–29**, the University proposes to introduce **three UG programs, one PG program, and one Ph.D. program**, thereby initiating structured research activities in selected disciplines.

Further expansion is planned in **2029–30** with the introduction of **four UG programs**, enhancing capacity in high-demand technical and professional fields. In the final phase of the rolling plan, **2030–31**, the University proposes to introduce **two UG programs, eight PG programs, and three Ph.D. programs**, significantly strengthening postgraduate education and research capabilities. This phased introduction of programs reflects the University's strategic commitment to academic diversification, research development, and alignment with national priorities in higher education.

## Institutional Readiness & Strategic Rationale (TKRDU Version)

**TKR Deemed to be University (TKRDU)** is uniquely positioned to introduce the proposed academic programs due to its **well-established academic–industry–research ecosystem**, which includes **engineering and technology programs, pharmaceutical sciences, management education, polytechnic education, innovation facilities, and industry collaboration platforms**.

Unlike conventional single-discipline institutions, **TKRDU functions within a multidisciplinary technical education environment**, enabling **practice-based learning, applied research, innovation-driven education, and strong industry relevance**. This institutional strength provides a strong justification for introducing **technology-enabled, management-oriented, pharmaceutical, and emerging interdisciplinary programs** under a unified multidisciplinary academic framework.

The proposed programs are **not standalone offerings**; rather, they are strategically designed to leverage the **existing strengths of TKRDU constituent colleges**, particularly in **Engineering and Technology, Computer Science, Management Sciences, Pharmaceutical Sciences, and Diploma Engineering Education**, thereby expanding the University's role as a **comprehensive technical and professional education institution**.

## Alignment with UGC Vision & National Priorities (TKRDU Version)

The introduction of the proposed programs is aligned with the **vision of the University Grants Commission (UGC)** and **national higher education priorities**, particularly:

### UGC Vision

- Promotion of **multidisciplinary universities**
- Strengthening **quality technical and professional education**
- Enhancing **research and innovation ecosystems**

Alignment with National Education Policy (NEP) 2020

The proposed programs support the key objectives of **NEP 2020**, including:

- **Multidisciplinary and interdisciplinary education**
- Promotion of **research, innovation, and entrepreneurship**
- Integration of **Indian Knowledge Systems (IKS)** where relevant
- Emphasis on **skill development and employability**
- Adoption of **technology-enabled teaching and learning**
-

### Alignment with National Priorities

The proposed programs are designed to support national priorities in:

- **Digital transformation and Industry 4.0 technologies**
- **Artificial Intelligence, Data Science, Cyber Security, and Automation**
- **Sustainable engineering and renewable energy technologies**
- **Pharmaceutical innovation and healthcare technology support**
- **Entrepreneurship development and startup ecosystem growth**
- **Skill-based technical education and workforce readiness**
-

### TKRDU Strategic Justification Statement

TKRDU's strong foundation in **engineering, technology, pharmacy, management, and polytechnic education** enables the proposed programs to be implemented with **academic depth, industry relevance, and societal impact**, thereby fulfilling **UGC quality, employability, and innovation benchmarks** while supporting regional and national development goals.

### Table 2.6 Proposed Distinctive Programs

| S No | Name of Distinct / Unique Multi-Disciplinary Program | Why is the Program Distinct? | Annual Intake | Eligibility | Lead Institution(s) / Department(s) |
|---|---|---|---|---|---|
| 1 | B.Tech Electric Vehicle Technology | Focuses on electric mobility, battery systems, and sustainable transportation technologies aligned with national clean energy initiatives and Industry 4.0 advancements. | 60 | HSC | TKR College of Engineering & Technology – Department of Electrical Engineering |
| 2 | B.Tech Robotics and Intelligent Automation | Integrates robotics, artificial intelligence, sensors, and automation systems to support smart manufacturing and industrial automation. | 60 | HSC | TKR College of Engineering & Technology – Department of Mechanical Engineering |
| 3 | B.Tech Cyber Threat Intelligence | Provides specialized knowledge in cybersecurity, ethical hacking, and cyber threat analysis to address national cyber security challenges. | 60 | HSC | TKR College of Engineering & Technology – Department of Computer Science / IT |
| 4 | B.Tech Renewable Energy Systems | Focuses on solar, wind, and hybrid energy technologies supporting sustainable energy and environmental goals. | 60 | HSC | TKR College of Engineering & Technology – Department of Electrical Engineering |
| 5 | B.Tech | Combines artificial intelligence, | 60 | HSC | TKR College of |

| | | | | | |
|---|---|---|---|---|---|
| | Artificial Intelligence and Intelligent Systems | machine learning, and intelligent computing technologies to develop smart solutions across industries. | | | Engineering & Technology – Department of CSE |
| 6 | B.Tech Drone Technology | Integrates unmanned aerial systems, embedded systems, and geospatial technologies for applications in agriculture, surveillance, and logistics. | 60 | HSC | TKR College of Engineering & Technology – Department of Electronics & Communication Engineering |
| 7 | B.Tech. Sustainable Infrastructure Planning | Combines civil engineering fundamentals with environmental planning and sustainability concepts to support smart city development. | 60 | HSC | TKR College of Engineering & Technology / Humanities & Social Sciences |
| 8 | B.Tech. Innovation and Design Thinking | Develops creative problem-solving, entrepreneurship, and innovation skills through interdisciplinary design-based learning approaches. | 60 | HSC | TKR Institute of Management and Sciences |
| 9 | B.Pharm Intelligent Healthcare Systems | Integrates pharmaceutical sciences with healthcare technologies and intelligent systems for improved patient care and drug management. | 60 | B.Pharm | Teregala Krishna Reddy College of Pharmacy |
| 10 | B.Pharm Clinical Data Science | Combines healthcare data analytics, statistics, and computing tools to support evidence-based healthcare and pharmaceutical decision-making. | 60 | B.Pharm | Teregala Krishna Reddy College of Pharmacy |

The programs listed above are designed to incorporate **multiple exit options** in accordance with the provisions of the **National Education Policy (NEP) 2020**, thereby enabling flexible academic pathways, skill-based progression, and enhanced employability opportunities for students. These programs may also be extended to support **integrated postgraduate and doctoral pathways**, including the provision for an additional **three-year integrated Ph.D. program**, thereby strengthening research capabilities and promoting innovation-driven academic growth.

The strategic vision of **TKR Deemed to be University (TKRDU)** aligns closely with national priorities outlined by the **University Grants Commission (UGC)** and the **Seventeen Sustainable Development Goals (SDGs)**. This alignment ensures that the University's academic initiatives contribute significantly to **technological advancement, sustainable development, industry readiness, and societal progress**, fostering the well-being of people, environmental sustainability, and economic prosperity over the next fifteen years.

### 2.4.1.1 Distinct Features of the Proposed Programs

### 1. B.Tech Electric Vehicle Technology

Specialized Program Focused on Electric Mobility and Sustainable Transportation
In a B.Tech in Electric Vehicle Technology, the program restructures itself to align with the world change towards electric and clean energy transportation. This is an electrification of the vehicle field combining electrical engineering, electronic batteries and mobility with data usage for training people to be ready in the electric vehicle sector. Accordingly, by following the curriculum, students first learn the method of manufacture of electric vehicles, then the mode of their movement, how batteries work, the battery management systems and finally the charging stations. Also, lessons cover how vehicles are linked to the electric grid, power electronics, motor control, technicians' diagnosis and repair of faults. So, this program is very much inclined towards technical areas contrary to the standard engineering courses.

To promote environmentally friendly transport, the program demands the integration of solar as well as wind energy with electric vehicles. Providing hands-on learning through simulation, model making and battery testing are the focus points of the course. Internships, working in energy storage laboratories, prototype development are some of the activities through which students enhance their technical skills and thus the employment opportunities. Owing to the increasing number of governments along with international projects on electric mobility, graduates are greatly likely to find jobs. To cite examples, they could be involved in electric vehicle designing, battery system engineering or electric vehicle maintenance specialist roles.

### 2. B.Tech Robotics and Intelligent Automation

B.Tech in Robotics and Automation Engineering is a degree program which is in line with the latest industrial developments. It merges robotics, artificial intelligence and automation technologies to meet the demands of modern manufacturing environments. To prepare students, the program teaches industrial robotics, robotic programming, sensors and actuators. It features automation systems, machine vision, intelligent robotics and man-machine interaction - this course is very technical and therefore it stands apart from general mechanical engineering. To acquire technical skills, students are engaged in working with the

robots in the laboratories and also modeling the automated systems. By handling industrial robots as well as creating intelligent systems, they not only gain theoretical knowledge but also practical skills. The degree holders are capable of working with automated production systems and the factories of the future. They are able to conduct robotics based quality inspection or improve industrial processes. As the smart manufacturing industry is booming, there are many positions for those who have obtained this qualification.

### 3. B.Tech Cyber Threat Intelligence

The B.Tech in Cyber Security along with Threat Intelligence is a focused course designed to tackle the escalating challenges in digital security - guiding students through various aspects of cybersecurity, threat intelligence and secure information systems. This course enables students to gain profound knowledge of ethical hacking, penetration testing, cyber threat detection and analysis, digital forensics, network security, cloud security, cyber law and data protection. In fact, these academic areas are well-aligned not only with the current needs of the industry but also with those of government organizations. By leveraging cybersecurity simulation labs, incident response exercises, threat monitoring systems and secure network architecture design, the course emphasizes hands-on training. These activities are the ones which equip the students with the capabilities to recognize, prevent as well as to respond effectively to cyber threats. Upon completion of this course, a student will be equipped with the knowledge and skills to contribute to national cybersecurity efforts and safeguard digital infrastructure. Moreover, individuals having such training can be part of IT banking defense healthcare telecommunication or multinational corporations as these sectors require professionals with cybersecurity skills very urgently.

### 4. B.Tech Renewable Energy Systems

Bachelor of Technology in Renewable Energy Engineering is a degree for young people who are concerned with energy issues on a global scale. During the course, the students explore various ways to design, build and operate systems that generate energy from clean sources. It aligns with the global transition towards clean energy as the components of the curriculum are heavily geared towards the technical aspects of clean energy. For instance, students examine the working of solar cells, the generation of power from the wind as well as the operation of hybrid systems. Besides, they study the storage of energy and the control of smart power grids to get a complete picture of the sector. Through hands-on experience with both real solar installations and virtual models of wind turbines students are able to learn the necessary technical skills. Besides the technical aspects, a major part of the course is devoted to how people measure their energy consumption and plan new projects for renewable energy systems. On graduation, they have the knowledge of the industry to work at the national as well as international levels. They play a role in producing clean energy as well as making sure that people use electricity efficiently. Armed with their knowledge of the environment, these graduates are able to support sustainable practices. And because the industry of renewable energy is booming, they have lots of opportunities for employment.

### 5. B.Tech Artificial Intelligence and Intelligent Systems

This Bachelor of Technology program in Artificial Intelligence encompasses Intelligent Computing as well as computer science and the various technologies behind artificial intelligence. These fields are integrated to enable the students to develop intelligent systems capable of thinking and acting like humans. The course syllabus features workshops, labs and lectures covering machine learning algorithm development, the training of deep learning models, use of toolkits for natural language processing, image

processing and decision-making AI systems. The subjects emphasize on the technical aspects so that the students grasp the real-world AI implementation perspectives.

Besides theory, students get hands-on practice through AI-based automation projects coupled with predictive analytics. Integration of intelligent robotics and smart apps allows students to use the hybrid hands and brains to go around the problem world. In addition to acquiring the respective knowledge, skills and competencies in designing intelligent systems, data science, automation and robotics that enable them to be employable, the graduates will also have exposure to the job market through the various opportunities that companies in the advanced technology sectors have for AI skilled professionals.

### 6. B.Tech Drone Technology

The B.Tech program in Drone Technology and Unmanned Aerial Systems is a highly specialized one that revolves around the design, operation, and utilization of drones in various industries. It integrates aerospace principles with embedded systems education, enabling students to learn about drone aerodynamics, flight control systems, embedded system designing, GPS and navigation systems, as well as remote sensing technologies. Besides theoretical knowledge, a great emphasis is placed on experiential learning through activities such as drone assembly calibration flight simulation testing aerial data collection, and geographic mapping applications, which facilitate excellent technical-skills development through hands-on experience. Later on, the graduates will be equipped to contribute in the areas of Agriculture, disaster management surveillance infrastructure monitoring, logistics, and delivery systems which are the principal sectors leveraging drones and smart mobility devices offering them extensive career avenues.

### 7. B.Tech. Sustainable Infrastructure Planning

B.Tech in Sustainable Infrastructure and Smart City Engineering is a multi-disciplinary course that aims at integrating infrastructure planning with environmental conservation thereby promoting modern urban development. The syllabus offers a detailed learning in urban infrastructure planning, Environmental Impact Assessment, smart city development strategies, resource-efficient construction planning, and sustainable transportation systems which are very much in line with tomorrow's urbanization requirements. This course equips students with the ability to solve issues of urban sprawl, resource wastage, and the lack of environmentally friendly infrastructures through technological solutions. The graduates can contribute significantly towards building national infrastructures, smart cities, sustainable transport systems, and other development projects that comply with the environment and sustainability at the same time.

### 8. B.Tech Innovation and Design Thinking

B.Tech in Innovation, Design and Entrepreneurship Engineering is a program designed with the future in mind through the focus on creativity, innovation, and entrepreneurial skill development to equip students for leadership roles in emerging industries. The program uses a design-oriented pedagogy to impart knowledge of design thinking techniques, innovation management, product designing and prototyping, entrepreneurship development, and the concepts of startup incubation.The syllabus centers on experiential learning via prototype making, innovation bootcamps, business model generation, and startup incubation initiatives, allowing students to convert their ideas into tangible and marketable solutions. The graduates have the potential to become innovators, product designers, startup creators, business planners, and leaders

in the industry who can propel technology-based companies and make a contribution to economic development.

### 9. B.Pharm Intelligent Healthcare Systems

The program B.Pharm in Pharmaceutical Technology and Digital Healthcare is an interdisciplinary course that integrates pharmaceutical sciences with contemporary healthcare technologies to meet the changing demands of digital healthcare delivery. The syllabus offers specialized training in health informatics, digital pharmacy systems, intelligent drug monitoring, patient data management, and automated pharmaceutical systems thereby mixing healthcare knowledge and technological proficiency. Besides, this course through its focus on practical aspects of technology-driven healthcare facilities aim at students to make use of their skills by streamlining, securitizing and bringing accuracy in medication management and patient care systems. Besides enhancing student capabilities, the programme is designed in a way that students can build a profile that is viable to work in smart hospital systems, digital healthcare platforms, pharmaceutical data analytics, healthcare automation and next generation medical support services in both public and private healthcare

### 10. B.Pharm Clinical Data Science

B.Pharm in Healthcare Data Science and Analytics is a program based on data analytics that intend to use R & D techniques along with Big Data tools opening possibilities for clinical decision-making, healthcare management, and medical research. The curriculum grants you solid skills training in clinical data analysis, modelling of the statistical processes, forecasting healthcare analytics, management of healthcare databases, and ML applications in healthcare making student develop both technical and domain skills. On the other hand, the program by way of research-oriented learning through clinical data analysis projects, modelling of healthcare datasets, and thesis-based investigative work enables students to work on real-life healthcare problems using evidence-based methods. Among others, the program also prepares students to handle clinical research organizations hospitals healthcare systems, pharmaceutical industries, public health agencies, and digital health enterprises where the demand for healthcare analytics professionals is growing at a rapid pace.

## 2.4.1.2 Proposed Distinctive Programs Course Structure

### 1. B.Tech Electric Vehicle Technology

### Objectives of the Program

- To impart foundational and advanced knowledge in electric vehicle systems, battery technologies, and sustainable transportation engineering.

- To develop skills in electric propulsion systems, power electronics, and energy storage technologies.
- To train students in the design, modeling, and implementation of electric mobility solutions and charging infrastructure.
- To integrate renewable energy technologies with electric vehicle systems for sustainable mobility solutions.
- To promote awareness of environmental sustainability, safety standards, and regulatory practices in electric mobility.
- To encourage innovation, research, and entrepreneurship in electric vehicle technologies.
- To prepare graduates for careers in electric vehicle manufacturing, energy systems development, sustainable transportation, and higher education.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | EVT101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | EVT102 | Introduction to Electric Vehicle Technology | 3 | 0 | 0 | 3 |
| 3 | EVT103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 4 | EVT104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | EVT105 | Basics of Electrical Engineering | 3 | 0 | 0 | 3 |
| 6 | EVT106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | EVT107 | Electrical Engineering Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | EVT151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | EVT152 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 10 | EVT153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | EVT154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | EVT155 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 13 | EVT156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | EVT157 | Digital Logic Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| II Year I Semester | | | | | | |
| 15 | EVT201 | Electric Circuits | 3 | 0 | 0 | 4 |
| 16 | EVT202 | Electronic Devices & Circuits | 3 | 0 | 0 | 3 |
| 17 | EVT203 | Electrical Machines – I | 3 | 0 | 0 | 3 |
| 18 | EVT204 | Signals & Systems | 3 | 0 | 0 | 3 |
| 19 | EVT205 | Battery Technology Fundamentals | 3 | 0 | 0 | 3 |
| 20 | EVT206 | Circuits Lab | 0 | 0 | 2 | 2 |
| 21 | EVT207 | Electronics Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | EVT251 | Electrical Machines – II | 3 | 0 | 0 | 4 |
| 23 | EVT252 | Power Electronics | 3 | 0 | 0 | 3 |
| 24 | EVT253 | Control Systems | 3 | 0 | 0 | 3 |
| 25 | EVT254 | Energy Storage Systems | 3 | 0 | 0 | 3 |
| 26 | EVT255 | Electric Vehicle Architecture | 3 | 0 | 0 | 3 |
| 27 | EVT256 | Power Electronics Lab | 0 | 0 | 2 | 2 |
| 28 | EVT257 | Electrical Machines Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |
| 29 | EVT301 | Electric Drive Systems | 3 | 0 | 0 | 4 |
| 30 | EVT302 | Hybrid Electric Vehicles | 3 | 0 | 0 | 3 |
| 31 | EVT303 | Embedded Systems | 3 | 0 | 0 | 3 |
| 32 | EVT304 | Renewable Energy Systems | 3 | 0 | 0 | 3 |
| 33 | EVT305 | Automotive Electronics | 3 | 0 | 0 | 3 |
| 34 | EVT306 | Embedded Systems Lab | 0 | 0 | 2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 35 | EVT307 | EV Simulation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | EVT351 | Charging Infrastructure Technology | 3 | 0 | 0 | 4 |
| 37 | EVT352 | Electric Vehicle Diagnostics | 3 | 0 | 0 | 3 |
| 38 | EVT353 | Battery Management Systems | 3 | 0 | 0 | 3 |
| 39 | EVT354 | IoT in Electric Vehicles | 3 | 0 | 0 | 3 |
| 40 | EVT355 | Elective – I (Smart Grids / EV Design / Energy Analytics) | 3 | 0 | 0 | 3 |
| 41 | EVT356 | Battery Testing Lab | 0 | 0 | 2 | 2 |
| 42 | EVT357 | IoT Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | EVT401 | EV Safety & Standards | 3 | 0 | 0 | 4 |
| 44 | EVT402 | Sustainable Mobility Systems | 3 | 0 | 0 | 3 |
| 45 | EVT403 | Vehicle Control Systems | 3 | 0 | 0 | 3 |
| 46 | EVT404 | Entrepreneurship in EV Industry | 3 | 0 | 0 | 3 |
| 47 | EVT405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | EVT406 | EV Design Lab | 0 | 0 | 2 | 2 |
| 49 | EVT407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | EVT451 | Advanced EV Technologies | 3 | 0 | 0 | 4 |
| 51 | EVT452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | EVT453 | Elective – II (Autonomous Vehicles / Hydrogen Vehicles / EV Analytics) | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 53 | EVT454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | EVT455 | EV Testing & Validation Lab | 0 | 0 | 2 | 2 |
| 55 | EVT456 | Model Deployment Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| EVTPE01 | Advanced Battery Technologies |
| EVTPE02 | Wireless Charging Systems |
| EVTPE03 | Electric Vehicle Thermal Management |
| EVTPE04 | Fuel Cell Technology |
| EVTPE05 | Vehicle Dynamics |
| EVTPE06 | Powertrain Modeling |
| EVTPE07 | Grid Integration of EVs |
| EVTPE08 | Energy Storage Systems |

| **Open Electives (Interdisciplinary)** | |
|---|---|
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Machine Learning |
| OEC03 | Cybersecurity |
| OEC04 | Cloud Computing |
| OEC05 | Data Analytics |
| OEC06 | Smart Cities Technologies |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core EV Courses | 48 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Electives | 12 |

| | |
|---|---|
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added | 3 |
| **Total** | **160–165** |

## 2. B.Tech Robotics and Intelligent Automation

### Objectives of the Program

- To impart foundational and advanced knowledge in robotics, automation systems, and intelligent control technologies.
- To develop skills in robotic programming, sensor integration, and automation system design.
- To train students in the development of robotic systems for industrial, manufacturing, and service applications.
- To integrate artificial intelligence and machine learning with robotic automation technologies.
- To promote awareness of safety, operational standards, and ethical practices in robotics applications.
- To encourage research, innovation, and product development in intelligent automation systems.
- To prepare graduates for careers in robotics engineering, automation industries, manufacturing, and advanced research.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | RIA101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | RIA102 | Introduction to Robotics and Automation | 3 | 0 | 0 | 3 |
| 3 | RIA103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 4 | RIA104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | RIA105 | Basics of Mechanical Engineering | 3 | 0 | 0 | 3 |
| 6 | RIA106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | RIA107 | Mechanical Workshop | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | RIA151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | RIA152 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 10 | RIA153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | RIA154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | RIA155 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 13 | RIA156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | RIA157 | Digital Logic Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year I Semester | | | | | | |
| 15 | RIA201 | Electrical Circuits | 3 | 0 | 0 | 4 |
| 16 | RIA202 | Electronic Devices & Circuits | 3 | 0 | 0 | 3 |
| 17 | RIA203 | Sensors and Actuators | 3 | 0 | 0 | 3 |
| 18 | RIA204 | Signals & Systems | 3 | 0 | 0 | 3 |
| 19 | RIA205 | Kinematics of Machines | 3 | 0 | 0 | 3 |
| 20 | RIA206 | Circuits Lab | 0 | 0 | 2 | 2 |
| 21 | RIA207 | Sensors Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | RIA251 | Microprocessors & Microcontrollers | 3 | 0 | 0 | 4 |
| 23 | RIA252 | Control Systems | 3 | 0 | 0 | 3 |
| 24 | RIA253 | Robotics Engineering Fundamentals | 3 | 0 | 0 | 3 |
| 25 | RIA254 | Industrial Automation Systems | 3 | 0 | 0 | 3 |
| 26 | RIA255 | Mechatronics | 3 | 0 | 0 | 3 |
| 27 | RIA256 | Microcontroller Lab | 0 | 0 | 2 | 2 |
| 28 | RIA257 | Control Systems Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| III Year I Semester | | | | | | |
| 29 | RIA301 | Robot Kinematics and Dynamics | 3 | 0 | 0 | 4 |
| 30 | RIA302 | Embedded Systems | 3 | 0 | 0 | 3 |
| 31 | RIA303 | Artificial Intelligence for Robotics | 3 | 0 | 0 | 3 |
| 32 | RIA304 | Machine Vision Systems | 3 | 0 | 0 | 3 |
| 33 | RIA305 | Industrial Robotics | 3 | 0 | 0 | 3 |
| 34 | RIA306 | Embedded Systems Lab | 0 | 0 | 2 | 2 |
| 35 | RIA307 | Robotics Simulation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | RIA351 | Autonomous Robots | 3 | 0 | 0 | 4 |
| 37 | RIA352 | Human Robot Interaction | 3 | 0 | 0 | 3 |
| 38 | RIA353 | Internet of Things (IoT) | 3 | 0 | 0 | 3 |
| 39 | RIA354 | Smart Manufacturing Systems | 3 | 0 | 0 | 3 |
| 40 | RIA355 | Elective – I (Collaborative Robots / AI Robotics / Digital Twin Systems) | 3 | 0 | 0 | 3 |
| 41 | RIA356 | IoT Lab | 0 | 0 | 2 | 2 |
| 42 | RIA357 | Machine Vision Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | RIA401 | Advanced Robotics | 3 | 0 | 0 | 4 |
| 44 | RIA402 | Robot Safety & Standards | 3 | 0 | 0 | 3 |
| 45 | RIA403 | Robotics Project Management | 3 | 0 | 0 | 3 |
| 46 | RIA404 | Entrepreneurship in Automation | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 47 | RIA405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | RIA406 | Robotics Design Lab | 0 | 0 | 2 | 2 |
| 49 | RIA407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | RIA451 | Intelligent Robotic Systems | 3 | 0 | 0 | 4 |
| 51 | RIA452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | RIA453 | Elective – II (Swarm Robotics / Autonomous Vehicles / AI-driven Robotics) | 3 | 0 | 0 | 3 |
| 53 | RIA454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | RIA455 | Robotics Testing Lab | 0 | 0 | 2 | 2 |
| 55 | RIA456 | Deployment & Simulation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| RIAPE01 | Advanced Robotics Systems |
| RIAPE02 | Swarm Robotics |
| RIAPE03 | Soft Robotics |
| RIAPE04 | Medical Robotics |
| RIAPE05 | Drone Technology |
| RIAPE06 | Robot Operating System (ROS) |
| RIAPE07 | Collaborative Robotics (Cobots) |
| RIAPE08 | Industrial Automation Systems |

| **Open Electives (Interdisciplinary)** | |
|---|---|
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Machine Learning |
| OEC03 | Cybersecurity |

| | |
|---|---|
| OEC04 | Cloud Computing |
| OEC05 | Data Analytics |
| OEC06 | Smart Manufacturing |

| **Laboratory Components (Recommended)** |
|---|
| Essential laboratories include: |
| Robotics Laboratory |
| Sensors and Actuators Lab |
| Control Systems Lab |
| Machine Vision Lab |
| Embedded Systems Lab |
| AI and Robotics Lab |
| Industrial Automation Lab |
| Robotics Simulation Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core Robotics Courses | 48 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added | 3 |
| **Total** | **160–165** |

## 3. B.Tech Cyber Threat Intelligence

### Objectives of the Program

- To impart foundational and advanced knowledge in cybersecurity, digital forensics, and cyber threat intelligence systems.
- To develop skills in network security, ethical hacking, and cyber risk analysis.

- To train students in the identification, prevention, and mitigation of cyber threats in digital environments.
- To integrate cybersecurity technologies with emerging computing platforms such as cloud and IoT systems.
- To promote awareness of cyber laws, data privacy, and ethical practices in digital security.
- To encourage research and innovation in cyber defense mechanisms and secure computing systems.
- To prepare graduates for careers in cybersecurity operations, cyber intelligence, digital security management, and research.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | CTI101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | CTI102 | Introduction to Cyber Security | 3 | 0 | 0 | 3 |
| 3 | CTI103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 4 | CTI104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | CTI105 | Computer Organization | 3 | 0 | 0 | 3 |
| 6 | CTI106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | CTI107 | Computer Hardware Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | CTI151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | CTI152 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 10 | CTI153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | CTI154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | CTI155 | Data Structures | 3 | 0 | 0 | 3 |
| 13 | CTI156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | CTI157 | Data Structures Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| II Year I Semester | | | | | | |
| 15 | CTI201 | Discrete Mathematics | 3 | 0 | 0 | 4 |
| 16 | CTI202 | Operating Systems | 3 | 0 | 0 | 3 |
| 17 | CTI203 | Database Management Systems | 3 | 0 | 0 | 3 |
| 18 | CTI204 | Computer Networks | 3 | 0 | 0 | 3 |
| 19 | CTI205 | Cryptography Fundamentals | 3 | 0 | 0 | 3 |
| 20 | CTI206 | Operating Systems Lab | 0 | 0 | 2 | 2 |
| 21 | CTI207 | DBMS Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | CTI251 | Software Engineering | 3 | 0 | 0 | 4 |
| 23 | CTI252 | Network Security | 3 | 0 | 0 | 3 |
| 24 | CTI253 | Ethical Hacking | 3 | 0 | 0 | 3 |
| 25 | CTI254 | Web Technologies | 3 | 0 | 0 | 3 |
| 26 | CTI255 | Cyber Law and Ethics | 3 | 0 | 0 | 3 |
| 27 | CTI256 | Web Technologies Lab | 0 | 0 | 2 | 2 |
| 28 | CTI257 | Ethical Hacking Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |
| 29 | CTI301 | Malware Analysis | 3 | 0 | 0 | 4 |
| 30 | CTI302 | Intrusion Detection Systems | 3 | 0 | 0 | 3 |
| 31 | CTI303 | Digital Forensics | 3 | 0 | 0 | 3 |
| 32 | CTI304 | Cloud Security | 3 | 0 | 0 | 3 |
| 33 | CTI305 | Secure Software Development | 3 | 0 | 0 | 3 |
| 34 | CTI306 | Digital Forensics Lab | 0 | 0 | 2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 35 | CTI307 | Cloud Security Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | CTI351 | Cyber Threat Intelligence | 3 | 0 | 0 | 4 |
| 37 | CTI352 | Security Information & Event Management | 3 | 0 | 0 | 3 |
| 38 | CTI353 | IoT Security | 3 | 0 | 0 | 3 |
| 39 | CTI354 | Artificial Intelligence for Cyber Security | 3 | 0 | 0 | 3 |
| 40 | CTI355 | Elective – I (Blockchain Security / Mobile Security / Cyber Risk Management) | 3 | 0 | 0 | 3 |
| 41 | CTI356 | SIEM Lab | 0 | 0 | 2 | 2 |
| 42 | CTI357 | IoT Security Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | CTI401 | Advanced Cyber Security | 3 | 0 | 0 | 4 |
| 44 | CTI402 | Cyber Security Governance | 3 | 0 | 0 | 3 |
| 45 | CTI403 | Cyber Incident Response | 3 | 0 | 0 | 3 |
| 46 | CTI404 | Entrepreneurship in Cyber Security | 3 | 0 | 0 | 3 |
| 47 | CTI405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | CTI406 | Cyber Security Lab | 0 | 0 | 2 | 2 |
| 49 | CTI407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | CTI451 | Advanced Threat Intelligence | 3 | 0 | 0 | 4 |
| 51 | CTI452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | CTI453 | Elective – II (Cyber Warfare / Quantum Cryptography / AI Security) | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 53 | CTI454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | CTI455 | Penetration Testing Lab | 0 | 0 | 2 | 2 |
| 55 | CTI456 | Security Deployment Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| CSIPE01 | Penetration Testing |
| CSIPE02 | Cybersecurity Analytics |
| CSIPE03 | Mobile Security |
| CSIPE04 | Internet Security |
| CSIPE05 | Wireless Network Security |
| CSIPE06 | Secure Software Development |
| CSIPE07 | Cyber Law and Digital Ethics |
| CSIPE08 | Privacy and Data Protection |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Machine Learning |
| OEC03 | Data Analytics |
| OEC04 | Cloud Computing |
| OEC05 | Internet of Things |
| OEC06 | Blockchain Technology |
| OEC06 | Smart Manufacturing |

| **Recommended Laboratory Components** |
|---|
| Essential labs for this program: |
| Cybersecurity Lab |
| Ethical Hacking Lab |
| Digital Forensics Lab |
| Malware Analysis Lab |
| Network Security Lab |
| Cryptography Lab |

| |
|---|
| Security Operations Center (SOC) Lab |
| Cyber Threat Intelligence Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core Cybersecurity Courses | 48 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added | 3 |
| **Total** | **160–165** |

## 4. B.Tech Renewable Energy Systems

### Objectives of the Program

- To impart foundational and advanced knowledge in renewable energy technologies and sustainable power generation systems.
- To develop skills in solar, wind, and hybrid energy system design and implementation.
- To train students in energy storage technologies and smart grid integration methods.
- To integrate environmental sustainability principles with modern energy technologies.
- To promote awareness of energy policies, environmental regulations, and sustainable development practices.
- To encourage innovation and research in renewable energy solutions.
- To prepare graduates for careers in renewable energy industries, energy consulting, and environmental engineering.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | RES101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | RES102 | Introduction to Renewable Energy Systems | 3 | 0 | 0 | 3 |
| 3 | RES103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 4 | RES104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | RES105 | Basics of Electrical Engineering | 3 | 0 | 0 | 3 |
| 6 | RES106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | RES107 | Electrical Engineering Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | RES151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | RES152 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 10 | RES153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | RES154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | RES155 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 13 | RES156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | RES157 | Digital Logic Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year I Semester | | | | | | |
| 15 | RES201 | Electrical Circuits | 3 | 0 | 0 | 4 |
| 16 | RES202 | Electronic Devices & Circuits | 3 | 0 | 0 | 3 |
| 17 | RES203 | Thermodynamics | 3 | 0 | 0 | 3 |
| 18 | RES204 | Energy Conversion Systems | 3 | 0 | 0 | 3 |
| 19 | RES205 | Solar Energy Systems | 3 | 0 | 0 | 3 |
| 20 | RES206 | Circuits Lab | 0 | 0 | 2 | 2 |
| 21 | RES207 | Solar Systems Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| II Year II Semester | | | | | | |
| 22 | RES251 | Electrical Machines | 3 | 0 | 0 | 4 |
| 23 | RES252 | Power Electronics | 3 | 0 | 0 | 3 |
| 24 | RES253 | Wind Energy Systems | 3 | 0 | 0 | 3 |
| 25 | RES254 | Biomass and Bioenergy | 3 | 0 | 0 | 3 |
| 26 | RES255 | Energy Storage Technologies | 3 | 0 | 0 | 3 |
| 27 | RES256 | Power Electronics Lab | 0 | 0 | 2 | 2 |
| 28 | RES257 | Electrical Machines Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |
| 29 | RES301 | Hydro and Ocean Energy | 3 | 0 | 0 | 4 |
| 30 | RES302 | Smart Grid Technologies | 3 | 0 | 0 | 3 |
| 31 | RES303 | Energy Management Systems | 3 | 0 | 0 | 3 |
| 32 | RES304 | Hybrid Renewable Systems | 3 | 0 | 0 | 3 |
| 33 | RES305 | Environmental Impact of Energy Systems | 3 | 0 | 0 | 3 |
| 34 | RES306 | Smart Grid Lab | 0 | 0 | 2 | 2 |
| 35 | RES307 | Renewable Simulation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | RES351 | Distributed Generation Systems | 3 | 0 | 0 | 4 |
| 37 | RES352 | Power System Protection | 3 | 0 | 0 | 3 |
| 38 | RES353 | IoT in Energy Systems | 3 | 0 | 0 | 3 |
| 39 | RES354 | Energy Policy and Economics | 3 | 0 | 0 | 3 |
| 40 | RES355 | Elective – I (Hydrogen Energy / Energy Analytics / | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | Microgrids) | | | | |
| 41 | RES356 | Protection Systems Lab | 0 | 0 | 2 | 2 |
| 42 | RES357 | IoT Energy Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | RES401 | Advanced Renewable Technologies | 3 | 0 | 0 | 4 |
| 44 | RES402 | Energy Storage Integration | 3 | 0 | 0 | 3 |
| 45 | RES403 | Sustainable Energy Systems | 3 | 0 | 0 | 3 |
| 46 | RES404 | Entrepreneurship in Renewable Energy | 3 | 0 | 0 | 3 |
| 47 | RES405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | RES406 | Renewable Design Lab | 0 | 0 | 2 | 2 |
| 49 | RES407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | RES451 | Advanced Energy Systems | 3 | 0 | 0 | 4 |
| 51 | RES452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | RES453 | Elective – II (Green Hydrogen / Carbon Management / Energy Forecasting) | 3 | 0 | 0 | 3 |
| 53 | RES454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | RES455 | Energy Testing Lab | 0 | 0 | 2 | 2 |
| 55 | RES456 | System Integration Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |

| | |
|---|---|
| RESPE01 | Advanced Solar Photovoltaics |
| RESPE02 | Offshore Wind Energy |
| RESPE03 | Waste-to-Energy Systems |
| RESPE04 | Grid Integration of Renewable Energy |
| RESPE05 | Fuel Cell Technology |
| RESPE06 | Carbon Capture and Storage |
| RESPE07 | Internet of Things for Energy Monitoring |
| RESPE08 | Power System Protection |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Machine Learning |
| OEC03 | Data Analytics |
| OEC04 | Internet of Things |
| OEC05 | Blockchain Technology |
| OEC06 | Smart Cities |
| **Suggested Laboratories** | Smart Manufacturing |

| |
|---|
| Essential laboratories for Renewable Energy Systems: |
| Solar Photovoltaic Lab |
| Wind Energy Systems Lab |
| Energy Storage Systems Lab |
| Power Electronics Lab |
| Smart Grid Simulation Lab |
| Microgrid Laboratory |
| Energy Audit Laboratory |
| Electric Vehicle Charging Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core Renewable Courses | 50 |
| Emerging Technologies | 18 |

| | |
|---|---|
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 5. B.Tech Artificial Intelligence and Intelligent Systems

### Objectives of the Program

- To impart foundational and advanced knowledge in artificial intelligence, machine learning, and intelligent computing systems.
- To develop skills in data analytics, predictive modeling, and intelligent decision-making systems.
- To train students in the development of AI-based applications across multiple domains.
- To integrate intelligent technologies with automation, robotics, and digital platforms.
- To promote ethical and responsible use of artificial intelligence technologies.
- To encourage innovation, research, and entrepreneurship in intelligent systems.
- To prepare graduates for careers in artificial intelligence development, data science, intelligent system engineering, and research.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | AIS101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | AIS102 | Introduction to Artificial Intelligence | 3 | 0 | 0 | 3 |
| 3 | AIS103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 4 | AIS104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | AIS105 | Computer Organization | 3 | 0 | 0 | 3 |
| 6 | AIS106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | AIS107 | Computer Organization Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | AIS151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | AIS152 | Object Oriented Programming | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 | AIS153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | AIS154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | AIS155 | Data Structures | 3 | 0 | 0 | 3 |
| 13 | AIS156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | AIS157 | Data Structures Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year I Semester | | | | | | |
| 15 | AIS201 | Discrete Mathematics | 3 | 0 | 0 | 4 |
| 16 | AIS202 | Operating Systems | 3 | 0 | 0 | 3 |
| 17 | AIS203 | Database Management Systems | 3 | 0 | 0 | 3 |
| 18 | AIS204 | Computer Networks | 3 | 0 | 0 | 3 |
| 19 | AIS205 | Probability and Statistics | 3 | 0 | 0 | 3 |
| 20 | AIS206 | Operating Systems Lab | 0 | 0 | 2 | 2 |
| 21 | AIS207 | DBMS Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | AIS251 | Software Engineering | 3 | 0 | 0 | 4 |
| 23 | AIS252 | Machine Learning | 3 | 0 | 0 | 3 |
| 24 | AIS253 | Artificial Intelligence Algorithms | 3 | 0 | 0 | 3 |
| 25 | AIS254 | Data Mining and Warehousing | 3 | 0 | 0 | 3 |
| 26 | AIS255 | Web Technologies | 3 | 0 | 0 | 3 |
| 27 | AIS256 | Machine Learning Lab | 0 | 0 | 2 | 2 |
| 28 | AIS257 | Web Technologies Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 29 | AIS301 | Deep Learning | 3 | 0 | 0 | 4 |
| 30 | AIS302 | Natural Language Processing | 3 | 0 | 0 | 3 |
| 31 | AIS303 | Computer Vision | 3 | 0 | 0 | 3 |
| 32 | AIS304 | Big Data Analytics | 3 | 0 | 0 | 3 |
| 33 | AIS305 | Internet of Things (IoT) | 3 | 0 | 0 | 3 |
| 34 | AIS306 | Deep Learning Lab | 0 | 0 | 2 | 2 |
| 35 | AIS307 | Computer Vision Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | AIS351 | Reinforcement Learning | 3 | 0 | 0 | 4 |
| 37 | AIS352 | Explainable AI | 3 | 0 | 0 | 3 |
| 38 | AIS353 | Edge AI Systems | 3 | 0 | 0 | 3 |
| 39 | AIS354 | AI Ethics and Governance | 3 | 0 | 0 | 3 |
| 40 | AIS355 | Elective – I (Generative AI / Robotics AI / Healthcare AI) | 3 | 0 | 0 | 3 |
| 41 | AIS356 | Edge AI Lab | 0 | 0 | 2 | 2 |
| 42 | AIS357 | AI Applications Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | AIS401 | Advanced Artificial Intelligence | 3 | 0 | 0 | 4 |
| 44 | AIS402 | Intelligent Systems Design | 3 | 0 | 0 | 3 |
| 45 | AIS403 | AI System Deployment | 3 | 0 | 0 | 3 |
| 46 | AIS404 | Entrepreneurship in AI | 3 | 0 | 0 | 3 |
| 47 | AIS405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | AIS406 | Intelligent Systems Lab | 0 | 0 | 2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 49 | AIS407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | AIS451 | Advanced Intelligent Systems | 3 | 0 | 0 | 4 |
| 51 | AIS452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | AIS453 | Elective – II (Autonomous Systems / AI Security / AI Analytics) | 3 | 0 | 0 | 3 |
| 53 | AIS454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | AIS455 | AI Deployment Lab | 0 | 0 | 2 | 2 |
| 55 | AIS456 | Model Optimization Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| AISPE01 | Generative Artificial Intelligence |
| AISPE02 | AI in Healthcare |
| AISPE03 | AI in Finance |
| AISPE04 | Speech Recognition Systems |
| AISPE05 | Knowledge Representation and Reasoning |
| AISPE06 | Swarm Intelligence |
| AISPE07 | AI for Cybersecurity |
| AISPE08 | Autonomous Vehicle Intelligence |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Internet of Things |
| OEC02 | Blockchain Technology |
| OEC03 | Cloud Computing |
| OEC04 | Data Visualization |
| OEC05 | Smart Cities |
| OEC06 | Robotics Fundamentals |

| Suggested Laboratories |
|---|
| Essential laboratories for AI & Intelligent Systems: |
| Artificial Intelligence Lab |
| Machine Learning Lab |
| Deep Learning Lab |
| Natural Language Processing Lab |
| Computer Vision Lab |
| Reinforcement Learning Lab |
| Edge AI Lab |
| Intelligent Systems Design Lab |

| Total Credit Summary | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core AI Courses | 50 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 6. B.Tech Drone Technology

### Objectives of the Program

- To impart foundational and advanced knowledge in drone systems, aerodynamics, and unmanned aerial technologies.
- To develop skills in drone navigation, flight control systems, and embedded system integration.
- To train students in the design, assembly, and operation of drone technologies for industrial applications.
- To integrate geospatial technologies and remote sensing with aerial systems.

- To promote awareness of aviation safety regulations and ethical practices in drone operations.
- To encourage research and innovation in unmanned aerial technologies.
- To prepare graduates for careers in drone operations, aerial mapping, surveillance, logistics, and advanced technology development.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | DRT101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | DRT102 | Introduction to Drone Technology | 3 | 0 | 0 | 3 |
| 3 | DRT103 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 4 | DRT104 | Engineering Physics | 3 | 0 | 0 | 3 |
| 5 | DRT105 | Basics of Electronics Engineering | 3 | 0 | 0 | 3 |
| 6 | DRT106 | Python Programming Lab | 0 | 0 | 2 | 2 |
| 7 | DRT107 | Electronics Workshop | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| I Year II Semester | | | | | | |
| 8 | DRT151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | DRT152 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 10 | DRT153 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 11 | DRT154 | Digital Logic & Computer Organization | 3 | 0 | 0 | 3 |
| 12 | DRT155 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 13 | DRT156 | OOP Programming Lab | 0 | 0 | 2 | 2 |
| 14 | DRT157 | Digital Logic Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year I Semester | | | | | | |
| 15 | DRT201 | Electronic Devices & Circuits | 3 | 0 | 0 | 4 |
| 16 | DRT202 | Signals & Systems | 3 | 0 | 0 | 3 |
| 17 | DRT203 | Microprocessors & Microcontrollers | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 18 | DRT204 | Sensors and Actuators | 3 | 0 | 0 | 3 |
| 19 | DRT205 | Aerodynamics Fundamentals | 3 | 0 | 0 | 3 |
| 20 | DRT206 | Microcontroller Lab | 0 | 0 | 2 | 2 |
| 21 | DRT207 | Sensors Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | DRT251 | Control Systems | 3 | 0 | 0 | 4 |
| 23 | DRT252 | Embedded Systems | 3 | 0 | 0 | 3 |
| 24 | DRT253 | Communication Systems | 3 | 0 | 0 | 3 |
| 25 | DRT254 | Drone Design and Modeling | 3 | 0 | 0 | 3 |
| 26 | DRT255 | Navigation Systems | 3 | 0 | 0 | 3 |
| 27 | DRT256 | Embedded Systems Lab | 0 | 0 | 2 | 2 |
| 28 | DRT257 | Communication Systems Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |
| 29 | DRT301 | UAV Systems Engineering | 3 | 0 | 0 | 4 |
| 30 | DRT302 | Flight Control Systems | 3 | 0 | 0 | 3 |
| 31 | DRT303 | Image Processing for Drones | 3 | 0 | 0 | 3 |
| 32 | DRT304 | Internet of Things (IoT) | 3 | 0 | 0 | 3 |
| 33 | DRT305 | Drone Applications | 3 | 0 | 0 | 3 |
| 34 | DRT306 | Flight Control Lab | 0 | 0 | 2 | 2 |
| 35 | DRT307 | Image Processing Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | DRT351 | Autonomous Drone Systems | 3 | 0 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 37 | DRT352 | GIS and Remote Sensing | 3 | 0 | 0 | 3 |
| 38 | DRT353 | Drone Communication Networks | 3 | 0 | 0 | 3 |
| 39 | DRT354 | Artificial Intelligence for Drones | 3 | 0 | 0 | 3 |
| 40 | DRT355 | Elective – I (Agricultural Drones / Surveillance Systems / Delivery Drones) | 3 | 0 | 0 | 3 |
| 41 | DRT356 | GIS Lab | 0 | 0 | 2 | 2 |
| 42 | DRT357 | Drone Simulation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | DRT401 | Advanced Drone Technologies | 3 | 0 | 0 | 4 |
| 44 | DRT402 | Drone Safety & Regulations | 3 | 0 | 0 | 3 |
| 45 | DRT403 | Drone Fleet Management | 3 | 0 | 0 | 3 |
| 46 | DRT404 | Entrepreneurship in Drone Industry | 3 | 0 | 0 | 3 |
| 47 | DRT405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | DRT406 | Drone Design Lab | 0 | 0 | 2 | 2 |
| 49 | DRT407 | Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | DRT451 | Advanced UAV Systems | 3 | 0 | 0 | 4 |
| 51 | DRT452 | Industry Internship | 3 | 0 | 0 | 3 |
| 52 | DRT453 | Elective – II (Swarm Drones / Autonomous Navigation / Drone Analytics) | 3 | 0 | 0 | 3 |
| 53 | DRT454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | DRT455 | Drone Testing Lab | 0 | 0 | 2 | 2 |
| 55 | DRT456 | Deployment Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| Professional Electives (Sample List) | |
|---|---|
| **Course Code** | **Course Title** |
| DRTPE01 | Advanced UAV Design |
| DRTPE02 | Drone Image Processing |
| DRTPE03 | Agricultural Drone Technology |
| DRTPE04 | Surveillance and Security Drones |
| DRTPE05 | Marine and Underwater Drones |
| DRTPE06 | Drone Mapping and Surveying |
| DRTPE07 | Autonomous Navigation Systems |
| DRTPE08 | Drone Maintenance and Diagnostics |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Machine Learning |
| OEC03 | Internet of Things |
| OEC04 | Data Analytics |
| OEC05 | Robotics Fundamentals |
| OEC06 | Smart Agriculture Technologies |

| **Suggested Laboratories** |
|---|
| Essential labs for Drone Technology: |
| UAV Design Laboratory |
| Embedded Systems Lab |
| Drone Navigation Lab |
| Drone Simulation Lab |
| Remote Sensing and GIS Lab |
| AI for Drone Applications Lab |
| Swarm Robotics Lab |
| Drone Testing and Calibration Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |

| | |
|---|---|
| Engineering Sciences | 28 |
| Core Drone Courses | 50 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 7. B.Tech Sustainable Infrastructure Planning

### Objectives of the Program

- To impart foundational knowledge in sustainable infrastructure planning and urban development principles.
- To develop skills in environmental planning, resource management, and sustainable design strategies.
- To train students in infrastructure planning aligned with smart city and sustainability goals.
- To integrate environmental sustainability with civil and urban planning concepts.
- To promote awareness of environmental policies and sustainable development practices.
- To encourage innovation in infrastructure design and planning methods.
- To prepare graduates for careers in urban planning, infrastructure development, environmental consulting, and public policy.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | SIP101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | SIP102 | Engineering Physics | 3 | 0 | 0 | 3 |
| 3 | SIP103 | Engineering Graphics | 3 | 0 | 0 | 3 |
| 4 | SIP104 | Basics of Civil Engineering | 3 | 0 | 0 | 3 |
| 5 | SIP105 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 6 | SIP106 | Engineering Physics Lab | 0 | 0 | 2 | 2 |
| 7 | SIP107 | Programming Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| I Year II Semester | | | | | | |
| 8 | SIP151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | SIP152 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 10 | SIP153 | Environmental Science | 3 | 0 | 0 | 3 |
| 11 | SIP154 | Surveying and Geomatics | 3 | 0 | 0 | 3 |
| 12 | SIP155 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 13 | SIP156 | Engineering Chemistry Lab | 0 | 0 | 2 | 2 |
| 14 | SIP157 | Surveying Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year I Semester | | | | | | |
| 15 | SIP201 | Strength of Materials | 3 | 0 | 0 | 4 |
| 16 | SIP202 | Fluid Mechanics | 3 | 0 | 0 | 3 |
| 17 | SIP203 | Transportation Engineering | 3 | 0 | 0 | 3 |
| 18 | SIP204 | Sustainable Construction Materials | 3 | 0 | 0 | 3 |
| 19 | SIP205 | Infrastructure Economics | 3 | 0 | 0 | 3 |
| 20 | SIP206 | Materials Testing Lab | 0 | 0 | 2 | 2 |
| 21 | SIP207 | Fluid Mechanics Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| II Year II Semester | | | | | | |
| 22 | SIP251 | Structural Analysis | 3 | 0 | 0 | 4 |
| 23 | SIP252 | Water Resources Engineering | 3 | 0 | 0 | 3 |
| 24 | SIP253 | Environmental Engineering | 3 | 0 | 0 | 3 |
| 25 | SIP254 | Smart Cities and Urban Infrastructure | 3 | 0 | 0 | 3 |
| 26 | SIP255 | Disaster Management and Risk Reduction | 3 | 0 | 0 | 3 |
| 27 | SIP256 | Environmental Engineering Lab | 0 | 0 | 2 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 28 | SIP257 | Urban Infrastructure Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year I Semester | | | | | | |
| 29 | SIP301 | Geotechnical Engineering | 3 | 0 | 0 | 4 |
| 30 | SIP302 | Sustainable Transport Systems | 3 | 0 | 0 | 3 |
| 31 | SIP303 | GIS and Remote Sensing | 3 | 0 | 0 | 3 |
| 32 | SIP304 | Environmental Impact Assessment | 3 | 0 | 0 | 3 |
| 33 | SIP305 | Infrastructure Project Management | 3 | 0 | 0 | 3 |
| 34 | SIP306 | GIS Lab | 0 | 0 | 2 | 2 |
| 35 | SIP307 | Impact Assessment Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| III Year II Semester | | | | | | |
| 36 | SIP351 | Green Infrastructure Design | 3 | 0 | 0 | 4 |
| 37 | SIP352 | Climate Change Adaptation and Mitigation | 3 | 0 | 0 | 3 |
| 38 | SIP353 | Digital Tools for Infrastructure Planning | 3 | 0 | 0 | 3 |
| 39 | SIP354 | Infrastructure Analytics and Modeling | 3 | 0 | 0 | 3 |
| 40 | SIP355 | Elective – I (Smart Mobility / Water Sustainability / Green Buildings) | 3 | 0 | 0 | 3 |
| 41 | SIP356 | Infrastructure Design Lab | 0 | 0 | 2 | 2 |
| 42 | SIP357 | Infrastructure Analytics Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year I Semester | | | | | | |
| 43 | SIP401 | Advanced Infrastructure Planning | 3 | 0 | 0 | 4 |
| 44 | SIP402 | Sustainable Policy and Governance | 3 | 0 | 0 | 3 |
| 45 | SIP403 | Infrastructure Financing and PPP Models | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 46 | SIP404 | Entrepreneurship in Infrastructure Systems | 3 | 0 | 0 | 3 |
| 47 | SIP405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | SIP406 | Infrastructure Planning Design Lab | 0 | 0 | 2 | 2 |
| 49 | SIP407 | Innovation and Sustainability Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |
| IV Year II Semester | | | | | | |
| 50 | SIP451 | Integrated Infrastructure Systems | 3 | 0 | 0 | 4 |
| 51 | SIP452 | Internship / Industry Training | 3 | 0 | 0 | 3 |
| 52 | SIP453 | Elective – II (Urban Analytics / Smart Utilities / Climate Infrastructure) | 3 | 0 | 0 | 3 |
| 53 | SIP454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | SIP455 | Infrastructure Modeling Lab | 0 | 0 | 2 | 2 |
| 55 | SIP456 | Field Implementation and Deployment Lab | 0 | 0 | 2 | 2 |
| Total | | 15 | 0 | 4 | 20 | |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| SIPPE01 | Advanced Green Building Technologies |
| SIPPE02 | Sustainable Construction Practices |
| SIPPE03 | Smart Water Systems |
| SIPPE04 | Disaster Management Engineering |
| SIPPE05 | Infrastructure Asset Management |
| SIPPE06 | Sustainable Materials Engineering |
| SIPPE07 | Urban Flood Management |
| SIPPE08 | Coastal Infrastructure Planning |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Internet of Things |
| OEC02 | Artificial Intelligence |
| OEC03 | Data Analytics |

| | |
|---|---|
| OEC04 | Smart Cities |
| OEC05 | Environmental Sustainability |
| OEC06 | Renewable Energy Systems |

| **Suggested Laboratories** |
|---|
| Essential labs for Sustainable Infrastructure: |
| Surveying Laboratory |
| GIS and Remote Sensing Lab |
| Environmental Engineering Lab |
| Green Building Simulation Lab |
| Transportation Planning Lab |
| Waste Management Lab |
| Infrastructure Design Studio |
| Smart Cities Simulation Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core Infrastructure Courses | 50 |
| Sustainable & Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 8. B.Tech. Innovation and Design Thinking

### Objectives of the Program

- To impart foundational knowledge in innovation processes and design thinking methodologies.
- To develop creative problem-solving and entrepreneurial skills.
- To train students in product development, innovation management, and design-based learning.
- To integrate multidisciplinary knowledge with real-world innovation challenges.
- To promote awareness of entrepreneurship, intellectual property, and startup ecosystems.

- To encourage innovation, prototyping, and product development.
- To prepare graduates for careers in innovation management, entrepreneurship, design consulting, and product development.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | IDT101 | Engineering Mathematics – I | 3 | 0 | 0 | 4 |
| 2 | IDT102 | Engineering Physics | 3 | 0 | 0 | 3 |
| 3 | IDT103 | Engineering Graphics | 3 | 0 | 0 | 3 |
| 4 | IDT104 | Introduction to Innovation and Design Thinking | 3 | 0 | 0 | 3 |
| 5 | IDT105 | Programming for Problem Solving (Python) | 3 | 0 | 0 | 3 |
| 6 | IDT106 | Engineering Physics Lab | 0 | 0 | 2 | 2 |
| 7 | IDT107 | Programming Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| I Year II Semester | | | | | | |
| 8 | IDT151 | Engineering Mathematics – II | 3 | 0 | 0 | 4 |
| 9 | IDT152 | Engineering Chemistry | 3 | 0 | 0 | 3 |
| 10 | IDT153 | Creativity and Ideation Techniques | 3 | 0 | 0 | 3 |
| 11 | IDT154 | Engineering Mechanics | 3 | 0 | 0 | 3 |
| 12 | IDT155 | Design Communication Skills | 3 | 0 | 0 | 3 |
| 13 | IDT156 | Engineering Chemistry Lab | 0 | 0 | 2 | 2 |
| 14 | IDT157 | Creativity and Ideation Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| II Year I Semester | | | | | | |
| 15 | IDT201 | Design Thinking Process | 3 | 0 | 0 | 4 |
| 16 | IDT202 | Human-Centered Design | 3 | 0 | 0 | 3 |
| 17 | IDT203 | Digital Design Tools (CAD/CAM) | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 18 | IDT204 | Materials and Prototyping Techniques | 3 | 0 | 0 | 3 |
| 19 | IDT205 | Innovation Management | 3 | 0 | 0 | 3 |
| 20 | IDT206 | Digital Design Lab | 0 | 0 | 2 | 2 |
| 21 | IDT207 | Prototyping Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| II Year II Semester | | | | | | |
| 22 | IDT251 | Product Design Fundamentals | 3 | 0 | 0 | 4 |
| 23 | IDT252 | User Experience (UX) Design | 3 | 0 | 0 | 3 |
| 24 | IDT253 | Design for Sustainability | 3 | 0 | 0 | 3 |
| 25 | IDT254 | Electronics for Designers | 3 | 0 | 0 | 3 |
| 26 | IDT255 | Intellectual Property Rights | 3 | 0 | 0 | 3 |
| 27 | IDT256 | UX Design Lab | 0 | 0 | 2 | 2 |
| 28 | IDT257 | Electronics Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| III Year I Semester | | | | | | |
| 29 | IDT301 | Advanced Product Design | 3 | 0 | 0 | 4 |
| 30 | IDT302 | Rapid Prototyping and 3D Printing | 3 | 0 | 0 | 3 |
| 31 | IDT303 | Internet of Things (IoT) for Innovation | 3 | 0 | 0 | 3 |
| 32 | IDT304 | Design Analytics and Visualization | 3 | 0 | 0 | 3 |
| 33 | IDT305 | Entrepreneurship and Startup Development | 3 | 0 | 0 | 3 |
| 34 | IDT306 | Rapid Prototyping Lab | 0 | 0 | 2 | 2 |
| 35 | IDT307 | IoT Innovation Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| III Year II Semester | | | | | | |
| 36 | IDT351 | Design for Manufacturing | 3 | 0 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 37 | IDT352 | Systems Design and Integration | 3 | 0 | 0 | 3 |
| 38 | IDT353 | Augmented and Virtual Reality Design | 3 | 0 | 0 | 3 |
| 39 | IDT354 | Innovation Strategy and Leadership | 3 | 0 | 0 | 3 |
| 40 | IDT355 | Elective – I | 3 | 0 | 0 | 3 |
| 41 | IDT356 | Systems Integration Lab | 0 | 0 | 2 | 2 |
| 42 | IDT357 | AR/VR Design Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| IV Year I Semester | | | | | | |
| 43 | IDT401 | Innovation Project Management | 3 | 0 | 0 | 4 |
| 44 | IDT402 | Design Leadership and Professional Ethics | 3 | 0 | 0 | 3 |
| 45 | IDT403 | Technology Commercialization | 3 | 0 | 0 | 3 |
| 46 | IDT404 | Social Innovation and Inclusive Design | 3 | 0 | 0 | 3 |
| 47 | IDT405 | Project Phase – I | 3 | 0 | 0 | 3 |
| 48 | IDT406 | Innovation and Design Lab | 0 | 0 | 2 | 2 |
| 49 | IDT407 | Product Design Studio Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |
| IV Year II Semester | | | | | | |
| 50 | IDT451 | Emerging Technologies for Innovation | 3 | 0 | 0 | 4 |
| 51 | IDT452 | Internship / Industry Training | 3 | 0 | 0 | 3 |
| 52 | IDT453 | Elective – II | 3 | 0 | 0 | 3 |
| 53 | IDT454 | Project Phase – II | 3 | 0 | 0 | 3 |
| 54 | IDT455 | Product Development Lab | 0 | 0 | 2 | 2 |
| 55 | IDT456 | Deployment and Validation Lab | 0 | 0 | 2 | 2 |
| Total | | | 15 | 0 | 4 | 20 |

**Professional Electives (Sample List)**

| Course Code | Course Title |
|---|---|
| IDTPE01 | Design for Sustainability |
| IDTPE02 | Biomedical Product Design |
| IDTPE03 | Automotive Product Design |
| IDTPE04 | Robotics Product Development |
| IDTPE05 | Augmented and Virtual Reality Design |
| IDTPE06 | Smart Wearable Technology |
| IDTPE07 | Innovation in Healthcare Technologies |
| IDTPE08 | Creative Engineering Design |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Internet of Things |
| OEC03 | Data Analytics |
| OEC04 | Smart Cities |
| OEC05 | Robotics Fundamentals |
| OEC06 | Renewable Energy Systems |

| **Suggested Laboratories / Studios** |
|---|
| Essential practical environments: |
| Design Thinking Studio |
| CAD and Product Design Lab |
| Rapid Prototyping and 3D Printing Lab |
| Innovation and Startup Studio |
| IoT Innovation Lab |
| UX/UI Design Lab |
| Digital Manufacturing Lab |
| Product Testing Laboratory |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 28 |
| Core Infrastructure Courses | 50 |

| | |
|---|---|
| Sustainable & Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 9. B.Pharm Intelligent Healthcare Systems

### Objectives of the Program

- To impart advanced knowledge in pharmaceutical sciences integrated with intelligent healthcare technologies.
- To develop skills in digital healthcare systems, drug monitoring, and patient data management.
- To train students in the use of intelligent systems for pharmaceutical and healthcare applications.
- To integrate health informatics with pharmaceutical practices.
- To promote ethical and regulatory awareness in healthcare technology systems.
- To encourage research and innovation in pharmaceutical and healthcare technologies.
- To prepare graduates for careers in healthcare technology systems, pharmaceutical informatics, and research.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | IHSB101 | Human Anatomy and Physiology – I | 3 | 0 | 0 | 4 |
| 2 | IHSB102 | Pharmaceutical Analysis – I | 3 | 0 | 0 | 4 |
| 3 | IHSB103 | Pharmaceutics – I | 3 | 0 | 0 | 4 |
| 4 | IHSB104 | Pharmaceutical Inorganic Chemistry | 3 | 0 | 0 | 4 |
| 5 | IHSB105 | Communication Skills | 2 | 0 | 0 | 2 |
| 6 | IHSB106 | Human Anatomy and Physiology Lab | 0 | 0 | 4 | 2 |
| 7 | IHSB107 | Pharmaceutics Lab – I | 0 | 0 | 4 | 2 |
| Total | | | 14 | 0 | 8 | 22 |

| | | | | | | |
|---|---|---|---|---|---|---|
| I Year II Semester | | | | | | |
| 8 | IHSB151 | Human Anatomy and Physiology – II | 3 | 0 | 0 | 4 |
| 9 | IHSB152 | Pharmaceutical Organic Chemistry – I | 3 | 0 | 0 | 4 |
| 10 | IHSB153 | Biochemistry | 3 | 0 | 0 | 4 |
| 11 | IHSB154 | Pathophysiology | 3 | 0 | 0 | 4 |
| 12 | IHSB155 | Computer Applications in Pharmacy | 2 | 0 | 0 | 2 |
| 13 | IHSB156 | Organic Chemistry Lab – I | 0 | 0 | 4 | 2 |
| 14 | IHSB157 | Biochemistry Lab | 0 | 0 | 4 | 2 |
| Total | | | 14 | 0 | 8 | 22 |
| II Year I Semester | | | | | | |
| 15 | IHSB201 | Pharmaceutical Organic Chemistry – II | 3 | 0 | 0 | 4 |
| 16 | IHSB202 | Physical Pharmaceutics – I | 3 | 0 | 0 | 4 |
| 17 | IHSB203 | Pharmacology – I | 3 | 0 | 0 | 4 |
| 18 | IHSB204 | Pharmaceutical Microbiology | 3 | 0 | 0 | 4 |
| 19 | IHSB205 | Healthcare Informatics | 3 | 0 | 0 | 3 |
| 20 | IHSB206 | Physical Pharmaceutics Lab | 0 | 0 | 4 | 2 |
| 21 | IHSB207 | Microbiology Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| II Year II Semester | | | | | | |
| 22 | IHSB251 | Pharmaceutical Organic Chemistry – III | 3 | 0 | 0 | 4 |
| 23 | IHSB252 | Physical Pharmaceutics – II | 3 | 0 | 0 | 4 |
| 24 | IHSB253 | Pharmacology – II | 3 | 0 | 0 | 4 |
| 25 | IHSB254 | Pharmacognosy – I | 3 | 0 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 26 | IHSB255 | Artificial Intelligence in Healthcare | 3 | 0 | 0 | 3 |
| 27 | IHSB256 | Pharmacology Lab | 0 | 0 | 4 | 2 |
| 28 | IHSB257 | Pharmacognosy Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| III Year I Semester | | | | | | |
| 29 | IHSB301 | Medicinal Chemistry – I | 3 | 0 | 0 | 4 |
| 30 | IHSB302 | Pharmacology – III | 3 | 0 | 0 | 4 |
| 31 | IHSB303 | Pharmaceutical Jurisprudence | 3 | 0 | 0 | 4 |
| 32 | IHSB304 | Pharmacognosy – II | 3 | 0 | 0 | 4 |
| 33 | IHSB305 | Clinical Data Management | 3 | 0 | 0 | 3 |
| 34 | IHSB306 | Medicinal Chemistry Lab | 0 | 0 | 4 | 2 |
| 35 | IHSB307 | Pharmacognosy Lab – II | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| III Year II Semester | | | | | | |
| 36 | IHSB351 | Medicinal Chemistry – II | 3 | 0 | 0 | 4 |
| 37 | IHSB352 | Pharmacology – IV | 3 | 0 | 0 | 4 |
| 38 | IHSB353 | Pharmaceutical Biotechnology | 3 | 0 | 0 | 4 |
| 39 | IHSB354 | Quality Assurance | 3 | 0 | 0 | 4 |
| 40 | IHSB355 | Pharmacovigilance and Drug Safety | 3 | 0 | 0 | 3 |
| 41 | IHSB356 | Biotechnology Lab | 0 | 0 | 4 | 2 |
| 42 | IHSB357 | Quality Assurance Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| IV Year I Semester | | | | | | |
| 43 | IHSB401 | Clinical Pharmacy | 3 | 0 | 0 | 4 |
| 44 | IHSB402 | Biopharmaceutics and Pharmacokinetics | 3 | 0 | 0 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 45 | IHSB403 | Pharmaceutical Marketing Management | 3 | 0 | 0 | 4 |
| 46 | IHSB404 | Precision Medicine and Digital Therapeutics | 3 | 0 | 0 | 3 |
| 47 | IHSB405 | Mini Project | 0 | 0 | 4 | 2 |
| 48 | IHSB406 | Clinical Pharmacy Lab | 0 | 0 | 4 | 2 |
| 49 | IHSB407 | Informatics and Analytics Lab | 0 | 0 | 4 | 2 |
| Total | | | 12 | 0 | 12 | 21 |
| IV Year II Semester | | | | | | |
| 50 | IHSB451 | Industrial Pharmacy | 3 | 0 | 0 | 4 |
| 51 | IHSB452 | Pharmaceutical Regulatory Affairs | 3 | 0 | 0 | 4 |
| 52 | IHSB453 | Elective – I (Telemedicine / Smart Diagnostics / Wearable Healthcare Systems) | 3 | 0 | 0 | 3 |
| 53 | IHSB454 | Project Work | 0 | 0 | 12 | 6 |
| 54 | IHSB455 | Internship / Hospital Training | 0 | 0 | 8 | 4 |
| Total | | | 9 | 0 | 20 | 21 |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| IHSPE01 | Advanced Medical Imaging |
| IHSPE02 | AI-Based Disease Diagnosis |
| IHSPE03 | Biomedical Signal Processing |
| IHSPE04 | Digital Health Systems |
| IHSPE05 | Hospital Information Systems |
| IHSPE06 | Assistive Technology Design |
| IHSPE07 | Health Informatics |
| IHSPE08 | Medical Device Design |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Internet of Things |
| OEC03 | Data Analytics |

| | |
|---|---|
| OEC04 | Robotics Fundamentals |
| OEC05 | Cybersecurity Fundamentals |
| OEC06 | Smart Cities |

| **Suggested Laboratories** |
|---|
| Essential labs for Intelligent Healthcare Systems: |
| Biomedical Instrumentation Lab |
| Medical Imaging Lab |
| Internet of Medical Things (IoMT) Lab |
| Healthcare Data Analytics Lab |
| Wearable Devices Lab |
| Telemedicine Lab |
| Healthcare Simulation Lab |
| AI for Healthcare Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 26 |
| Core Healthcare Courses | 52 |
| Emerging Technologies | 18 |
| Humanities & Social Sciences | 12 |
| Professional Electives | 12 |
| Skill Courses | 8 |
| Internship | 10 |
| Projects | 14 |
| Value Added Courses | 3 |
| **Total** | **160–165** |

## 10. B.Pharm Clinical Data Science

### Objectives of the Program

- To impart advanced knowledge in clinical data science, healthcare analytics, and statistical modeling.
- To develop skills in healthcare data analysis and predictive analytics.
- To train students in the use of computational tools for clinical decision-making and healthcare research.

- To integrate data science techniques with clinical and pharmaceutical research.
- To promote ethical use of healthcare data and data privacy practices.
- To encourage research and innovation in healthcare analytics and data-driven healthcare systems.
- To prepare graduates for careers in clinical data science, healthcare analytics, research organizations, and pharmaceutical industries.

| S No | Course Code | Course | L | T | P | Credits |
|---|---|---|---|---|---|---|
| I Year I Semester | | | | | | |
| 1 | BCDS101 | Human Anatomy and Physiology – I | 3 | 0 | 0 | 4 |
| 2 | BCDS102 | Pharmaceutical Analysis – I | 3 | 0 | 0 | 4 |
| 3 | BCDS103 | Pharmaceutics – I | 3 | 0 | 0 | 4 |
| 4 | BCDS104 | Pharmaceutical Inorganic Chemistry | 3 | 0 | 0 | 4 |
| 5 | BCDS105 | Communication Skills | 2 | 0 | 0 | 2 |
| 6 | BCDS106 | Human Anatomy and Physiology Lab | 0 | 0 | 4 | 2 |
| 7 | BCDS107 | Pharmaceutics Lab – I | 0 | 0 | 4 | 2 |
| Total | | | 14 | 0 | 8 | 22 |
| I Year II Semester | | | | | | |
| 8 | BCDS151 | Human Anatomy and Physiology – II | 3 | 0 | 0 | 4 |
| 9 | BCDS152 | Pharmaceutical Organic Chemistry – I | 3 | 0 | 0 | 4 |
| 10 | BCDS153 | Biochemistry | 3 | 0 | 0 | 4 |
| 11 | BCDS154 | Pathophysiology | 3 | 0 | 0 | 4 |
| 12 | BCDS155 | Computer Applications in Pharmacy | 2 | 0 | 0 | 2 |
| 13 | BCDS156 | Organic Chemistry Lab – I | 0 | 0 | 4 | 2 |
| 14 | BCDS157 | Biochemistry Lab | 0 | 0 | 4 | 2 |
| Total | | | 14 | 0 | 8 | 22 |

| | | | | | | |
|---|---|---|---|---|---|---|
| II Year I Semester | | | | | | |
| 15 | BCDS201 | Pharmaceutical Organic Chemistry – II | 3 | 0 | 0 | 4 |
| 16 | BCDS202 | Physical Pharmaceutics – I | 3 | 0 | 0 | 4 |
| 17 | BCDS203 | Pharmacology – I | 3 | 0 | 0 | 4 |
| 18 | BCDS204 | Pharmaceutical Microbiology | 3 | 0 | 0 | 4 |
| 19 | BCDS205 | Introduction to Clinical Data Science | 3 | 0 | 0 | 3 |
| 20 | BCDS206 | Physical Pharmaceutics Lab | 0 | 0 | 4 | 2 |
| 21 | BCDS207 | Microbiology Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| II Year II Semester | | | | | | |
| 22 | BCDS251 | Pharmaceutical Organic Chemistry – III | 3 | 0 | 0 | 4 |
| 23 | BCDS252 | Physical Pharmaceutics – II | 3 | 0 | 0 | 4 |
| 24 | BCDS253 | Pharmacology – II | 3 | 0 | 0 | 4 |
| 25 | BCDS254 | Pharmacognosy – I | 3 | 0 | 0 | 4 |
| 26 | BCDS255 | Biostatistics for Clinical Data | 3 | 0 | 0 | 3 |
| 27 | BCDS256 | Pharmacology Lab | 0 | 0 | 4 | 2 |
| 28 | BCDS257 | Pharmacognosy Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| III Year I Semester | | | | | | |
| 29 | BCDS301 | Medicinal Chemistry – I | 3 | 0 | 0 | 4 |
| 30 | BCDS302 | Pharmacology – III | 3 | 0 | 0 | 4 |
| 31 | BCDS303 | Pharmaceutical Jurisprudence | 3 | 0 | 0 | 4 |
| 32 | BCDS304 | Pharmacognosy – II | 3 | 0 | 0 | 4 |
| 33 | BCDS305 | Clinical Data Management | 3 | 0 | 0 | 3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 34 | BCDS306 | Medicinal Chemistry Lab | 0 | 0 | 4 | 2 |
| 35 | BCDS307 | Pharmacognosy Lab – II | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| III Year II Semester | | | | | | |
| 36 | BCDS351 | Medicinal Chemistry – II | 3 | 0 | 0 | 4 |
| 37 | BCDS352 | Pharmacology – IV | 3 | 0 | 0 | 4 |
| 38 | BCDS353 | Pharmaceutical Biotechnology | 3 | 0 | 0 | 4 |
| 39 | BCDS354 | Quality Assurance | 3 | 0 | 0 | 4 |
| 40 | BCDS355 | Clinical Research and Pharmacovigilance | 3 | 0 | 0 | 3 |
| 41 | BCDS356 | Biotechnology Lab | 0 | 0 | 4 | 2 |
| 42 | BCDS357 | Quality Assurance Lab | 0 | 0 | 4 | 2 |
| Total | | | 15 | 0 | 8 | 23 |
| IV Year I Semester | | | | | | |
| 43 | BCDS401 | Clinical Pharmacy | 3 | 0 | 0 | 4 |
| 44 | BCDS402 | Biopharmaceutics and Pharmacokinetics | 3 | 0 | 0 | 4 |
| 45 | BCDS403 | Pharmaceutical Marketing Management | 3 | 0 | 0 | 4 |
| 46 | BCDS404 | Predictive Analytics in Healthcare | 3 | 0 | 0 | 3 |
| 47 | BCDS405 | Mini Project | 0 | 0 | 4 | 2 |
| 48 | BCDS406 | Clinical Pharmacy Lab | 0 | 0 | 4 | 2 |
| 49 | BCDS407 | Clinical Data Analytics Lab | 0 | 0 | 4 | 2 |
| Total | | | 12 | 0 | 12 | 21 |
| IV Year II Semester | | | | | | |
| 50 | BCDS451 | Industrial Pharmacy | 3 | 0 | 0 | 4 |
| 51 | BCDS452 | Pharmaceutical Regulatory Affairs | 3 | 0 | 0 | 4 |
| 52 | BCDS453 | Elective – I (Health Informatics / Epidemiology / | 3 | 0 | 0 | 3 |

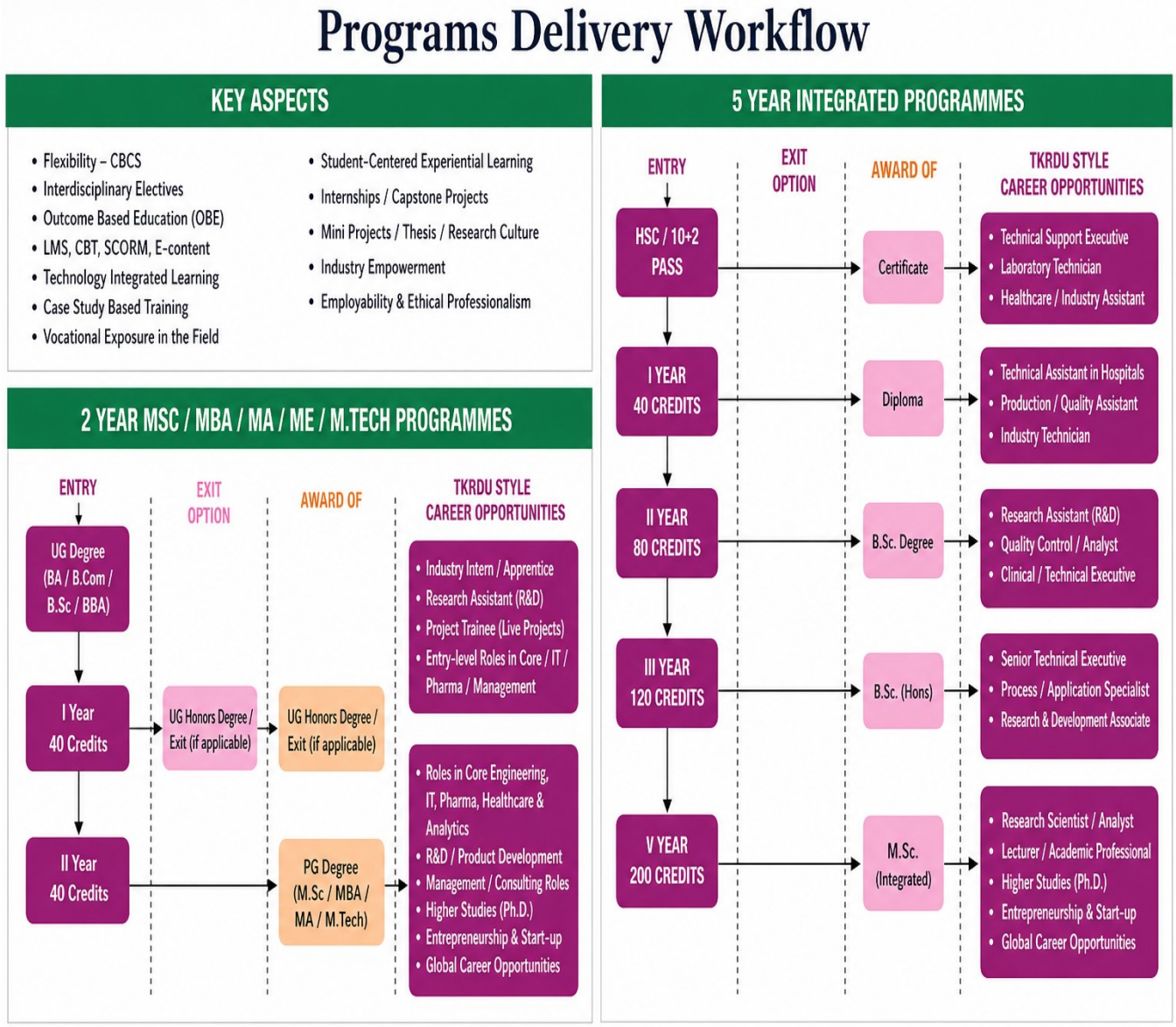
| | | | | | | |
|---|---|---|---|---|---|---|
| | | Clinical Trials Management) | | | | |
| 53 | BCDS454 | Project Work | 0 | 0 | 12 | 6 |
| 54 | BCDS455 | Internship / Hospital Training | 0 | 0 | 8 | 4 |
| Total | | | 9 | 0 | 20 | 21 |

| **Professional Electives (Sample List)** | |
|---|---|
| **Course Code** | **Course Title** |
| CDSPE01 | Genomic Data Analysis |
| CDSPE02 | AI-Based Disease Prediction |
| CDSPE03 | Biomedical Signal Processing |
| CDSPE04 | Healthcare Quality Analytics |
| CDSPE05 | Medical Image Processing |
| CDSPE06 | Public Health Informatics |
| CDSPE07 | Pharmacovigilance Data Analytics |
| CDSPE08 | Wearable Health Data Analytics |
| **Open Electives (Interdisciplinary)** | |
| **Course Code** | **Course Title** |
| OEC01 | Artificial Intelligence |
| OEC02 | Internet of Things |
| OEC03 | Cloud Computing |
| OEC04 | Cybersecurity Fundamentals |
| OEC05 | Robotics Fundamentals |
| OEC06 | Blockchain Technology |

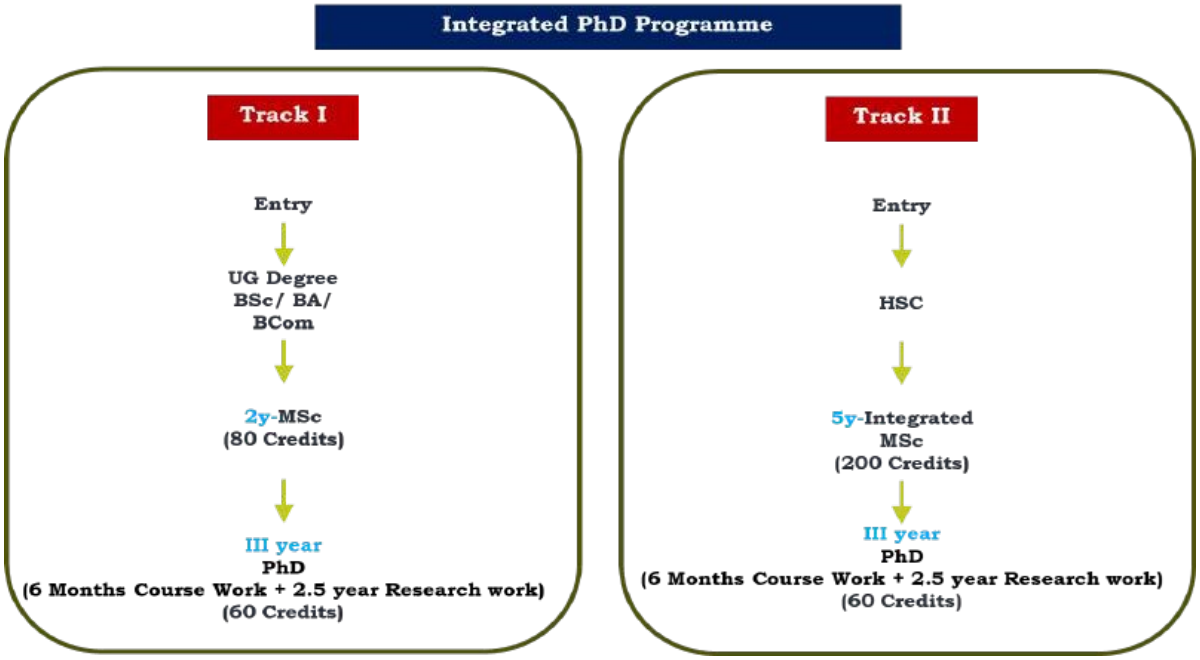
| **Suggested Laboratories** |
|---|
| Key laboratories required: |
| Clinical Data Analytics Lab |
| Biostatistics Lab |
| Machine Learning Lab |
| Medical Imaging Data Lab |
| Healthcare Data Visualization Lab |
| Clinical Decision Systems Lab |
| Big Data Healthcare Lab |

| **Total Credit Summary** | |
|---|---|
| **Component** | **Credits** |
| Basic Sciences | 24 |
| Engineering Sciences | 22 |
| Core Computing & Data Science | 48 |
| Healthcare Core | 36 |
| Emerging Technologies | 16 |
| Humanities & Social Sciences | 10 |
| Professional Electives | 12 |
| Internship | 10 |
| Projects | 14 |
| Value Added | 3 |
| **Total** | **160–165** |

### 2.4.1.3 Programs Delivery Workflow



### 2.4.1.4 Integrated PhD Program




The above Programs will also be permitted to be extended for a period of 3 Years to include an integrated PhD Program.

### 2.4.1.5 Curriculum Design, Delivery, Programme Outcomes, Assessment & Evaluation, and Regulations

#### 1. Curriculum Design

The curriculum framework at **TKR Deemed to be University (Proposed)** follows the principles of **Outcome-Based Education (OBE)** and aligns with the guidelines of the University Grants Commission and the vision of the National Education Policy 2020. It is designed to produce graduates who are competent, innovative, research-oriented, ethically responsible, and socially conscious.

The curriculum adopts a **multidisciplinary approach**, integrating engineering, technology, pharmaceutical sciences, management, healthcare, sustainability, and innovation-driven learning. The emerging programmes introduced at TKR—including **Artificial Intelligence, Robotics, Cyber Threat Intelligence, Renewable Energy Systems, Drone Technology, Sustainable Infrastructure Planning, Innovation and Design Thinking, Intelligent Healthcare Systems, and Clinical Data Science**—are structured to meet national and global workforce demands.

The curriculum includes **core courses, electives, skill enhancement modules, research projects, internships, and foundation courses** to ensure comprehensive academic development. It is structured on a **semester-based credit system**, ensuring academic flexibility, mobility, and continuous evaluation. The curriculum is periodically reviewed by Boards of Studies and Academic Councils to incorporate **emerging technologies, industry needs, and national development priorities**.

### Key Design Features

- Outcome-Based Education (**OBE**) aligned with **Programme Outcomes (POs)** and **Course Outcomes (COs)**
- Multidisciplinary and interdisciplinary curriculum structure
- Skill-based and research-integrated learning
- Inclusion of **Indian Knowledge Systems (IKS)** and emerging technologies
- Strong focus on **innovation, entrepreneurship, and employability**
- Industry-aligned internships and project-based learning
- Continuous curriculum revision based on **industry feedback and technological trends**

### Table 2.7 Curriculum Components

| Component | Description | Purpose |
|---|---|---|
| Core Courses | Core subject-specific courses forming the foundation of the programme | Build strong foundational knowledge and conceptual understanding |
| Electives | Optional courses selected by students based on interest areas | Provide flexibility, interdisciplinary exposure, and specialization |
| Skill Enhancement Modules | Practical, laboratory-based, and vocational modules | Improve employability, technical competency, and industry readiness |
| Research Project | Dissertation, capstone project, or innovation-based research work | Develop research aptitude, analytical thinking, and problem-solving skills |
| Internship | Industry, hospital, or field-based training | Provide real-world exposure and application of theoretical knowledge |
| Foundation Courses | Courses in communication skills, ethics, digital literacy, and environmental awareness | Build soft skills, professional values, and holistic personality development |

### 2. Curriculum Delivery

The curriculum delivery at **TKR Deemed to be University (Proposed)** adopts a balanced blend of **traditional teaching methods and modern pedagogical practices** to ensure effective knowledge transfer and skill development. The teaching-learning process includes lectures, tutorials, laboratory sessions, field-based learning, industry exposure, internships, and research-driven projects.

TKR emphasizes **experiential learning** through hands-on training in advanced laboratories, simulation environments, and industry-linked learning platforms. For emerging programmes such as **Artificial**

**Intelligence, Robotics, Cyber Threat Intelligence, Renewable Energy Systems, Drone Technology, Sustainable Infrastructure Planning, Innovation and Design Thinking, Intelligent Healthcare Systems, and Clinical Data Science**, practical learning components are integrated to enhance innovation and real-world problem-solving skills.

Digital learning platforms and e-resources are incorporated to supplement classroom teaching and promote **blended learning environments**. Regular **workshops, seminars, guest lectures, industrial visits, and conferences** are conducted to provide exposure to contemporary technological developments and professional practices.

Student-centric pedagogical approaches such as **problem-based learning (PBL), case studies, group discussions, simulation exercises, and project-based assignments** are employed to enhance **critical thinking, creativity, teamwork, and analytical abilities** among students.

Modes of Curriculum Delivery

- Lectures and tutorials
- Laboratory and practical sessions
- Field exposure and industry-based learning
- Internships and industry-linked projects
- Blended learning using digital platforms
- Workshops, seminars, guest lectures, and conferences
- Problem-based learning and case-based learning
- Project-based and experiential learning

### Table 2.8 Curriculum Delivery

| **Delivery Mode** | **Description** | **Expected Outcome** |
|---|---|---|
| Lectures & Tutorials | Classroom-based conceptual learning supported by interactive discussions | Strong theoretical understanding and conceptual clarity |
| Lab & Practical Sessions | Hands-on training in laboratories and technical environments | Skill development and application of theoretical concepts |
| Field & Industry Exposure | Visits to industries, infrastructure sites, and research facilities | Exposure to real-world applications and professional practices |
| Internship & Industry Training | Industry-based practical learning and project work | Employability enhancement and work readiness |

| | | |
|---|---|---|
| Digital Learning | Use of e-resources, virtual labs, simulations, and online learning platforms | Flexible, technology-enabled, and modern learning experience |
| Workshops & Seminars | Interaction with industry experts, researchers, and professionals | Updated knowledge, innovation exposure, and professional networking |
| Problem-Based Learning | Case studies and real-life problem-solving activities | Critical thinking, analytical ability, and decision-making skills |

## 3. Programme Outcomes

The programmes offered at **TKR Deemed to be University (Proposed)** are designed to produce graduates who are professionally competent, research-oriented, ethically responsible, and socially responsive. The academic programmes—including emerging fields such as **Artificial Intelligence, Robotics, Cyber Threat Intelligence, Renewable Energy Systems, Drone Technology, Sustainable Infrastructure Planning, Innovation and Design Thinking, Intelligent Healthcare Systems, and Clinical Data Science**—aim to equip students with advanced disciplinary knowledge and industry-relevant skills.

Graduates will demonstrate strong conceptual understanding and the ability to apply **multidisciplinary and interdisciplinary approaches** to solve complex engineering, healthcare, and technological challenges. They will be equipped with **research aptitude, innovation capability, and analytical skills**, enabling them to undertake independent research, contribute to knowledge creation, and engage in evidence-based professional practices.

The curriculum fosters **effective communication skills, teamwork, leadership qualities, and professional ethics** to prepare graduates for collaborative work environments. Students are encouraged to develop **lifelong learning habits** to continuously upgrade their knowledge and adapt to emerging technologies and evolving industry requirements.

The programme outcomes also emphasize **community engagement, sustainability, and social responsibility**, enabling graduates to contribute to societal development, technological advancement, healthcare delivery, environmental sustainability, and national progress.

## Programme Outcomes (POs)

Graduates of TKR programmes are expected to:

- Demonstrate knowledge and skills in their chosen disciplines

- Apply multidisciplinary approaches to solve complex real-world problems
- Exhibit research aptitude and innovation capability
- Demonstrate ethical and professional values
- Communicate effectively in academic and professional contexts
- Engage in lifelong learning and adapt to technological changes
- Contribute to community development and social welfare

### Table 2.9 Programme Outcomes

| PO Code | Programme Outcome |
|---|---|
| PO1 | Discipline-specific knowledge and skills |
| PO2 | Multidisciplinary problem-solving |
| PO3 | Research and innovation |
| PO4 | Professional ethics and responsibility |
| PO5 | Communication and teamwork |
| PO6 | Lifelong learning and adaptability |
| PO7 | Community engagement and social impact |

## 4. Assessment & Evaluation

The assessment and evaluation system at **TKR Deemed to be University (Proposed)** is designed to be **transparent, continuous, and comprehensive**, ensuring fair and objective measurement of student learning outcomes. The evaluation framework aligns with **Outcome-Based Education (OBE)** principles and follows guidelines prescribed by the University Grants Commission and the academic vision of the National Education Policy 2020.

The evaluation process includes **internal assessment and semester-end examinations** conducted under a credit-based academic structure. Internal assessment consists of **periodic tests, assignments, quizzes, presentations, tutorials, case studies, and participation in academic activities**, enabling continuous monitoring of student progress.

Practical and technical competencies are evaluated through **laboratory performance, project-based learning, skill demonstrations, and practical examinations**. For programmes in engineering, technology, and pharmaceutical sciences, **hands-on performance and analytical abilities** are given significant importance.

Semester-end examinations are conducted for both **theory and practical components**, ensuring comprehensive evaluation of conceptual understanding and applied knowledge. Balanced weightage is

assigned to **internal and external assessments**, promoting fairness and academic rigor.

Projects, dissertations, internships, and industry-linked activities are evaluated through **structured rubrics, project reports, presentations, and viva-voce examinations**. The grading system follows the **credit-based CGPA format**, with provisions for **revaluation, supplementary examinations, and academic review** as per university regulations.

### Assessment Methods

- Internal assessment (tests, assignments, presentations, quizzes)
- Practical evaluation and skill demonstrations
- Semester-end examinations (theory and practical)
- Project and dissertation evaluation
- Internship performance assessment
- Viva-voce and oral presentations
- Continuous performance monitoring

### Table 2.10 Assessment & Evaluation

| Assessment Component | Weightage | Evaluation Method |
|---|---|---|
| Internal Assessment | 40% | Periodic tests, assignments, quizzes, and presentations |
| Practical/Lab Assessment | 20% | Laboratory performance, skill demonstrations, and practical records |
| Semester-End Examination | 40% | Theory and practical examinations conducted at the end of each semester |
| Project/Dissertation | Variable | Project report submission, presentation, and viva-voce examination |
| Internship | Variable | Evaluation based on supervisor feedback, performance report, and assessment records |

## 5. Academic Regulations

**TKR Deemed to be University (Proposed)** follows robust academic regulations to ensure **high academic standards, integrity, transparency, and quality assurance** across all programmes. The academic framework is aligned with the guidelines of the University Grants Commission and the principles outlined in the National Education Policy 2020.

All programmes are offered under a **semester-based credit system**, with clearly defined minimum credit requirements for successful completion of undergraduate and postgraduate degrees. Students are required

to maintain the prescribed attendance levels and complete all programme components, including **coursework, laboratory sessions, internships, fieldwork, and research projects**.

The university promotes **academic integrity** through strict anti-plagiarism measures, ethical research practices, and transparent evaluation systems. Students are eligible for progression to higher semesters based on academic performance, and **remedial measures, supplementary examinations, and academic support mechanisms** are provided for students requiring improvement.

TKR ensures continuous academic improvement through **periodic curriculum review and quality assurance mechanisms**, involving feedback from stakeholders such as students, alumni, industry experts, employers, and academic peers. These regulations ensure consistency in academic delivery, adherence to national standards, and alignment with institutional goals of excellence in education and research.

## Academic Regulations

- Semester-based credit system
- Minimum attendance requirement (**75%**)
- Minimum passing grade requirement for progression
- Remedial teaching and re-examination provisions
- Anti-plagiarism and research ethics policy
- Periodic curriculum review and stakeholder feedback
- Credit-based grading and CGPA evaluation system
- Internship and project completion as mandatory programme components

## Table 2.11 Academic Regulations

| **Regulation Area** | **Details** |
|---|---|
| Attendance | Minimum 75% attendance required in each course to be eligible for examinations |
| Credit System | Semester-wise credit-based evaluation system followed across all programmes |
| Progression | Students must pass the minimum required credits to progress to the next semester |
| Re-examination | Supplementary and re-examinations provided for failed or improvement candidates |
| Academic Integrity | Implementation of anti-plagiarism policy, research ethics, and academic honesty guidelines |
| Quality Assurance | Curriculum review conducted every 2–3 years with stakeholder feedback |
| Certification | Degree awarded after successful completion of all required credits, projects, and internship requirements |

## Table 2.12 Consolidated Statement of Curriculum Design and Assessment

| Component | Description (Curriculum Design) | Delivery Methods | Programme Outcomes (POs) | Assessment & Evaluation | Regulations |
|---|---|---|---|---|---|
| Curriculum Design | Outcome-Based Education (OBE) aligned with UGC and NEP 2020. Multidisciplinary curriculum integrating engineering, technology, pharmaceutical sciences, management, healthcare, sustainability, and innovation. Includes core courses, electives, skill enhancement modules, research projects, internships, and foundation courses. | Not Applicable | Graduates with strong knowledge, skills, ethical values, and social responsibility. | Not Applicable | Curriculum reviewed every 2–3 years and updated as per national priorities and technological advancements. |
| Curriculum Structure | Semester-based and credit-based system ensuring flexibility and continuous learning. Minimum credits defined for programme completion. | Lectures, tutorials, laboratory sessions, internships, research projects. | PO1: Discipline knowledge and skills. PO2: Multidisciplinary problem solving. PO3: Research and innovation. PO4: Ethics and professionalism. PO5: Communication and teamwork. PO6: Lifelong learning. PO7: | Internal assessment + Semester-end examinations + Practical evaluation. | Minimum 75% attendance mandatory. |

| | | | | | |
|---|---|---|---|---|---|
| | | | Social responsibility. | | |
| Skill & Research Integration | Skill-based courses and research projects included to enhance employability and research aptitude. | Laboratory sessions, simulation-based learning, workshops, seminars, and research projects. | Graduates capable of applying technical skills in real-world settings and conducting research. | Project evaluation, presentations, viva-voce, research outputs. | Anti-plagiarism and research ethics policy implemented. |
| Internship & Industry Exposure | Mandatory internships and industrial exposure for professional readiness. | Industry visits, internships, fieldwork, hospital or industry exposure. | Graduates prepared for employment and professional practice. | Internship evaluation through supervisor feedback and performance reports. | Internship completion mandatory for degree award. |
| Community Engagement & Ethics | Community outreach programmes, sustainability activities, and ethical education integrated into curriculum. | Fieldwork, extension activities, community service programmes. | Graduates with social responsibility, ethical behavior, and community orientation. | Evaluation based on participation records and field reports. | Ethical guidelines followed for community and professional activities. |
| Assessment System | Continuous, transparent, and comprehensive assessment aligned with Programme Outcomes and Course Outcomes. | Internal tests, assignments, practical exams, seminars, projects, | Ensures development of knowledge, skills, and professional attitude. | Internal Assessment (40%) + Semester-End Exam (40%) + | Revaluation and re-examination provisions available. |

| | | | | | |
|---|---|---|---|---|---|
| | | viva-voce. | | Practical Assessment (20%). | |
| Academic Progression | Students progress based on credit completion and academic performance with remedial support. | Continuous evaluation, mentoring, and academic monitoring. | Graduates meeting defined competency standards. | Promotion based on credit completion and minimum passing requirements. | Minimum passing marks required; remedial examinations available. |
| Quality Assurance | Periodic curriculum review based on stakeholder feedback (students, alumni, industry, experts). | Curriculum review meetings, academic audits, and feedback systems. | Continuous improvement in academic quality and programme relevance. | Review outcomes incorporated into curriculum revisions. | Quality Assurance Cell and internal audit mechanisms established. |

### 2.4.2 Student Admission Plan

**TKR Deemed to be University (Proposed)** will adopt a **student-friendly, transparent, and inclusive admission process** designed to ensure that lack of awareness, socio-economic limitations, or first-generation learner status does not become a barrier to accessing higher education. The University is committed to creating an equitable admission framework that supports students from diverse academic, social, and cultural backgrounds.

TKR aims to establish a **clear enrolment strategy** focused on promoting **equity, inclusivity, and diversity** among its student population. Special attention will be given to students from **rural areas, economically weaker sections, and first-generation learners**, ensuring access to quality higher education opportunities in emerging and multidisciplinary programmes.

While addressing the **educational needs of the regional population**, the University will also strive to attract students from **different states and cultural backgrounds**, thereby promoting diversity in language, culture, and perspectives within the campus environment. The admission process will follow guidelines prescribed by the University Grants Commission and other relevant statutory bodies, ensuring

fairness and compliance with national educational policies.

The University will implement **awareness campaigns, outreach programmes, and counselling sessions** in schools and junior colleges to inform prospective students about available programmes, career opportunities, and admission procedures. Digital platforms and admission portals will be used to simplify application processes and enhance accessibility.

The Student Admission Plan also emphasizes:

- **Merit-based admissions** with provisions for reservations as per Government norms
- **Transparent selection procedures** using entrance examinations or qualifying criteria
- **Online and offline application support systems**
- **Scholarships and financial assistance schemes** for deserving and economically weaker students
- **Special support mechanisms** for first-generation learners
- **Promotion of gender equity and inclusive participation**
- **Regional and national student outreach initiatives**

## Table 2.13 Academic programs, duration, year of starting and intake

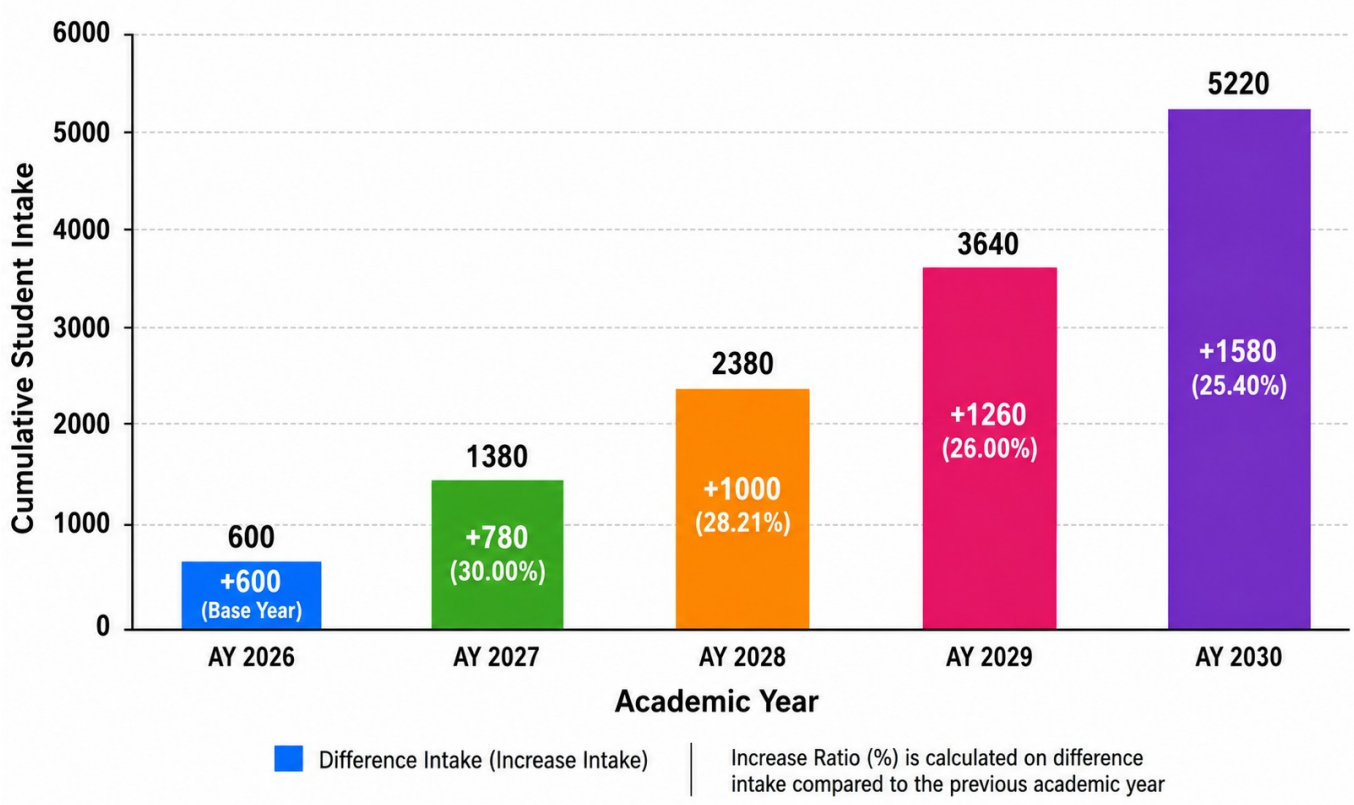
| S No | Subject | Duration | Current Intake | Increased Intake | | | | | Intake by Year | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 |
| School of Emerging Engineering & Technology (22 Courses) | | | | | | | | | | | | | |
| 1 | B.Tech Electric Vehicle Technology | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 2 | B.Tech Robotics and Intelligent Automation | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 3 | B.Tech Cyber Threat Intelligence | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 4 | B.Tech Renewable Energy Systems | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 5 | B.Tech Artificial Intelligence & Intelligent Systems | 4 | | 60 | 30 | 60 | 30 | 60 | 60 | 90 | 150 | 180 | 240 |
| 6 | B.Tech Drone Technology | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 7 | B.Tech Smart Manufacturing | 4 | | | 60 | | 30 | 30 | | 60 | 60 | 90 | 120 |
| 8 | B.Tech Internet of Things | 4 | | | 60 | | 30 | 60 | | 60 | 60 | 90 | 150 |
| 9 | B.Tech Quantum Computing | 4 | | | 60 | | 30 | 40 | | 60 | 60 | 90 | 130 |
| 10 | B.Tech Autonomous Systems | 4 | | | 60 | | 30 | | | 60 | 60 | 90 | 90 |
| 11 | M.Tech Blockchain Technology | 2 | | | 30 | 20 | | 20 | | 30 | 50 | 70 | 90 |
| 12 | B.Tech Augmented & Virtual Reality | 4 | | | | 60 | 30 | | | | 60 | 90 | 90 |
| 13 | B.Tech Biomedical Instrumentation | 4 | | | | 60 | 30 | | | | 60 | 90 | 90 |
| 14 | B.Tech Nanotechnology | 4 | | | | 60 | 50 | | | | 60 | 110 | 110 |
| 15 | B.Tech Sustainable Engineering | 4 | | | | 60 | 40 | | | | 60 | 100 | 100 |
| 16 | M.Tech Mechatronics Engineering | 2 | | | | 30 | 30 | 30 | | | 30 | 60 | 90 |
| 17 | B.Tech Climate Technology | 4 | | | | | 80 | 40 | | | | 80 | 120 |
| 18 | B.Tech Hydrogen Energy Systems | 4 | | | | | 80 | 40 | | | | 80 | 120 |
| 19 | B.Tech Space Technology | 4 | | | | | 80 | 40 | | | | 80 | 120 |
| 20 | B.Tech Smart Infrastructure Engineering | 4 | | | | | 80 | 60 | | | | 80 | 140 |
| 21 | B.Tech Digital Twin Technology | 4 | | | | | | 120 | | | | | 120 |
| 22 | Ph.D. in Artificial Intelligence & Sustainable Engineering Systems | 3 | | | 30 | | | 30 | | 30 | 30 | 30 | 60 |
| School of Social Sciences (7 Courses) | | | | | | | | | | | | | |
| 23 | B.A Sustainable Infrastructure Planning | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 24 | B.A Innovation and Design Thinking | 4 | | 60 | 30 | 30 | 30 | 60 | 60 | 90 | 120 | 150 | 210 |
| 25 | B.A Public Policy & Governance | 4 | | | | | | 80 | | | | | 80 |
| 26 | B.A Urban Development Studies | 4 | | | 60 | 40 | | 40 | | 60 | 100 | 100 | 140 |
| 27 | B.A Disaster Management | 4 | | | | 40 | 40 | | | | 40 | 80 | 80 |
| 28 | M.A Behavioral Sciences | 2 | | | | | 80 | 20 | | | | 80 | 100 |
| 29 | Ph.D. in Public Policy, Governance & Behavioral Sciences | 3 | | | | | | 30 | | | | | 30 |
| School of Pharmacy (7 Courses) | | | | | | | | | | | | | |
| 30 | B.Pharm Intelligent Healthcare Systems | 4 | | 60 | 30 | 60 | 30 | 60 | 60 | 90 | 150 | 180 | 240 |
| 31 | B.Pharm Clinical Data Science | 4 | | 60 | 30 | 60 | 30 | 60 | 60 | 90 | 150 | 180 | 240 |
| 32 | B.Pharm Pharmacovigilance | 4 | | | 60 | 40 | | | | 60 | 100 | 100 | 100 |
| 33 | B.Pharm Regulatory Affairs | 4 | | | | 60 | | 20 | | | 60 | 60 | 80 |
| 34 | B.Pharm Industrial Pharmacy | 4 | | | | | 80 | 20 | | | | 80 | 100 |
| 35 | M.Pharm Pharmaceutical Biotechnology | 2 | | | | | | 120 | | | | | 120 |
| 36 | Ph.D. in Pharmaceutical Sciences & Clinical Research | 3 | | | | | | 30 | | | | | 30 |
| School of Management Sciences (4 Courses) | | | | | | | | | | | | | |
| 37 | BBA Healthcare Management | 4 | | | 60 | 60 | 20 | 20 | | 60 | 120 | 140 | 160 |
| 38 | MBA Health Informatics | 2 | | | | 80 | 40 | 40 | | | 80 | 120 | 160 |
| 39 | MBA Pharmaceutical Management | 2 | | | | | 60 | 20 | | | | 60 | 80 |
| 40 | Ph.D. in Healthcare Management & Digital Business Analytics | 3 | | | | | | 30 | | | | | 30 |
| | Total | | 2299 | 600 | 780 | 1000 | 1260 | 1580 | 600 | 1380 | 2380 | 3640 | 5220 |

## Insights on Admission Plan

**TKR Deemed to be University (Proposed) Five-Year Student Admission Plan (2026–2030)** outlines a structured and strategic expansion designed to promote **equity, inclusivity, diversity, and academic excellence** while addressing regional and national workforce requirements in emerging technologies and healthcare domains.

**Graphical presentation of Admission intake for 2026-27 to 2030-31**




The University plans a **phased introduction of emerging academic programmes**, with total annual intake projected to increase progressively from the initial phase in **2026** to full operational capacity by **2030**. This growth is primarily driven by the launch of specialized programmes within the **School of Engineering and Emerging Technologies** and the **School of Pharmaceutical Sciences**, focusing on future-ready disciplines aligned with industry and societal needs.

Key academic developments include the introduction of innovative undergraduate programmes such as:

- **B.Tech Electric Vehicle Technology**
- **B.Tech Robotics and Intelligent Automation**
- **B.Tech Cyber Threat Intelligence**
- **B.Tech Renewable Energy Systems**
- **B.Tech Artificial Intelligence and Intelligent Systems**
- **B.Tech Drone Technology**
- **B.Tech Sustainable Infrastructure Planning**
- **B.Tech Innovation and Design Thinking**
- **B.Pharm Intelligent Healthcare Systems**
- **B.Pharm Clinical Data Science**

These programmes are planned to be introduced in a **phased manner**, ensuring adequate infrastructure development, faculty recruitment, laboratory readiness, and industry partnerships. The expansion strategy reflects the University's commitment to supporting **emerging technological sectors, digital transformation, sustainable development, and healthcare innovation**.

A notable aspect of the admission plan is its emphasis on **multidisciplinary education**, integrating engineering, healthcare, data science, sustainability, and innovation-focused disciplines. The introduction of emerging programmes supports the national vision of **technology-driven education and skill-based workforce development**, consistent with the principles of the National Education Policy 2020 and guidelines of the University Grants Commission.

To ensure equitable access to education, **TKR Deemed to be University** is committed to:

- Simplifying admission procedures to remove barriers for **first-generation learners**
- Providing **financial support and scholarships** for economically weaker sections
- Encouraging participation from **rural and underserved communities**
- Promoting **gender equity and social inclusion**
- Expanding outreach programmes in schools and junior colleges

The admission plan also emphasizes **capacity building and infrastructure readiness**, ensuring that programme expansion is supported by modern laboratories, digital learning resources, and trained faculty. Continuous monitoring of enrolment patterns, stakeholder feedback, and regional educational demands will guide future admission strategies.

Overall, the Five-Year Admission Plan reflects a **balanced growth strategy**, ensuring that expansion in student intake is aligned with academic quality, infrastructure development, and employability outcomes. This strategic approach will enable **TKR Deemed to be University (Proposed)** to evolve into a **multidisciplinary institution delivering high-quality, industry-relevant education** and contributing to regional and national development.

### 2.4.2.1 Admission Strategy, Policy, Regulation and Process

### 1. Admission Strategy

**TKR Deemed to be University (Proposed)** follows a **strategic admission framework** designed to ensure **quality, inclusivity, transparency, and academic excellence**. The admission strategy aligns with the University's vision of developing competent professionals, promoting research and innovation, and serving society through **multidisciplinary and emerging technology education**.

The admission framework is designed in accordance with the principles of the National Education Policy 2020 and regulatory guidelines of the University Grants Commission and other statutory bodies such as All India Council for Technical Education and Pharmacy Council of India.

**Table 2.14 Admission Strategy and Action Steps**

| Strategy | Action Steps (Best Practices) |
|---|---|
| Digital & Technology-Driven Admissions | • Develop a simplified and secure online admission portal with end-to-end application tracking.• Offer virtual campus tours, webinars, and live Q&A sessions.• Provide chatbot-based instant query support.• Conduct online counselling and career guidance sessions.• Provide complete information on programmes, faculty, infrastructure, placements, and scholarships.• Implement digital verification of documents for faster processing.• Offer short online orientation/preparatory modules for prospective students. |
| Simple & Student-Friendly Admission Process | • Publish clear pre-enrolment policies, procedures, and eligibility criteria.• Provide user-friendly application forms with multilingual options.• Establish dedicated help desk support for first-generation learners.• Ensure transparent merit list publication and seat allocation.• Provide timely communication on admission status and deadlines. |
| Pre-Exposure to University Programs & Facilities | • Conduct school-level workshops, innovation contests, and technical competitions.• Organize summer training programmes for school and diploma students.• Conduct open house programmes and campus visits.• Organize awareness sessions for parents, teachers, and counsellors.• Invite students to participate in university technical events and exhibitions. |
| Industry and Skill-Oriented Engagement | • Conduct industry interaction programmes and technology awareness sessions.• Facilitate industry-sponsored orientation programmes.• Organize skill development camps and career counselling sessions.• Offer foundation-level technology workshops for aspiring students. |
| Financial Support & Scholarships | • Establish a centralized scholarship management system.• Provide financial counselling to students and parents.• Offer merit-based and merit-cum-means scholarships.• Provide fee concessions for economically weaker students.• Implement “Earn While You Learn” programmes.• Facilitate educational loan assistance.• Promote industry-sponsored scholarships and fellowships. |

## 2. Admission Policy and Objectives

**TKR Deemed to be University (Proposed)** follows a **transparent, merit-based, and inclusive admission policy** aligned with national regulations and statutory requirements.

Objectives of Admission Policy

The admission policy aims to:

- Identify and admit students with **academic competence and professional aptitude**
- Ensure **equal opportunity and access** to students from diverse socio-economic backgrounds
- Promote **gender equity and regional diversity**
- Encourage admission to **emerging technology and healthcare programmes**
- Support **merit-based and need-based financial assistance**
- Maintain **transparency, accountability, and regulatory compliance**

## 3. Admission Process

### A. Eligibility and Notification

- Eligibility criteria for each programme will be published in the **University Prospectus** and official website.
- Admission notifications will be released annually with clear deadlines and instructions.
- Eligibility requirements will comply with norms of the University Grants Commission, All India Council for Technical Education, and Pharmacy Council of India.

### B. Application and Documentation

- Online application through a secure admission portal
- Digital submission of academic and supporting documents
- Automated application tracking system
- Multilingual support options for ease of use
- Transparent communication regarding application status

### C. Entrance Test & Merit Evaluation

Admissions to selected programmes may be based on:

- National or State Entrance Examination Scores (where applicable)
- Qualifying examination marks
- Institutional aptitude test (for selected emerging programmes)
- Interview or interaction (where applicable)
- Sports and extracurricular achievements (if relevant)

- Merit will be prepared based on approved academic norms.

### D. Centralized Admission Committee

A **Centralized Admission Committee** will be constituted to ensure:

- Transparent admission procedures
- Eligibility verification
- Preparation of merit lists
- Seat allocation as per programme capacity
- Grievance redressal

### E. Seat Allocation and Counselling

- Seats will be allocated based on **merit, eligibility, and reservation policies**.

- Counselling sessions will be conducted to guide students and parents.
- Academic and career guidance support will be provided.

### F. Final Admission and Enrolment

- Offer letters will be issued through the admission portal.
- Admission will be confirmed after fee payment and document verification.
- Newly admitted students will participate in **orientation programmes**.

### G. Annual Review and Continuous Improvement

- Admission processes will be reviewed annually.
- Feedback will be collected from students, parents, and stakeholders.
- Process improvements will be implemented regularly.

## 4. Merit and Merit-cum-Means Scholarships

To promote **access, equity, and academic excellence**, the University will offer:

Scholarship Categories

- **Merit Scholarships**
  Based on academic performance and entrance examination scores.
- **Merit-cum-Means Scholarships**
  Based on academic merit and financial need.
- **Fee Concessions**
  Provided to economically weaker students.

Scholarship Distribution Policy

- Scholarships will be awarded to **10% of admitted students** in each programme.
- Among eligible students:
  - **50% students** receive **full tuition fee waiver**
  - **50% students** receive **50% tuition fee waiver**
- Scholarships will be renewed annually based on academic performance.
- First-year scholarships will be based on entrance merit.
- Renewal in subsequent years will depend on academic progress.

## 5. Social and Economic Inclusion

**TKR Deemed to be University (Proposed)** is committed to **inclusive education** and equal opportunity.

Support for Underrepresented Groups
Special support programmes will be provided for students from:

- Economically weaker backgrounds
- Rural and semi-urban regions
- First-generation learners
- Underrepresented communities

Support Mechanisms

- Bridge courses

- Remedial coaching
- Academic mentoring
- Financial aid programmes
- Career guidance
- Outreach programmes in rural areas

## 6. National, Regional and International Diversity

### National Diversity

- Admissions promoted through national outreach programmes
- Collaboration with schools and junior colleges
- Representation from diverse regions across India

### Regional Diversity

- Outreach campaigns across districts and neighboring states
- Regional scholarship support
- Hostel and transportation support

### International Diversity

- Admission for foreign nationals, NRIs, and OCI candidates through:
    - Study in India initiative
    - Bilateral MoUs with international universities
    - Special international quota

- Dedicated International Student Cell for onboarding and cultural integration.

## 7. Transparency in Admission Process

The admission process will be **fully transparent and merit-driven**.

All admission-related information will be published on:

- University website
- Prospectus
- Admission notifications

Details will include:

- Eligibility criteria
- Admission schedules
- Merit lists
- Seat allocation
- Fee structure

### Admission Monitoring Committee

An **Admission Monitoring Committee** will function under the Academic Council.

Responsibilities

- Ensure compliance with statutory regulations

- Monitor admission transparency
- Audit admission procedures
- Resolve grievances
- Recommend improvements
- Maintain quality standards

### 2.4.3 Faculty Recruitment Plan

**Table 2.15 Academic programs, Student Faculty Ratio, Enrollment of Students, year-wise total faculty required and year-wise, cader wise requirement**

| S No | Subject | Faculty - Ratio | Students Enrolled | | | | | Faculty | | | | | Professors | | | | | Associate Professors | | | | | Assistant Professors | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 |
| School of Emerging Engineering & Technology (22 Courses) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | B.Tech Electric Vehicle Technology | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 17 | 26 | 29 | 0 | 1 | 2 | 3 | 3 | 1 | 2 | 4 | 6 | 6 | 2 | 5 | 11 | 17 | 20 |
| 2 | B.Tech Robotics and Intelligent Automation | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 22 | 34 | 29 | 0 | 1 | 2 | 4 | 3 | 1 | 2 | 5 | 8 | 6 | 2 | 5 | 15 | 22 | 20 |
| 3 | B.Tech Cyber Threat Intelligence | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 17 | 26 | 29 | 0 | 1 | 2 | 3 | 3 | 1 | 2 | 4 | 6 | 6 | 2 | 5 | 11 | 17 | 20 |
| 4 | B.Tech Renewable Energy Systems | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 17 | 26 | 29 | 0 | 1 | 2 | 3 | 3 | 1 | 2 | 4 | 6 | 6 | 2 | 5 | 11 | 17 | 20 |
| 5 | B.Tech Artificial Intelligence & Intelligent Systems | 20 | 60 | 150 | 300 | 480 | 660 | 3 | 8 | 22 | 34 | 33 | 0 | 1 | 2 | 4 | 4 | 1 | 2 | 5 | 8 | 7 | 2 | 5 | 15 | 22 | 22 |
| 6 | B.Tech Drone Technology | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 22 | 34 | 29 | 0 | 1 | 2 | 4 | 3 | 1 | 2 | 5 | 8 | 6 | 2 | 5 | 15 | 22 | 20 |
| 7 | B.Tech Smart Manufacturing | 20 | | 60 | 120 | 210 | 330 | 0 | 3 | 6 | 11 | 17 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 4 | 0 | 2 | 4 | 8 | 11 |
| 8 | B.Tech Internet of Things | 20 | | 60 | 120 | 210 | 360 | 0 | 3 | 6 | 11 | 18 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 4 | 0 | 2 | 4 | 8 | 12 |
| 9 | B.Tech Quantum Computing | 12 | | 60 | 120 | 210 | 340 | 0 | 4 | 10 | 14 | 14 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 2 | 3 | 3 | 0 | 3 | 7 | 9 | 9 |
| 10 | B.Tech Autonomous Systems | 20 | | 60 | 120 | 210 | 300 | 0 | 3 | 6 | 11 | 15 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 1 | 2 | 3 | 0 | 2 | 4 | 8 | 10 |

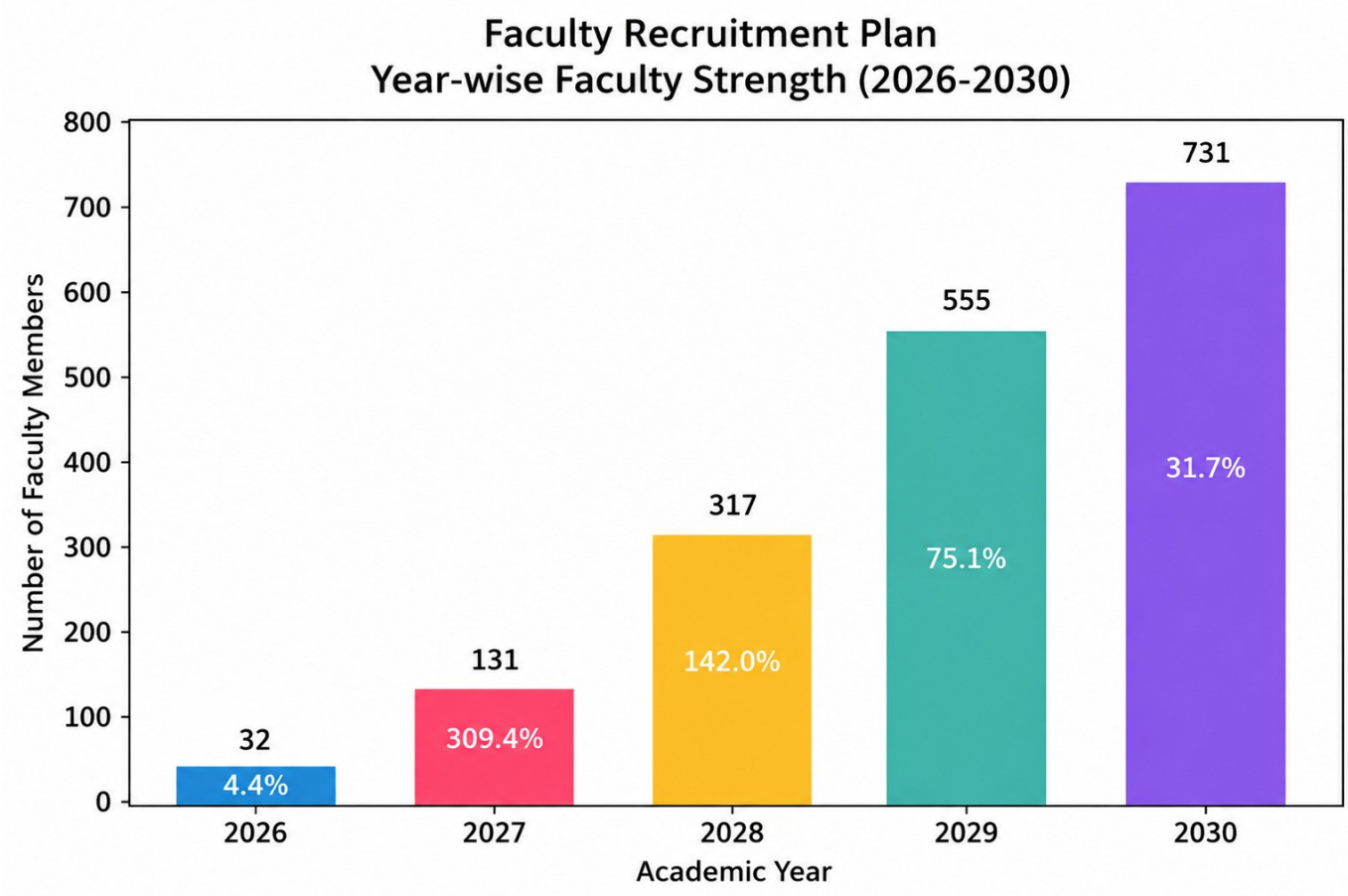
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | M.Tech Blockchain Technology | 20 | | 30 | 80 | 120 | 160 | 0 | 2 | 4 | 6 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 2 | 0 | 2 | 3 | 4 | 5 |
| 12 | B.Tech Augmented & Virtual Reality | 20 | | | 60 | 150 | 240 | 0 | 0 | 3 | 8 | 12 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 2 | 5 | 8 |
| 13 | B.Tech Biomedical Instrumentation | 20 | | | 60 | 150 | 240 | 0 | 0 | 3 | 8 | 12 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 2 | 5 | 8 |
| 14 | B.Tech Nanotechnology | 20 | | | 60 | 170 | 280 | 0 | 0 | 3 | 9 | 14 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 3 | 0 | 0 | 2 | 6 | 9 |
| 15 | B.Tech Sustainable Engineering | 12 | | | 60 | 160 | 260 | 0 | 0 | 5 | 13 | 21 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 1 | 3 | 5 | 0 | 0 | 3 | 9 | 14 |
| 16 | M.Tech Mechatronics Engineering | 20 | | | 30 | 90 | 150 | 0 | 0 | 2 | 5 | 8 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 2 | 3 | 5 |
| 17 | B.Tech Climate Technology | 20 | | | | 80 | 200 | 0 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 7 |
| 18 | B.Tech Hydrogen Energy Systems | 20 | | | | 80 | 200 | 0 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 7 |
| 19 | B.Tech Space Technology | 20 | | | | 80 | 200 | 0 | 0 | 0 | 4 | 10 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 7 |
| 20 | B.Tech Smart Infrastructure Engineering | 20 | | | | 80 | 220 | 0 | 0 | 0 | 4 | 11 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 8 |
| 21 | B.Tech Digital Twin Technology | 20 | | | | | 120 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| 22 | Ph.D. in Artificial Intelligence & Sustainable Engineering Systems | 3 | | 30 | 60 | 90 | 120 | 0 | 10 | 20 | 30 | 40 | 0 | 1 | 2 | 3 | 4 | 0 | 2 | 4 | 7 | 9 | 0 | 7 | 14 | 20 | 27 |
| School of Social Sciences (7 Courses) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | B.A Sustainable Infrastructure | 20 | 60 | 150 | 270 | 420 | 570 | 3 | 8 | 17 | 26 | 29 | 0 | 1 | 2 | 3 | 3 | 1 | 2 | 4 | 6 | 6 | 2 | 5 | 11 | 17 | 20 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Planning** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **24** | **B.A Innovation and Design Thinking** | **20** | **60** | **150** | **270** | **420** | **570** | **3** | **8** | **17** | **26** | **29** | **0** | **1** | **2** | **3** | **3** | **1** | **2** | **4** | **6** | **6** | **2** | **5** | **11** | **17** | **20** |
| **25** | **B.A Public Policy & Governance** | **20** | | | | | **80** | **0** | **0** | **0** | **0** | **4** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **3** |
| **26** | **B.A Urban Development Studies** | **20** | | **60** | **160** | **260** | **400** | **0** | **3** | **8** | **13** | **20** | **0** | **0** | **1** | **1** | **2** | **0** | **1** | **2** | **3** | **4** | **0** | **2** | **5** | **9** | **14** |
| **27** | **B.A Disaster Management** | **20** | | | **40** | **120** | **200** | **0** | **0** | **2** | **6** | **10** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **1** | **2** | **0** | **0** | **2** | **4** | **7** |
| **28** | **M.A Behavioral Sciences** | **20** | | | | **80** | **180** | **0** | **0** | **0** | **4** | **9** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **2** | **0** | **0** | **0** | **3** | **6** |
| **29** | **Ph.D. in Public Policy, Governance & Behavioral Sciences** | **3** | | | | | **30** | **0** | **0** | **0** | **0** | **10** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **7** |
| **School of Pharmacy (7 Courses)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **30** | **B.Pharm Intelligent Healthcare Systems** | **15** | **60** | **150** | **300** | **480** | **660** | **4** | **15** | **29** | **47** | **47** | **0** | **2** | **3** | **5** | **5** | **1** | **3** | **6** | **10** | **10** | **3** | **10** | **20** | **32** | **32** |
| **31** | **B.Pharm Clinical Data Science** | **15** | **60** | **150** | **300** | **480** | **660** | **4** | **15** | **29** | **47** | **47** | **0** | **2** | **3** | **5** | **5** | **1** | **3** | **6** | **10** | **10** | **3** | **10** | **20** | **32** | **32** |
| **32** | **B.Pharm Pharmacovigilance** | **15** | | **60** | **160** | **260** | **360** | **0** | **6** | **11** | **18** | **22** | **0** | **1** | **1** | **2** | **2** | **0** | **1** | **2** | **4** | **5** | **0** | **4** | **8** | **12** | **15** |
| **33** | **B.Pharm Regulatory Affairs** | **15** | | | **60** | **120** | **200** | **0** | **0** | **6** | **11** | **15** | **0** | **0** | **1** | **1** | **2** | **0** | **0** | **1** | **2** | **3** | **0** | **0** | **4** | **8** | **10** |
| **34** | **B.Pharm Industrial Pharmacy** | **15** | | | | **80** | **180** | **0** | **0** | **0** | **6** | **12** | **0** | **0** | **0** | **1** | **1** | **0** | **0** | **0** | **1** | **3** | **0** | **0** | **0** | **4** | **8** |
| **35** | **M.Pharm Pharmaceutical Biotechnology** | **15** | | | | | **120** | **0** | **0** | **0** | **0** | **8** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **5** |
| **36** | **Ph.D. in** | **3** | | | | | **30** | **0** | **0** | **0** | **0** | **10** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **7** |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Pharmaceutical Sciences & Clinical Research** | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **School of Management Sciences (4 Courses)** | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **37** | **BBA Healthcare Management** | **20** | | **60** | **180** | **320** | **480** | **0** | **3** | **9** | **16** | **24** | **0** | **0** | **1** | **2** | **3** | **0** | **1** | **2** | **4** | **5** | **0** | **2** | **6** | **10** | **16** |
| **38** | **MBA Health Informatics** | **20** | | | **80** | **200** | **280** | **0** | **0** | **4** | **10** | **14** | **0** | **0** | **0** | **1** | **2** | **0** | **0** | **1** | **2** | **3** | **0** | **0** | **3** | **7** | **9** |
| **39** | **MBA Pharmaceutical Management** | **20** | | | | **60** | **140** | **0** | **0** | **0** | **3** | **7** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **1** | **2** | **0** | **0** | **0** | **2** | **4** |
| **40** | **Ph.D. in Healthcare Management & Digital Business Analytics** | **3** | | | | | **30** | **0** | **0** | **0** | **0** | **10** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **7** |
| | **Total** | | **600** | **1980** | **4360** | **7970** | **12400** | **32** | **131** | **317** | **555** | **731** | **0** | **14** | **33** | **60** | **79** | **10** | **31** | **69** | **124** | **157** | **22** | **86** | **215** | **371** | **495** |

### Insights on Recruitment Plan

Graphical representation of proposed Faculty recruitment for 2026-2027 to 2030-2031




## 2.4.3.1 Faculty Recruitment Strategy, Policy, Requirement planning, Sources, Selection Process, Induction and onboarding, Performance review and Incentive Schemes

### 1. Faculty Recruitment Strategy

A strong faculty recruitment strategy is essential to ensure academic excellence, research growth, and institutional credibility. TKRDU aims to attract talented faculty through transparent, merit-based, and competitive recruitment methods aligned with UGC and statutory bodies (NMC, INC, AICTE, PCI, RCI).

Key Strategic Elements

- Faculty Strength Planning: Based on program expansion, student-faculty ratio, and statutory norms.
- Competency Mapping: Identifying required qualifications, teaching, research, and industry skills.
- Talent Pipeline Creation: Partnering with premier institutions and industries to attract

high-quality candidates.
- Diversity & Inclusion: Ensuring representation across gender, region, and social backgrounds.
- Global Outreach: Hiring international and visiting faculty to enhance global exposure.

**Table 2.16 Focus, year wise key actions and outcomes**

| Year | Focus | Key Actions | Outcomes |
|---|---|---|---|
| Year 1 | Establishment | Faculty Recruitment Cell, FDC, API system | Baseline faculty strength & quality |
| Year 2 | Quality Enhancement | FDPs, mentorship, research workshops | Improved teaching & research |
| Year 3 | Research & Collaboration | Industry linkages, research clusters | Increased funded projects & patents |
| Year 4 | Globalization | International faculty, global collaborations | Enhanced global exposure |
| Year 5 | Consolidation | Incentives & policy review | Sustainable excellence |

**2. Faculty Recruitment Policy (Best Practices) Policy Objective**

To maintain a transparent, merit-based recruitment system while complying with UGC and statutory regulations.

Policy Principles

- Transparency: Open advertisement and fair selection.
- Merit-based: Academic credentials, research and teaching capabilities.
- Equity & Diversity: Inclusion of underrepresented candidates.
- Statutory Compliance: Aligning with UGC/AICTE/NMC/INC/PCI/RCI rules.
- Ethical Standards: Zero tolerance for plagiarism, misconduct.

**3. Faculty Requirement Planning (Quantity & Quality Analysis)**

**A. Faculty Quantity Planning**

- Based on UGC prescribed student-faculty ratio and statutory requirements.
- Annual faculty gap analysis to forecast recruitment needs.

B. Faculty Quality Analysis

Quality indicators include:

- Academic credentials (PhD, NET/SET, specialization)
- Teaching experience and pedagogy
- Research output (publications, projects, patents)
- Industry experience and consultancy
- Academic leadership and administrative capability

## 4. Sources of Faculty Recruitment

### Table: 2.17 Sources of Faculty

| Source | Description | Benefits |
|---|---|---|
| Premier Institutes (IITs, NITs, AIIMS, IIMs, IISERs) | Hiring through campus placements and targeted outreach | High research & teaching quality |
| National Eligibility Test (NET/SET) Qualified Candidates | Priority to NET/SET qualified faculty | Ensures academic eligibility |
| International Faculty | Collaborations and visiting faculty programs | Global exposure & research collaboration |
| Industry Experts | Experienced professionals for applied teaching | Practical and industry-oriented learning |
| Online Recruitment Platforms (LinkedIn, Naukri, ResearchGate) | Wider reach and candidate pool | Faster hiring & diverse candidates |
| Faculty Referral | Internal recommendations from existing faculty | Better cultural fit and reliability |
| Research Collaborations | Identify potential faculty through research partnerships | High research productivity |
| Guest Faculty Pool | Part-time experts from industry/academia | Flexibility and niche expertise |

## 5. Faculty Selection Process

### A. Selection Committee

A transparent selection committee will be constituted comprising:

- Vice Chancellor/Director
- Dean of Academics
- HOD of the department
- External subject expert
- Statutory body representative (where applicable)
- IQAC member

### B. Selection Steps

1. Advertisement & Notification
   - o Published on the University website and national newspapers.
2. Application Screening
   - o Shortlisting based on eligibility, research, and teaching potential.
3. Demonstration Lecture / Teaching Demo
   - o Evaluate pedagogy, communication, and student engagement.
4. Technical Interview
   - o Subject expertise, research aptitude, and problem-solving.
5. Research Presentation

- Publication record, research plan, funding potential.

6. Reference Check & Background Verification
7. Final Approval
   - By Academic Council / Governing Body

6. Faculty Induction & Onboarding Induction Program Components

- University vision and mission
- Academic policies and code of conduct
- Outcome-Based Education (OBE) training
- Teaching & learning methodologies
- Research ethics and publication norms
- Orientation on administrative systems

Probation Period

- Six months probation with performance review
- Confirmation based on teaching effectiveness, research involvement, and conduct

7. Faculty Performance Review (API & Annual Appraisal)

Performance Metrics

- Teaching and Learning (Student Feedback, Learning Outcomes)
- Research (Publications, Projects, Patents)
- Extension and Consultancy
- Administrative Responsibilities

API Scoring System

A standardized Academic Performance Index (API) will be used based on UGC norms.

8. Incentive Scheme

**Rewards for Excellence**

- Best Faculty Awards
- Research Grants
- Conference Sponsorship
- Promotion & Career Progression
- Monetary Incentives for high-impact publications and patents

Accountability

- Poor performers will be placed on an improvement plan.
- Termination if performance remains unsatisfactory, following UGC rules.

## Table 2.18 Institution/ School wise recruitment of specific area year on year

| Constituent Institution – TKRDU | 2026–27 (Phase I – Foundation) | 2027–28 (Expansion) | 2028–29 (Strengthening) | 2029–30 (Advanced Integration) | 2030–31 (Global Alignment) | Qualifications, Experience & Required Number |
|---|---|---|---|---|---|---|
| TKR College of Engineering & Technology (TKRCET) | Recruitment of core engineering faculty across CSE, ECE, EEE, Mechanical and Civil Engineering | Recruitment of specialization faculty in AI, Data Science, IoT, Cyber Security | Recruitment of interdisciplinary research faculty in Robotics, EV Technology and Renewable Energy | Recruitment of faculty in emerging technologies such as Digital Twin, Smart Infrastructure and Industry 4.0 | Recruitment of international faculty and global research experts | As per AICTE norms |
| TKR Institute of Management and Sciences (TKRIMS) | Recruitment of core MBA faculty in Finance, Marketing, HR and Operations | Recruitment of faculty in Healthcare Management and Business Analytics | Recruitment of Digital Business and FinTech specialists | Recruitment of Entrepreneurship and Innovation faculty | Recruitment of Global Business and International Management faculty | As per AICTE norms |
| TKR College of Pharmacy (TKRCP) | Recruitment of core Pharmacy faculty in Pharmaceutics, Pharmacology, Pharmaceutical Chemistry and Pharmacognosy | Recruitment of specialization faculty in Clinical Pharmacy and Pharmaceutical Analysis | Recruitment of research faculty in Pharmaceutical Biotechnology and Drug Discovery | Recruitment of faculty in Regulatory Affairs and Pharmacovigilance | Recruitment of international research faculty in advanced pharmaceutical sciences | As per PCI norms |
| TKR College of | Recruitment of | Recruitment of laboratory | Recruitment of faculty in | Recruitment of advanced skill | Strengthening industry- | As per AICTE / |

| | | | | | | |
|---|---|---|---|---|---|---|
| Engineering & Technology – Diploma (Polytechnic) | foundational diploma faculty across Civil, Mechanical, Electrical and Electronics disciplines | instructors and skill-based trainers | industry-linked diploma specializations | trainers in automation and manufacturing technologies | integrated teaching faculty | State Board of Technical Education norms |

**2.4.4 Research Plan**

**TKR Deemed to be University (TKRDU)** is committed to fostering a vibrant and sustainable research ecosystem that emphasizes quality, innovation, and societal impact across **Integrated Multidisciplinary Sciences**. The University will promote research excellence across domains including **Engineering and Technology, Pharmaceutical Sciences, Management, Applied and Allied Sciences, Indian Knowledge Systems (IKS), and Social Sciences & Humanities**.

The University aims to strengthen both modern scientific knowledge and traditional systems through a unified, collaborative, and interdisciplinary approach that supports innovation, knowledge dissemination, and national development.

To ensure systematic research growth, **annual publication targets** will be established across all departments. Faculty members will be encouraged to publish **a minimum of two high-quality indexed research articles per year**, while postgraduate students will publish **at least one research paper** derived from their dissertation work. PhD scholars will publish **a minimum of two indexed research articles prior to thesis submission**, and at least **10% of undergraduate students** will participate in research projects, publications, or academic conferences. The University aims to achieve a **15–20% year-on-year growth in research publications** across all disciplines.

To support these goals, the University will establish strong institutional mechanisms including **peer-review committees, research mentoring systems, academic editing and proofreading support, and structured research development programs**. Financial assistance will be provided to support publications in reputed indexed journals, patent filing, book chapters, and conference participation. Faculty members and students will be motivated through **graded incentives**, travel grants, and recognition programs.

Recognition and reward mechanisms will include institutional awards such as:

- **Best Researcher Award**
- **Top-Cited Article Award**
- **UG/PG/PhD Research Excellence Award**
- **High-Performing Department Award**
- **Young Researcher Award**

Special emphasis will be placed on **innovation-driven research** and **technology-enabled applications** across emerging domains. The University will establish **dedicated research centres**, provide **seed funding support**, and actively promote external funding through national and international agencies, industry collaborations, and sponsored research projects.

Undergraduate students will be actively engaged through **research clubs, innovation cells, interdisciplinary projects, and annual research exhibitions**. Postgraduate students will be guided through **Departmental Research Committees (DRCs)** to ensure quality dissertation work and publication outcomes. Doctoral scholars will receive structured mentoring in **research methodology, grant writing, intellectual property development, project management, and research dissemination**. To ensure transparency, accountability, and continuous improvement, the University will maintain **digital research dashboards**, publish an **Annual Research and Innovation Report**, and benchmark research performance against national and international standards.

This **five-year rolling research plan** is designed to significantly enhance the University's research productivity, global visibility, innovation outcomes, and societal contributions.

## Strategic Objectives

The University will pursue the following strategic objectives to strengthen research excellence:

1. **Strengthen institutional research culture and infrastructure** through modern laboratories, research centres, and digital resources.
2. **Promote interdisciplinary and translational research** across engineering, pharmacy, management, and applied sciences.
3. **Enhance national and international collaborations** with academic institutions, research organizations, and industries.
4. **Increase external funding and sponsored research projects** from government agencies and private sector partners.
5. **Promote innovation, patents, and technology transfer** through incubation centres and intellectual property initiatives.
6. **Build research capacity** through structured training, workshops, and mentorship programs.
7. **Align research activities with Sustainable Development Goals (SDGs)** and national priority missions.
8.

## Research Priority Areas

TKRDU identifies **Integrated Multidisciplinary Sciences** as its core research focus. These priority areas will be reviewed annually to align with emerging technologies, national priorities, and global challenges.

1. Engineering & Technology
   - Artificial Intelligence (AI) and Machine Learning (ML)
   - Data Science, Big Data Analytics, and Cybersecurity
   - Robotics, Automation, and Industry 4.0
   - Internet of Things (IoT) and Smart Systems
   - Renewable Energy, Smart Grids, and Clean Technologies
   - Electric Vehicles and Sustainable Transportation
   - Advanced, Composite, and Smart Materials
   - Digital Twin Technologies and Smart Infrastructure
2. Pharmaceutical Sciences
   - Drug Discovery and Development
   - Pharmaceutical Biotechnology
   - Clinical Pharmacy and Pharmacovigilance
   - Pharmaceutical Analysis and Quality Assurance

- Regulatory Affairs and Pharmaceutical Policy
- Nanomedicine and Targeted Drug Delivery
- Herbal and Natural Product Research

3. Management Sciences
   - Business Administration and Leadership
   - Healthcare and Hospital Management
   - Financial Systems and Economic Policy
   - Innovation, Entrepreneurship, and Start-up Development
   - Supply Chain and Operations Management
   - Digital Business and Business Analytics
4. Applied and Allied Sciences
   - Environmental Science and Sustainability
   - Materials Science and Nanotechnology
   - Applied Mathematics and Data Analytics
   - Computational Modeling and Simulation
   - Industrial Chemistry and Applied Physics
5. Social Sciences & Humanities
   - Governance, Public Policy, and Administration
   - Education, Pedagogy, and Learning Technologies
   - Rural Development and Social Inclusion
   - Behavioral and Psychological Studies
   - Cultural, Historical, and Development Studies
6. Cross-Cutting Multidisciplinary Themes
   - Innovation, Incubation, and Start-up Ecosystems
   - Digital Transformation Across Disciplines
   - Sustainability and Green Technologies
   - Entrepreneurship and Skill Development
   - Industry-Academia Collaboration
   - Indian Knowledge Systems (IKS) and Traditional Knowledge Integration

### 2.4.4.1 Research Vision, Priorities areas, Publications and Research targets, Encouragement Policy, Incentives Structure and Budget Summary

#### 1. Vision and Institutional Commitment

**TKR Deemed to be University (TKRDU)** is committed to fostering a vibrant and sustainable research ecosystem that emphasizes **quality, innovation, interdisciplinarity, and societal impact** across **Integrated Multidisciplinary Sciences**. The University envisions research as a cornerstone for academic excellence, technological advancement, and national development.

The research framework encompasses diverse domains including **Engineering and Technology, Pharmaceutical Sciences, Management Sciences, Applied and Allied Sciences, Social Sciences and Humanities, Indian Knowledge Systems (IKS), and Traditional Systems of Knowledge**. The University adopts a **unified and integrative approach**, combining modern scientific advancements with traditional knowledge systems, aligned with **national priorities, industry needs, and global best practices**.

To achieve sustained research growth, the University targets a **15–20% year-on-year increase in research output**, including publications, funded projects, patents, and innovation outcomes. This growth will be supported through structured faculty engagement, active student participation, interdisciplinary

collaboration, and strong institutional support mechanisms.
The University commits to establishing state-of-the-art research infrastructure, strengthening research governance frameworks, and promoting a culture of inquiry, creativity, and innovation that contributes to societal well-being and sustainable development.

## 2. Strategic Objectives

The University will pursue the following strategic objectives to achieve research excellence:

1. **Strengthen Institutional Research Culture and Infrastructure**
   Establish modern laboratories, research centres, and digital resources to support high-quality research activities.
2. **Foster Interdisciplinary and Translational Research**
   Promote collaboration across disciplines to address complex societal and technological challenges.
3. **Increase National and International Research Collaborations**
   Develop partnerships with reputed universities, research organizations, industries, and international institutions.
4. **Enhance External Funding and Industry Partnerships**
   Encourage sponsored research, consultancy projects, and collaborative initiatives with government and private agencies.
5. **Promote Innovation, Patents, and Technology Transfer**
   Establish innovation ecosystems supporting intellectual property development and commercialization.
6. **Build Research Capacity through Training and Mentorship**
   Conduct faculty development programs, research methodology workshops, and mentoring initiatives.
7. **Align Research Outcomes with Sustainable Development Goals (SDGs)**
   Focus research activities on addressing global challenges such as sustainability, health, and inclusive growth.

## 3. Priority Areas (Integrated Multidisciplinary Sciences)

TKRDU identifies **Integrated Multidisciplinary Sciences** as its core research focus, ensuring alignment with emerging technologies, societal challenges, and national missions.

1. **Engineering & Technology**

- Artificial Intelligence (AI) and Machine Learning
- Data Science, Big Data Analytics, and Cybersecurity
- Robotics, Automation, and Industry 4.0
- Internet of Things (IoT) and Smart Systems
- Renewable Energy, Smart Grids, and Clean Technologies
- Electric Mobility and Sustainable Systems
- Advanced and Smart Materials

2. Health & Life Sciences

- Public Health, Epidemiology, and Community Medicine
- Biotechnology and Translational Research
- Medical Devices, Digital Health, and Clinical Innovation
- Nursing and Allied Health Sciences
- Preventive and Community Healthcare Systems

3. Management Sciences
- Healthcare and Hospital Management
- Finance, Economics, and Policy Research
- Innovation, Entrepreneurship, and Strategic Management
- Supply Chain and Operations Management
- Digital Business and Business Analytics

4. Social Sciences & Humanities
- Governance and Public Policy
- Education and Pedagogy
- Behavioral and Psychological Research
- Rural Development and Community Studies
- Cultural, Historical, and Development Studies

5. Cross-Cutting Multidisciplinary Themes

These themes promote interdisciplinary integration across all domains:
- AYUSH and Traditional Knowledge Systems integrated with Modern Science
- Digital Transformation across Disciplines
- Sustainability and Green Transitions
- Innovation, Incubation, and Start-up Ecosystems
- Entrepreneurship and Skill Development
- Industry–Academia Collaboration

**Table 2.19 Five-Year Research Rolling Plan – TKR Deemed to be University (TKRDU)**

| Year | Strategic Focus | Key Activities (Precise DPR Format) | Expected Outcomes |
|---|---|---|---|
| Year 1 (2026–27) | Foundation & Capacity Building | Establish Research Council & Ethics Committees; Upgrade core laboratories (Engineering, Pharmacy, Management); Conduct research training programs; Launch seed grant scheme | Functional research infrastructure; Initial research proposals submitted; Increased faculty and student participation |
| Year 2 (2027–28) | Strengthening Interdisciplinary Research | Initiate interdisciplinary pilot projects; Promote UG/PG research participation; Implement publication incentive policy; Conduct national seminars and workshops | Increase in collaborative publications; Strengthened interdisciplinary culture; Improved national academic visibility |
| Year 3 (2028–29) | National Expansion & Funding | Submit proposals to national agencies (DST, DBT, AICTE, UGC); Establish patent facilitation support; Initiate translational research projects; Expand industry collaborations | Growth in funded research projects; Filing of patents; Enhanced national recognition and applied research outputs |

| | | | |
|---|---|---|---|
| Year 4 (2029–30) | Global Integration | Establish international MoUs; Promote joint international publications; Strengthen doctoral research programs; Develop technology-based research outputs | Increased global collaborations; Higher citation impact; Technology commercialization readiness |
| Year 5 (2030–31) | Innovation & Sustainability | Establish Technology Transfer Office (TTO); Launch incubation and start-up programs; Strengthen industry partnerships; Implement research sustainability models | Start-ups established; Intellectual property revenue generation; Sustainable research and innovation ecosystem |

4. Quantitative Publication & Research Targets Annual Research Expectations

- Faculty: Minimum 2 Scopus/WoS indexed publications per year
- PG Students: 1 indexed publication from thesis
- PhD Scholars: Minimum 2 indexed publications before submission

UG Students: 10–15% participation in research / conferences

**Table 2.20 Five-Year Publication Plan (2026–2030)**

| Year | Key Targets | Actions |
|---|---|---|
| **Year 1** | 1 paper/faculty, 100% PG thesis publication | Research Cell, incentives, dashboards |
| **Year 2** | 2 papers/faculty, UG 8% | Seed funding, research showcase |
| **Year 3** | Avg. 2.5 papers/faculty, patents | Centres of Excellence |
| **Year 4** | 3 papers/faculty, funded projects | International grants |
| **Year 5** | 3+ papers/faculty, 15–20% YoY growth | Outcome report & next roadmap |

## 5. Faculty and Student Research Encouragement Policy

**1. Faculty Incentives**

- Indexed publications (Q1–Q4)
- Books and book chapters
- Conference travel grants
- Funded project incentives
- Annual Research Excellence Awards

2. PG Student Research

- Departmental Research Committees
- Mandatory thesis-based publication
- Research writing and ethics training

3. UG Research

- UG Research Clubs
- Annual Research Day

- Seed funding and competitions

4. PhD Scholars
   - Indexed publication requirement
   - Grant writing mentorship
   - International travel grants

5. Institutional Support
   - Office of Research & Innovation (ORI)
   - Research Incentive Committee
   - Research dashboards and annual reports
6. Incentive Structure (Faculty, Students & Scholars)

**Table 2.21 Proposed Incentive Structure for faculty & student Research Publications for faculty & Ph.D Scholars**

| Type of Publication | Indexed in | Impact Factor/Ranking | Suggested Incentive (₹) |
|---|---|---|---|
| International Journal (Q1, IF > 5) | Scopus / WoS / PubMed | High Impact | 30,000 |
| International Journal (Q2–Q3, IF 2–5) | Scopus / WoS / PubMed | Medium Impact | 20,000 |
| International Journal (Q4, IF < 2) | Scopus / WoS / PubMed | Lower Impact | 10,000 |
| National Indexed Journal | UGC CARE / PubMed / Scopus | – | 5,000 |
| Book Chapter (Reputed Publisher – Springer, Elsevier, Taylor & Francis, etc.) | – | – | 10,000 |
| Authored/Edited Academic Book (Reputed Publisher) | ISBN Registered | – | 25,000 |

**Table 2.22 Incentives for conferences & seminars attendance**

| Type | Coverage | Incentive/Support |
|---|---|---|
| National Conference | Registration + TA/DA | 10,000 max |
| International Conference (within Asia) | Registration + Travel Support | 50,000 max |
| International Conference (outside Asia) | Registration + Travel Support | 1,00,000 max |
| Paper Presentation Awards | Additional recognition | 5,000 |

*Duty leave will be granted for participation.*

**Table 2.23 Incentives for patents & innovation**

| Category | Incentive (₹) |
|---|---|
| Patent Filed | 10,000 |
| Patent Published | 15,000 |
| Patent Granted (National) | 50,000 |
| Patent Granted (International) | 1,00,000 |
| Start-up/Innovation Commercialized | Special award decided by Research Council |

**Table 2.24 Incentives for funded research projects**

| Funding Secured | Incentive (₹) |
|---|---|
| National Funding Agency<br>(DST, ICMR, DBT, UGC, AICTE, ICSSR etc.) | 2% of sanctioned grant (PI), 1% (Co-PI) |
| International Grant | 3% of sanctioned grant (PI), 1.5% (Co-PI) |

Research Monitoring, Review & Governance

- Research Advisory Council – annual review
- Department Research Committees – quarterly monitoring
- Annual Research Audit Report
- Rolling plan updates based on emerging priorities

International Collaboration Strategy

Existing Collaborations

(USA, UK, Australia, Germany – list retained)

Action Plan

- Joint PhDs, faculty exchange, post-doctoral research
- Visiting professors and Nobel-level interactions
- International grants and bilateral workshops

7. Research Budget Summary & Resource Mobilization

Annual Research Budget: ₹3.87 Crores

- Seed grants
- APC support
- Travel grants
- Patent/IP support

Funding Sources

- Institutional support
- External grants (ICMR, DST, DBT, WHO, etc.)
- Industry & CSR
- Alumni & philanthropy
- IP commercialization

## Table 2.25 College-wise Research Focus and Infrastructure Development – TKRDU

| Constituent College – TKRDU | Year 1 (Foundation) | Year 2 (Expansion) | Year 3 (Strengthening) | Year 4 (Advanced Integration) | Year 5 (Global & Commercialization) |
|---|---|---|---|---|---|
| TKR College of Engineering & Technology (TKRCET) | Establish institutional research policy; Conduct faculty research workshops; Initiate pilot studies in AI, IoT, and Data Science; Strengthen core laboratories | Launch interdisciplinary research groups in Robotics, EV Technology, and Renewable Energy; Initiate industry-linked pilot projects | Expand research into Digital Twin, Smart Infrastructure, and Industry 4.0; Publish research in indexed journals; Strengthen advanced laboratories | Establish national collaborative research projects; Develop AI-enabled engineering applications; Promote PhD-level research activities | Establish international collaborations; Facilitate technology transfer; Develop patents and commercialization-ready technologies |
| TKR Institute of Management and Sciences (TKRIMS) | Conduct research methodology training; Initiate management research projects; Establish research support systems | Launch research in Business Analytics, Healthcare Management, and Financial Systems | Expand research in Digital Business, FinTech, and Entrepreneurship models; Publish case studies and research papers | Establish policy-oriented and industry-linked management research; Promote consultancy-based projects | Disseminate research findings globally; Strengthen international academic collaborations; Develop industry-driven research models |
| TKR College of Pharmacy (TKRCP) | Establish pharmaceutical research laboratories; Conduct training in research methods; Initiate pilot studies in | Launch research in Clinical Pharmacy, Pharmaceutical Analysis, and Quality Assurance | Expand research in Pharmaceutical Biotechnology and Drug Delivery Systems; Publish research findings | Develop collaborative research with healthcare and industry partners; Initiate pharmacovigilance and regulatory research | Commercialize pharmaceutical technologies; File patents; Strengthen industry-based research partnerships |

| | | | | | |
|---|---|---|---|---|---|
| | drug formulation and analysis | | | | |
| TKR College of Engineering & Technology – Diploma (Polytechnic) | Strengthen skill-based laboratories; Conduct applied research training; Initiate industry-oriented pilot studies | Launch applied research projects in manufacturing, automation, and electrical systems | Expand research in smart manufacturing and industrial automation technologies | Strengthen industry-integrated training and applied innovation projects | Develop industry-linked technology solutions; Disseminate applied research outcomes |

### Expected Outcomes by 2030

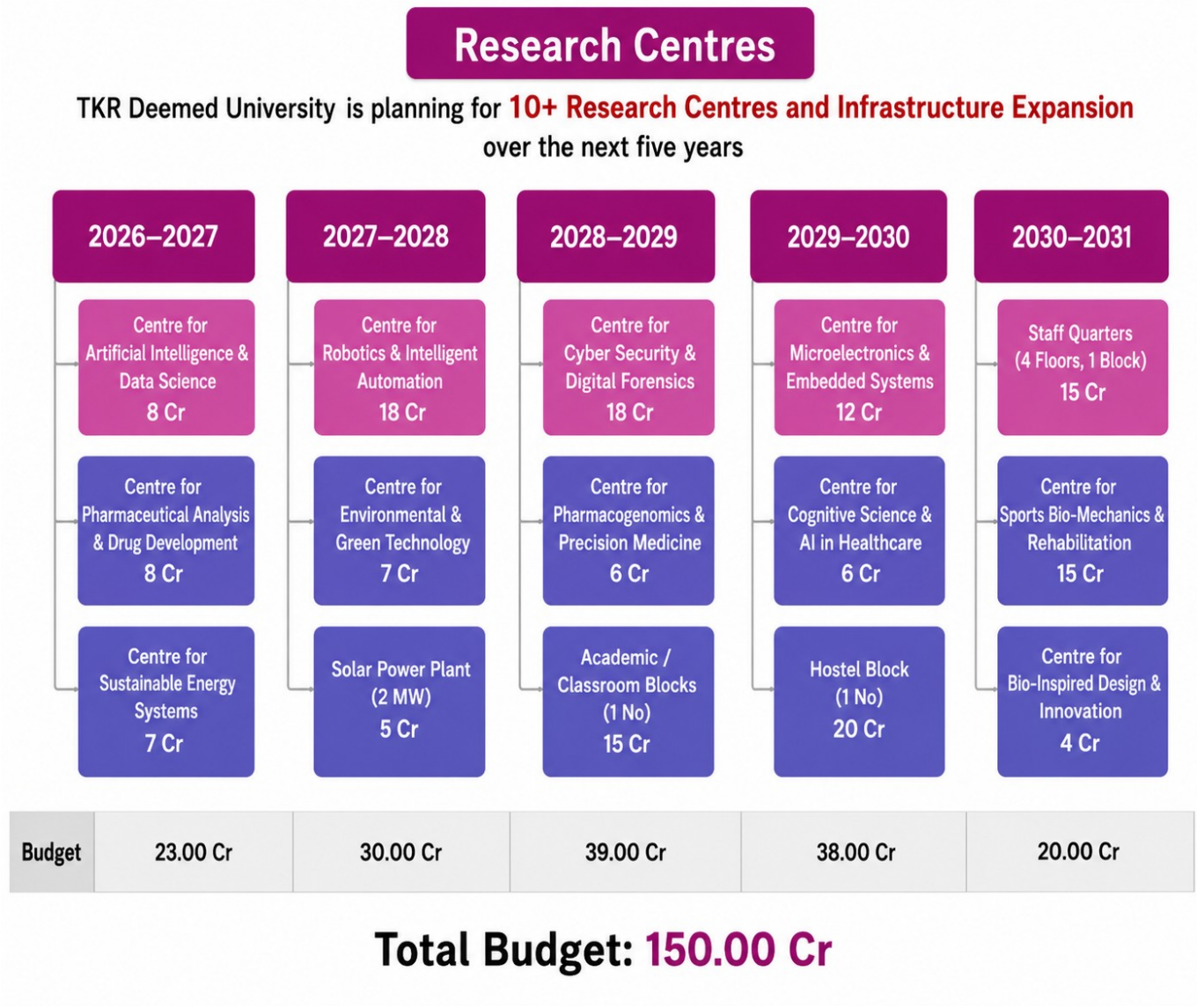
- Doubling of research publications
- Leadership in AYUSH + modern science integration
- Increased patents, start-ups, and funded projects
- Global collaborations and NIRF impact
- Recognition as a Centre of Excellence in Integrated Multidisciplinary Sciences

### 2.4.4.2 Progress Planner

### Table 2.26 Quantitative Research Targets (Five-Year Projection)

| Parameter | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|---|---|---|---|---|
| Scopus / WoS Publications | 30 | 60 | 100 | 140 | 180 |
| Average Publications per Faculty | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 |
| Externally Funded Projects | 3 | 6 | 12 | 18 | 25 |
| Research Grant Value (₹ Crores) | 0.5 | 1.5 | 3.0 | 5.0 | 7.5 |
| Patents Filed | 2 | 5 | 10 | 15 | 25 |
| Patents Granted | – | 1 | 3 | 6 | 10 |
| PhD Scholars Enrolled | 10 | 25 | 45 | 70 | 100 |
| PhD Degrees Awarded | – | – | 5 | 15 | 30 |
| Start-ups / Spin-offs | – | – | 2 | 5 | 10 |

**Research Centre**




### 2.4.4.3 International Collaboration

**Institutional Perspective**

**TKR Deemed to be University (TKRDU)** is committed to strengthening its global engagement through strategic international collaborations with reputed universities, research institutions, and industry partners across the world. The University aims to foster academic excellence, research innovation, and cross-cultural knowledge exchange through international partnerships in the areas of **Engineering and Technology, Pharmaceutical Sciences, Management Sciences, and Applied Sciences**.

TKRDU proposes to establish collaborations with universities and research organizations in countries such as the **United States of America, United Kingdom, Germany, Australia, Europe, and other advanced research destinations**. These collaborations will support **student mobility, faculty exchange, joint research, dual-degree programs, and collaborative academic initiatives**.

The University envisions building a global academic ecosystem that encourages faculty members and students to participate in international academic programs, research internships, and joint innovation projects. Faculty members will be encouraged to undertake collaborative research in advanced laboratories abroad, while international experts will be invited to contribute to teaching, mentoring, and research activities at TKRDU.

TKRDU will create a conducive academic environment to promote international collaboration, enhance research productivity, and achieve global academic recognition.

**A. Action Plan for International Collaboration**

The following action plan outlines the strategies to strengthen international engagement at **TKRDU**:

1. **Enhancement of International Faculty and Student Engagement**
   Increase the participation of international faculty members and students to promote a global academic culture within the University.
2. **Promotion of Faculty and Student Mobility Programs**
   Facilitate student exchange programs, internships, and academic visits to reputed international institutions.
3. **Recruitment of International Researchers and Postdoctoral Fellows**
   Invite PhD holders and postdoctoral researchers from internationally reputed universities to contribute to advanced research programs.
4. **Global Faculty Recruitment and Retention**
   Recruit high-quality faculty members from global institutions and implement retention strategies for research excellence.
5. **Visits by Eminent Scholars and Distinguished Experts**
   Invite renowned academicians, industry leaders, and distinguished scholars to deliver lectures, workshops, and seminars.
6. **Establishment of Collaborative Research Centres**
   Develop advanced research laboratories and centres in collaboration with foreign universities and research organizations.
7. **Faculty Sabbatical and Training Programs Abroad**
   Facilitate faculty sabbatical leave and specialized training programs in reputed international laboratories.
8. **Visiting Professor Programs**
   Invite international visiting professors specializing in thrust areas such as Artificial Intelligence, Data Science, Pharmaceutical Sciences, and Management.
9. **Joint Doctoral Programs**
   Establish collaborative PhD programs with internationally recognized universities.
10. **Expansion of Faculty Exchange Programs**
    Strengthen faculty exchange initiatives through Memoranda of Understanding (MoUs) with reputed global institutions.
11. **Mobilization of International Research Grants**
    Encourage participation in international research funding programs and collaborative grant proposals.
12. **Organization of International Workshops and Conferences**

Facilitate international workshops, seminars, and conferences in emerging multidisciplinary areas.

13. **Promotion of Joint Research Projects**
    Encourage collaborative research and joint publications with international institutions.
14. **Establishment of Specialized Research Centres**
    Establish interdisciplinary research centres in emerging areas such as Artificial Intelligence, Pharmaceutical Innovation, and Business Analytics.

### 2.4.5 Infrastructure Development Plan

Institutional Infrastructure Vision

**TKR Deemed to be University (TKRDU)** envisions establishing **state-of-the-art academic, research, residential, and recreational infrastructure** to meet national and international standards of higher education.

The infrastructure development plan is designed to ensure:

- **Sustainability** through energy-efficient and environmentally responsible design
- **Accessibility** through inclusive and barrier-free infrastructure
- **Scalability** to support increasing student intake and program expansion
- **Technology Integration** to enable smart campus operations
- **Academic Excellence** through modern laboratories and learning facilities

The infrastructure framework supports the planned growth in **student enrolment, faculty recruitment, research activities, and academic programs** over a five-year period.

The University will prioritize the development of:

- Smart classrooms and digital learning environments
- Advanced laboratories for Engineering and Pharmaceutical Sciences
- Research and innovation centres
- Central library with digital learning resources
- Innovation and incubation facilities
- Student residential hostels and faculty housing
- Sports, wellness, and recreational facilities
- Sustainable campus utilities including renewable energy systems

The infrastructure plan will be implemented in a **phased manner over five years**, aligned with academic expansion and regulatory requirements.

Table 2.27 Existing Infrastructure of 4 Constituent Colleges are given below

| Built-up Area of the Buildings: | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S.No | Name of the Building | Plinth area of each floor in sq-ft G floor | 1st floor | 2nd floor | 3rd floor | 4th Floor | 5th floor | Total in sq-ft | Year of Construction | Permissions obtain Authority | Date |
| 1 | Main Block | 52207.5 | 52207.5 | 52207.5 | 52207.5 | -- | -- | 208830 | 2001 | HMDA | 02/03/2021 |
| 2 | Civil Block | 3552 | 3552 | 3552 | 3552 | 3552 | 3552 | 21312 | 2010 | HMDA | 02/03/2021 |
| 3 | PG Block | 11167.98 | 11167.98 | 11167.98 | 11167.98 | 11167.98 | -- | 55839.9 | 2002 | HMDA | 02/03/2021 |
| 4 | T Block | 12710.12 | 12710.12 | 12710.12 | 12710.12 | 12710.12 | 12710.12 | 76260.72 | 2019 | HMDA | 02/03/2021 |
| 5 | Girls Hostel 1 | 7294.13 | 7294.13 | 7294.13 | 7294.13 | -- | -- | 29176.52 | 2005 | HMDA | 02/03/2021 |
| 6 | Boys Hostel | 14000 | 14000 | 14000 | 14000 | 14000 | 14000 | 84000 | 2013 | HMDA | 04/05/2013 |
| 7 | Canteen | 6500 | 5500 | | | | | 12000 | 2019 | HMDA | 02/03/2021 |
| 8 | Club Area (SAC) | 4500 | | | | | | 4500 | 2016 | HMDA | 02/03/2021 |
| 9 | Pharmacy Block | 10013.08 | 10013.08 | 10013.08 | 10013.08 | 10013.08 | -- | 50065.4 | 2006 | HMDA | 02/03/2021 |
| 10 | Diploma Block | 1200 | 1200 | 1200 | | | | 3600 | 2020 | HMDA | 02/03/2021 |
| 11 | Girls Hostel 2 | 8219.05 | 8219.05 | 8219.05 | 8219.05 | -- | -- | 32876.2 | 2005 | HMDA | 02/03/2021 |
| 12 | workshops | 3379 | | | | | | 3379 | 2015 | HMDA | 02/03/2021 |
| 13 | TKRC Labs | 980 | 1130 | 1130 | 1130 | 1130 | | 5500 | 2026 | ---- | --- |
| 14 | Auditorium Under Construction | 16449.3 | 16449.3 | 15559.4 | 15372 | 8375 | -- | 72205 | 2026 | --- | --- |
| | Grand Total | | | | | | | 659544.74 | | | |

## Table 2.28 Institution/ College/ School wise Build-Up area Year wise

| S No | Subject | Students Enrolled | | | | | Built-up Area (Sqm) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2026 | 2027 | 2028 | 2029 | 2030 | 2026 | 2027 | 2028 | 2029 | 2030 |
| School of Emerging Engineering & Technology (22 Courses) | | | | | | | | | | | |
| 1 | B.Tech Electric Vehicle Technology | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 2 | B.Tech Robotics and Intelligent Automation | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 3 | B.Tech Cyber Threat Intelligence | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 4 | B.Tech Renewable Energy Systems | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 5 | B.Tech Artificial Intelligence & Intelligent Systems | 60 | 150 | 300 | 480 | 660 | 1800 | 4500 | 9000 | 14400 | 19800 |
| 6 | B.Tech Drone Technology | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 7 | B.Tech Smart Manufacturing | | 60 | 120 | 210 | 330 | 0 | 1800 | 3600 | 6300 | 9900 |
| 8 | B.Tech Internet of Things | | 60 | 120 | 210 | 360 | 0 | 1800 | 3600 | 6300 | 10800 |
| 9 | B.Tech Quantum Computing | | 60 | 120 | 210 | 340 | 0 | 1800 | 3600 | 6300 | 10200 |
| 10 | B.Tech Autonomous Systems | | 60 | 120 | 210 | 300 | 0 | 1800 | 3600 | 6300 | 9000 |
| 11 | M.Tech Blockchain Technology | | 30 | 80 | 120 | 160 | 0 | 900 | 2400 | 3600 | 4800 |
| 12 | B.Tech Augmented & Virtual Reality | | | 60 | 150 | 240 | 0 | 0 | 1800 | 4500 | 7200 |
| 13 | B.Tech Biomedical Instrumentation | | | 60 | 150 | 240 | 0 | 0 | 1800 | 4500 | 7200 |
| 14 | B.Tech Nanotechnology | | | 60 | 170 | 280 | 0 | 0 | 1800 | 5100 | 8400 |
| 15 | B.Tech Sustainable Engineering | | | 60 | 160 | 260 | 0 | 0 | 1800 | 4800 | 7800 |
| 16 | M.Tech Mechatronics Engineering | | | 30 | 90 | 150 | 0 | 0 | 900 | 2700 | 4500 |
| 17 | B.Tech Climate Technology | | | | 80 | 200 | 0 | 0 | 0 | 2400 | 6000 |
| 18 | B.Tech Hydrogen Energy Systems | | | | 80 | 200 | 0 | 0 | 0 | 2400 | 6000 |
| 19 | B.Tech Space Technology | | | | 80 | 200 | 0 | 0 | 0 | 2400 | 6000 |
| 20 | B.Tech Smart Infrastructure Engineering | | | | 80 | 220 | 0 | 0 | 0 | 2400 | 6600 |
| 21 | B.Tech Digital Twin Technology | | | | | 120 | 0 | 0 | 0 | 0 | 3600 |
| 22 | Ph.D. in Artificial Intelligence & Sustainable Engineering Systems | | 30 | 60 | 90 | 120 | 0 | 900 | 1800 | 2700 | 3600 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **School of Social Sciences (7 Courses)** | | | | | | | | | | | |
| 23 | B.A Sustainable Infrastructure Planning | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 24 | B.A Innovation and Design Thinking | 60 | 150 | 270 | 420 | 570 | 1800 | 4500 | 8100 | 12600 | 17100 |
| 25 | B.A Public Policy & Governance | | | | | 80 | 0 | 0 | 0 | 0 | 2400 |
| 26 | B.A Urban Development Studies | | 60 | 160 | 260 | 400 | 0 | 1800 | 4800 | 7800 | 12000 |
| 27 | B.A Disaster Management | | | 40 | 120 | 200 | 0 | 0 | 1200 | 3600 | 6000 |
| 28 | M.A Behavioral Sciences | | | | 80 | 180 | 0 | 0 | 0 | 2400 | 5400 |
| 29 | Ph.D. in Public Policy, Governance & Behavioral Sciences | | | | | 30 | 0 | 0 | 0 | 0 | 900 |
| **School of Pharmacy (7 Courses)** | | | | | | | | | | | |
| 30 | B.Pharm Intelligent Healthcare Systems | 60 | 150 | 300 | 480 | 660 | 1800 | 4500 | 9000 | 14400 | 19800 |
| 31 | B.Pharm Clinical Data Science | 60 | 150 | 300 | 480 | 660 | 1800 | 4500 | 9000 | 14400 | 19800 |
| 32 | B.Pharm Pharmacovigilance | | 60 | 160 | 260 | 360 | 0 | 1800 | 4800 | 7800 | 10800 |
| 33 | B.Pharm Regulatory Affairs | | | 60 | 120 | 200 | 0 | 0 | 1800 | 3600 | 6000 |
| 34 | B.Pharm Industrial Pharmacy | | | | 80 | 180 | 0 | 0 | 0 | 2400 | 5400 |
| 35 | M.Pharm Pharmaceutical Biotechnology | | | | | 120 | 0 | 0 | 0 | 0 | 3600 |
| 36 | Ph.D. in Pharmaceutical Sciences & Clinical Research | | | | | 30 | 0 | 0 | 0 | 0 | 900 |
| **School of Management Sciences (4 Courses)** | | | | | | | | | | | |
| 37 | BBA Healthcare Management | | 60 | 180 | 320 | 480 | 0 | 1800 | 5400 | 9600 | 14400 |
| 38 | MBA Health Informatics | | | 80 | 200 | 280 | 0 | 0 | 2400 | 6000 | 8400 |
| 39 | MBA Pharmaceutical Management | | | | 60 | 140 | 0 | 0 | 0 | 1800 | 4200 |
| 40 | Ph.D. in Healthcare Management & Digital Business Analytics | | | | | 30 | 0 | 0 | 0 | 0 | 900 |
| | Total | 600 | 1980 | 4360 | 7970 | 12400 | 18000 | 59400 | 130800 | 239100 | 372000 |

**Table 2.29 Other Area Details:**

| Play Grounds | Area in sft |
|---|---|
| Cricket | 98883.3 |
| Basket Ball | 32670.7 |
| Kabaddi | 21780.4 |
| Parking | 87121.9 |

### Insights on Infrastructure Development Plan

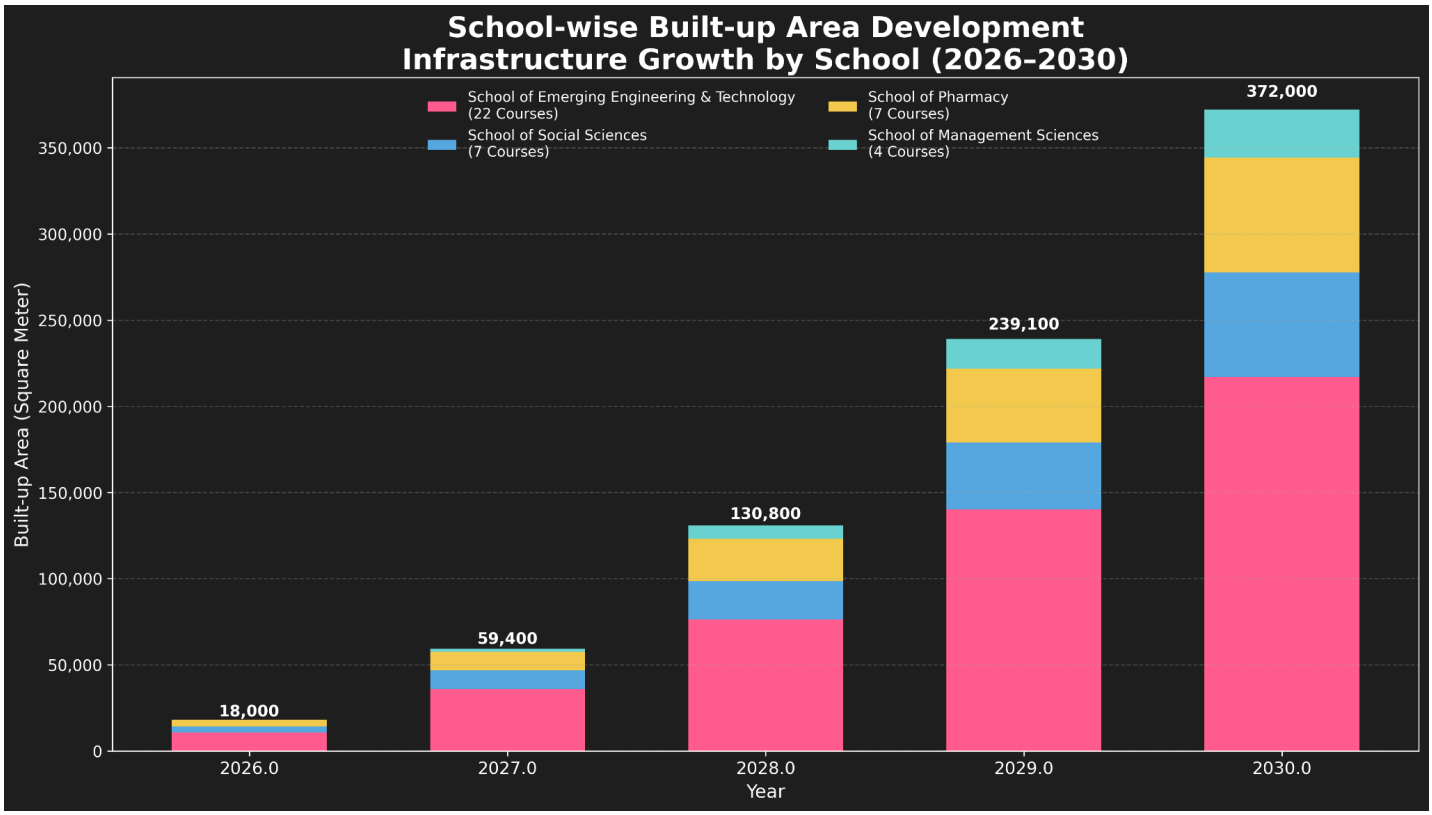
The Five-Year Infrastructure Development Plan (2026–2030) is designed to establish a modern, scalable, and sustainable university campus aligned with national higher education standards. The plan focuses on phased expansion of academic, research, administrative, and student support facilities to match the projected growth in student intake and academic programs. The total built-up area is projected to increase from 18,000 sq.m in 2026 to 372,000 sq.m by 2030, resulting in a cumulative built-up area of 819,300 sq.m over five years.

The chart below presents the projected school-wise built-up area requirements from 2026 to 2030 based on planned program expansion and enrollment targets. The School of Emerging Engineering & Technology accounts for the highest infrastructure demand due to its large intake and laboratory-intensive programs. The Schools of Pharmacy and Social Sciences also show significant infrastructure growth, while the School of Management Sciences reflects steady expansion. The projections indicate that the university's infrastructure development is strategically focused on high-growth and technology-oriented disciplines to support long-term academic and research objectives.

**Table 2.30 School wise Build-Up area Year wise in Sft**

| | Academic Year | | | | |
|---|---|---|---|---|---|
| | 2026 | 2027 | 2028 | 2029 | 2030 |
| School of Emerging Engineering & Technology (22 Courses) | 10800 | 36000 | 76200 | 140100 | 216900 |
| School of Social Sciences (7 Courses) | 3600 | 10800 | 22200 | 39000 | 60900 |
| School of Pharmacy (7 Courses) | 3600 | 10800 | 24600 | 42600 | 66300 |
| School of Management Sciences (4 Courses) | 0 | 1800 | 7800 | 17400 | 27900 |
| Total Built-up Area | 18000 | 59400 | 130800 | 239100 | 372000 |

**Graphical Representation of School wise Build-Up area Year wise**




### 2.4.5.1 Academic Infrastructure

**1. Classrooms**

Smart classrooms equipped with digital boards, interactive displays, and AI-enabled attendance systems. Each classroom is designed with ergonomic seating and acoustic treatment.

**Laboratories**

Modern, course-specific laboratories will be developed in phases:

Engineering and Sciences: Physics, Chemistry, Computer Science, and Engineering Workshops etc.

- Business & Arts: Analytics, Communication, and Entrepreneurship Labs etc.

2. **Specialized Laboratories**

**Simulation Lab**

Equipped with advanced mannequins and real-time patient simulation systems for Medical and Allied Health courses. Enables experiential learning, procedural training, and emergency response drills.

**Artificial Intelligence Lab**

Focused on AI-driven healthcare, robotics, data analytics, and intelligent systems. Integrated with research projects in collaboration with industry and research institutions.

**Augmented Reality (AR) & Virtual Reality (VR) Lab**

For immersive learning and visual simulation across disciplines - including medical anatomy, architectural design, and engineering visualization. Equipped with high-performance computers, VR headsets, and 3D content creation tools.

**Central Museum**
A multidisciplinary museum for technological innovations, and cultural artifacts. Designed as an educational and heritage resource for students and visitors.

**3. Library Facilities**
Central digital library with hybrid access (print + e-resources). Subscription to leading databases such as Scopus, PubMed, IEEE, Springer, Jgate and N-LIST. Digital learning spaces, RFID-enabled book circulation, and AI-driven catalog search. Seating capacity: 200 (expandable). Learning commons with group study rooms and audio-visual resources. Department libraries are established with necessary infrastructure and books and journals.

### 2.4.5.2 Administrative Infrastructure

Administrative Block with offices for Vice Chancellor, Registrar, Deans, Finance, HR, Examination Cell, and Student Services. IQAC Office for quality monitoring. Digitized administrative processes integrated through ERP and AI-based MIS systems.
1. Residential and Support Facilities Hostel
Facilities
Separate hostels for boys and girls with hygienic dining, Wi-Fi, laundry, and 24/7 security. Capacity to accommodate up to 75% of total student strength in Phase I, expandable to 100% by Year 5. Common recreation and reading rooms.
**Faculty Accommodation**
On-campus apartments and guest houses for faculty and visiting professors. Designed to promote academic community and interdisciplinary collaboration.

**2. Recreational and Cultural Infrastructure**
Sports Facilities
Indoor sports complex (badminton, table tennis, gymnasium). Outdoor sports grounds for football, cricket, athletics, basketball, and volleyball. Annual inter-college sports meet to promote health and teamwork.
Cultural Facilities
Dedicated cultural center for arts, drama, music, and literary clubs. Amphitheatre for open-air cultural events.
Auditorium Facilities
Centrally air-conditioned auditorium with 1,000 seating capacity, acoustic panels, and advanced AV systems. Used for conferences, convocations, and cultural events.

**3. Academic and Faculty Support Facilities**
**Faculty Rooms (Cabins)**
Individual faculty cabins with modern furnishings, internet connectivity, and discussion areas. Faculty research lounge for interdisciplinary collaboration.
**Common Rooms**
Separate common rooms for boys and girls equipped with seating, reading space, and basic amenities.
Simulation and Practice Areas
Replicated hospital, agricultural, and business simulation environments to bridge theory and practice.

4. Sustainability and Smart Campus Features
Green Campus: Rainwater harvesting, solar panels, and waste recycling units.
Smart Infrastructure: Centralized building management systems, Wi-Fi-enabled campus, and AI-driven security monitoring.

**Accessibility:** Barrier-free design compliant with the Rights of Persons with Disabilities Act.

**Table 2.31 Five-Year Infrastructure Development Implementation Plan (2026-2030)**

| Institution | Year 1 (2026) | Year 2 (2027) | Year 3 (2028) | Year 4 (2029) | Year 5 (2030) |
|---|---|---|---|---|---|
| TKR College of Engineering & Technology | Core AI/Robotics labs; Computer labs; Data center; Classrooms | Aerospace labs; Automation bays; Simulation labs | Cloud/Quantum tech labs; Innovation incubator | Green innovation center; Interdisciplinary labs | Industry collaboration zones; Global benchmarking |
| TKR Institute of Management and Sciences | Conference & simulation rooms; Digital library; Hostel setup | Team teaching rooms; Case study spaces | Admin & placement center | Business incubator; Global classrooms | Smart conference suite; Quality upgrades |
| TKR College of Pharmacy | Core pharma labs; Drug formulation lab; Computer lab | Advanced labs; Quality control setup | Automation equipment; Research labs | Regulatory & clinical research unit | Industry-ready lab certification; Upgrades |
| TKR College of Engineering & Technology – Diploma (Polytechnic) | Workshop modernization; Basic labs; Classrooms | Skill development labs; Industry-oriented training | Advanced technical labs; Simulation tools | Industry collaboration labs | Infrastructure upgrades; Placement support centers |

Integrated Campus Infrastructure Master Plan
Core Infrastructure Timeline
Phase 1 (2026–27): Foundation
- Central Academic Block (2 lakh sq. ft)
- Smart Classrooms (200 Nos.)
- High-Tech Library with 24/7 automated access
- Green Campus Initiatives (Solar Power, Water Recycling)

Phase 2 (2027–28): Specialization
- Advanced Research Centres (50,000 sq. ft)
- Sports Complex (Olympic Standard)
- Student Innovation & Incubation Hub

Phase 3 (2028–29): Excellence
- Sports Medicine & Fitness Facility
- Advanced Simulation & Experiential Learning Environments
- Domain-Specific Specialized Infrastructure

Specialized Facilities by Domain
Technology & Simulation Infrastructure
- **2026:** Virtual Simulation Labs

- **2028:** AI-based Simulation Systems
- **2031:** Advanced Immersive Simulation Environments

Research Infrastructure

- **2026:** Core Research Laboratories
- **2028:** Clean Rooms & Advanced Research Facilities
- **2031:** Expanded High-End Research Infrastructure

Cultural & Knowledge Infrastructure

- **2026:** Digital Archives & Knowledge Repositories
- **2028:** Digital Restoration & Innovation Labs
- **2031:** Integrated Heritage & Knowledge Centres

Sustainability Features

| Year | Initiative |
|---|---|
| 2026 | Net-zero water building |
| 2027 | Vertical medicinal gardens |
| 2028 | Piezoelectric flooring |
| 2030 | Biophilic design standards |
| 2031 | Carbon-negative certification |

**Key Performance Indicators**

- 2026: 25% green cover
- 2028: 100% energy neutral
- 2031: Zero waste campus
- 100% accessibility compliance
- 1:1 student: simulation bed ratio

### 2.4.5.3 Other facilities available on the campus:

- Each floor has a drinking water facility.
- Ramps, elevators and toilets are available in all buildings to facilitate barrier-free mobility for persons with disabilities.
- The Institution has separate residences for girls and boys with amenities conducive to pleasant living. Both hostels have separate dining messes, where breakfast, lunch and dinner are served to students in a hygienic environment. Purified drinking water from the RO plant is supplied around the clock. Solar water heater for hot water is also available
- It has a full-fledged dispensary functioning from 8.30 am to 4.30 pm. The dispensary has a doctor and a staff nurse. It provides medical facilities for any minor problems. For any emergency, people are immediately sent to Nearest Hospitals for further treatment.
- The Institution holds a robust transport system facilitating easy mobility of students and staff from the important places of the city to campus.
- College offers a supporting and enriching environment to faculty in all aspects. The college has a well-furnished staff quarter with all basic amenities including an elevator, RO water and centralized LPG Supply. Temple is also available on campus.
- Our Institution also provides a 24-hour Central Bank of India ATM facility for students and staff. Hostel students can use the ATM at any time within the campus premises.
- 24x7 security facilities with male and female security personnel at all vital points.
- A separate vehicle parking facility for students and staff is available inside the campus.

- Fire safety equipment is fixed in vital places.
- Rainwater harvesting, Sewage treatment plants, and RO plants are also available on the campus.

### 2.4.6 Campus information and communication technology plan

**Introduction**

The institution envisions creating a digitally empowered and technology-driven campus that supports smart teaching, efficient administration, and holistic learning. The Campus Information and Digital Technology Plan focuses on establishing advanced IT infrastructure, digital learning systems, and a sustainable ecosystem aligned with the National Education Policy (NEP 2020) and Digital India initiatives.

#### 2.4.6.1 Action Plan for Digital Infrastructure Procurement, Installation, and Rollout (5 Years)

YEAR 1 (2026–27): Foundation & Critical Infrastructure

**Priority:** Establish Core Operations & Basic Connectivity

Quarter 1–2: Immediate Deployment

Network & Connectivity Infrastructure

- 10 Gbps internet backbone with optical fiber network
- Campus-wide Wi-Fi 6E coverage
- Firewall protection with redundancy
- 24/7 IT support desk setup

**Justification:** Reliable network infrastructure forms the foundation for all digital systems, enabling seamless academic, administrative, and research operations.

Administrative Core Systems

- Centralized ERP system (Academics, HR, Finance, Admissions, Examinations)
- Institutional email and communication systems
- Digital attendance systems (RFID/Biometric)

**Justification:** Essential for institutional operations including student management, academic processes, and financial administration.

Basic Security & Access Control

- Biometric access control systems
- CCTV surveillance with centralized monitoring
- Digital building management systems
- Automated fire detection systems

**Justification:** Ensures safety, asset protection, and compliance with regulatory requirements.

Quarter 3–4: Teaching Infrastructure

Essential Learning Systems

- Learning Management System (LMS) – Cloud-based
- 100 Smart classrooms with interactive digital boards (Phase 1)
- Digital library with RFID-enabled circulation
- Virtual classroom platforms (Teams, Zoom, Google Workspace)
- Lecture capture systems

**Justification:** Supports modern teaching methodologies, digital content delivery, and student engagement from the first academic year.

Basic Computer Labs

- 5–6 general computer labs (60 seats each)
- High-performance computing systems for engineering programs
- Licensed software (programming, design, office tools)

**Justification:** Enables practical learning, coding, simulations, and project-based coursework.

Digital Library Foundation

- Subscriptions to databases: Scopus, IEEE, Springer, N-LIST
- AI-enabled catalog search systems
- Digital learning spaces with workstations
- Integration with National Digital Library

**Justification:** Provides access to research resources, supporting academic excellence and accreditation requirements.

Digital Systems for Applied Programs

- Research data management systems
- Laboratory information management systems (LIMS)
- Industry-linked project and internship tracking platforms
- Basic tele-collaboration and remote expert interaction tools

**Justification:** Supports practical, industry-oriented learning and research activities across engineering, pharmacy, and management programs.

YEAR 2 (2027–28): Expansion & Specialization

**Priority:** Scale Operations & Deploy Specialized Systems

Quarter 1–2: Enhanced Learning Infrastructure

Advanced Learning Spaces

- Additional 100 Smart Classrooms (Phase 2 – Total 200)
- AI-based adaptive learning platforms
- Advanced lecture capture with auto-editing
- Enhanced student and faculty portals

**Justification:** Increased student strength requires expanded teaching infrastructure and adoption of AI-enabled personalized learning.

Specialized Computer Labs

- AI / Machine Learning Lab
- Data Science Lab with GPU clusters
- Robotics Lab (Basic Setup)

**Justification:** Supports specialized computing requirements for advanced engineering programs.

Simulation Lab – Phase 1

- Advanced simulation systems
- High-fidelity training equipment
- Basic VR/AR systems (10 stations)
- Simulation control and recording systems

**Justification:** Enables safe, standardized, and practical training environments.

Quarter 3–4: Research & Smart Campus

Research Computing Infrastructure

- Data center expansion (up to 1 PB storage)
- Large-scale data platforms
- Cloud-based research collaboration tools
- Advanced analytics and statistical software

**Justification:** Supports growing research activities and data-intensive projects.

IoT & Smart Campus – Phase 1

- IoT-enabled devices and monitoring systems
- Smart water and energy management systems

- Sensor-based infrastructure monitoring
- GPS tracking for transport systems

**Justification:** Enhances operational efficiency and resource optimization.

Digital Communication Enhancement

- AI-enabled chatbot for student services
- Mobile applications for campus services
- Real-time notification systems
- Digital dashboards for administration

**Justification:** Improves service delivery and supports data-driven decision-making.

YEAR 3 (2028–29): Advanced Technology & Integration

**Priority:** Deploy Advanced Technologies & Integrated Systems

Quarter 1–2: Advanced Learning Technology

VR/AR Lab – Full Deployment

- 30 VR headsets
- AR visualization systems
- 3D content creation studio
- Immersive simulation environments

**Justification:** Supports experiential learning and advanced visualization.

Advanced AI Applications

- AI-based decision support systems
- Natural language processing applications
- Computer vision systems
- Predictive analytics platforms

**Justification:** Enhances research, analytics, and intelligent system development.

Robotics Lab Expansion

- Advanced robotics systems
- Automation and Industry 4.0 setups
- Applied robotics training systems

**Justification:** Supports hands-on learning in automation and robotics domains.

Quarter 3–4: Integration & Advanced Research

Digital Twin Campus

- Digital twin platform
- Real-time monitoring systems
- Predictive maintenance tools
- Energy optimization models

**Justification:** Enables efficient infrastructure management and sustainability.

Advanced Digital Systems

- Integrated data platforms
- Advanced analytics systems
- Decision support tools

**Justification:** Improves operational efficiency and research capabilities.

Quantum Computing Access

- Cloud-based quantum computing access
- Quantum development environments
- Research collaborations

**Justification:** Supports advanced research in emerging domains.

Blockchain Implementation

- Digital academic credentials
- Secure data sharing systems
- Digital identity management

**Justification:** Ensures secure, transparent, and verifiable records.

YEAR 4 (2029–30): Optimization & Advanced Research
**Priority:** Optimize Systems & Strengthen Research Infrastructure
Quarter 1–2: Advanced Research Infrastructure
High-Performance Computing

- GPU clusters (100+ GPUs)
- Deep learning infrastructure
- Large-scale simulation systems

**Justification:** Supports high-end research and computational requirements.
5G Private Network

- Campus-wide private 5G network
- IoT ecosystem integration
- Low-latency communication systems

**Justification:** Enables advanced connectivity and real-time applications.
Advanced Simulation – Phase 2

- Haptic systems
- Full-scale immersive simulations
- Multi-user simulation platforms
- AI-driven adaptive environments

**Justification:** Enhances advanced training and research applications.
Quarter 3–4: Sustainability & Efficiency
Smart Building Automation

- Full IoT deployment
- AI-based energy optimization
- Automated climate systems
- Predictive maintenance

**Justification:** Improves efficiency and reduces operational costs.
Advanced Data Analytics

- AIOps systems
- Learning analytics platforms
- Research analytics tools

**Justification:** Enables data-driven academic and administrative decisions.
Digital Humanities & Innovation

- Digital archiving systems
- Multimedia content labs
- Cultural and knowledge platforms

**Justification:** Supports interdisciplinary and digital innovation.
YEAR 5 (2030–31): Innovation & Future-Readiness
**Priority:** Deploy Emerging Technologies & Future Systems
Quarter 1–2: Next-Generation Technology
Holographic Technology

- Holographic teaching systems
- 3D visualization platforms

**Justification:** Enhances immersive learning and global collaboration.

AR-Based Smart Campus

- AR navigation systems
- Smart campus assistants
- Interactive information systems

**Justification:** Improves user experience and campus accessibility.

Advanced Research Labs

- Emerging technology research platforms
- Advanced innovation labs

**Justification:** Strengthens research and innovation ecosystem.

Quarter 3–4: Consolidation & Future Planning

Sustainable Data Center

- Renewable energy-powered data center
- AI-based power management
- Energy-efficient cooling systems

**Justification:** Supports sustainability goals and efficient operations.

Advanced Innovation Hub

- Incubation and startup support systems
- Industry collaboration platforms
- Advanced prototyping labs

**Justification:** Promotes entrepreneurship and technology transfer.

Sustainable Technologies (Pilot)

- Energy-harvesting systems
- Smart infrastructure pilots

**Justification:** Demonstrates innovation in sustainability.

System Integration & Future Planning

- System interoperability audit
- AI-driven campus management
- Next 5-year roadmap

**Justification:** Ensures long-term scalability and integration.

Continuous (All 5 Years)

Cybersecurity & Compliance

- Security audits and testing
- Data protection compliance
- Incident response systems
- Security awareness programs

Faculty & Staff Training

- Digital literacy programs
- Technology training workshops
- Pedagogical innovation training

Website & Digital Presence

- Continuous website updates
- Digital communication platforms
- Online branding and outreach

## Procurement Strategy Summary

**Year 1 Focus:** Operational Readiness
Rationale: Enable day-one operations legally and practically
**Year 2 Focus:** Scaling & Specialization
Rationale: Support enrollment growth and specialized programs

**Year 3 Focus:** Advanced Technology & Integration Rationale:
Competitive differentiation and research capability
**Year 4 Focus:** Optimization & Research Infrastructure Rationale:
Operational efficiency and advanced research support
**Year 5 Focus:** Innovation & Future-Readiness
Rationale: Cutting-edge technology and sustainability goals

**Key Principles guiding this Plan**

1. Operational Necessity First: Systems critical for legal operations and student safety deployed immediately
2. Enrollment-Driven Scaling: Infrastructure scales with student numbers to avoid over-investment
3. Pedagogical Readiness: Advanced teaching technology deployed after faculty training ensures utilization
4. Data-Driven Investment: Analytics and AI systems deployed after sufficient data accumulation
5. Technology Maturity: Cutting-edge tech (quantum, BCI, holographic) delayed until commercially viable
6. ROI Validation: Pilot programs in Years 1-2 validated before full-scale deployment Years 3-5
7. Regulatory Compliance: NMC, AICTE, UGC, INC, NCISM and accreditation requirements drive timing of certain systems
8. Sustainability Integration: Green technology deployed progressively as campus energy consumption grows

## Table 2.32 School / College wise Five-Year Campus Information and Technology Plan (2026-2030)

| Institution | Year 1 (2026) | Year 2 (2027) | Year 3 (2028) | Year 4 (2029) | Year 5 (2030) |
|---|---|---|---|---|---|
| TKR College of Engineering & Technology | Core IT labs (AI, Robotics, Cloud); High-speed networking; LMS | Data science platforms; Advanced computing environments; Project management systems | IoT integration; VR/AR for engineering; Simulation tools | Interdisciplinary research systems; e-publishing tools | International collaboration systems; Smart campus technology |
| TKR Institute of Management and Sciences | Student information system; Finance & operations analytics; Secure Wi-Fi | Online case study platforms; Digital internship tracking | e-Placement portal; Real-time decision systems; Business analytics | Leadership & alumni network systems; Global classrooms | Enterprise resource planning upgrades; Compliance systems |
| TKR College of Pharmacy | Digital lab management; Sample tracking systems; Lab IT infrastructure | Automation software; Lab data integration; Online reporting systems | Remote diagnostics interface; AI-supported analysis tools | Cloud data systems; Research collaboration platforms | National/ international research integration; Blockchain for data integrity |
| TKR College of Engineering & Technology – Diploma (Polytechnic) | Basic IT labs; Digital classrooms; Wi-Fi-enabled campus | Skill-based digital training systems; Online learning modules | Simulation tools; Industry-oriented digital platforms | Smart lab systems; Internship tracking platforms | Digital upgrades; Placement and career support systems |


This phased approach ensures **optimal resource utilization, risk minimization, and positions TKR Deemed-to-be-University (TKRDU) as a technology-driven institution in higher education**.

**Outcome Statement**

"The digital integration at TKR Deemed-to-be-University (TKRDU) will enable the transformation of education into a technology-driven, globally competitive ecosystem by strengthening engineering innovation, pharmaceutical research, and management excellence, while enhancing teaching, research, industry collaboration, and employability outcomes."

### 2.4.7 Finance plan

The Five Years' Finance Plan presents a comprehensive, realistic, and sustainable financial framework for the proposed Institution Deemed to be a University. It outlines college-wise projected revenues, diversified income streams, and phased expenditure aligned with academic expansion, infrastructure development, research growth, and digital transformation. The plan balances capital and operational investments while ensuring financial discipline, cost optimization, and long-term viability. With diversified funding sources, phased CapEx deployment, and a clear break-even and ROI timeline, the financial strategy supports institutional stability, regulatory compliance, and progressive growth in line with UGC and NEP objectives.

**Table 2.33 College/ School wise year on year revenue for 2026-30**

| S No | Subject | Fee per Student | Revenue (all numbers in Rupees Lakhs) | | | | |
|---|---|---|---|---|---|---|---|
| | | | 2026 | 2027 | 2028 | 2029 | 2030 |
| **School of Emerging Engineering & Technology (22 Courses)** | | | | | | | |
| **1** | **B.Tech Electric Vehicle Technology** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **2** | **B.Tech Robotics and Intelligent Automation** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **3** | **B.Tech Cyber Threat Intelligence** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **4** | **B.Tech Renewable Energy Systems** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **5** | **B.Tech Artificial Intelligence & Intelligent Systems** | 1.5 | 90 | 225 | 450 | 720 | 990 |
| **6** | **B.Tech Drone Technology** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **7** | **B.Tech Smart Manufacturing** | 1.5 | 0 | 90 | 180 | 315 | 495 |
| **8** | **B.Tech Internet of Things** | 1.5 | 0 | 90 | 180 | 315 | 540 |
| **9** | **M.Tech Blockchain Technology** | 1 | 0 | 60 | 120 | 210 | 340 |
| **10** | **B.Tech Quantum Computing** | 1.5 | 0 | 90 | 180 | 315 | 450 |
| **11** | **B.Tech Autonomous Systems** | 1.5 | 0 | 45 | 120 | 180 | 240 |
| **12** | **B.Tech Augmented & Virtual Reality** | 1.5 | 0 | 0 | 90 | 225 | 360 |
| **13** | **B.Tech Biomedical Instrumentation** | 1.5 | 0 | 0 | 90 | 225 | 360 |
| **14** | **B.Tech Nanotechnology** | 1.5 | 0 | 0 | 90 | 255 | 420 |
| **15** | **M.Tech Mechatronics Engineering** | 1 | 0 | 0 | 60 | 160 | 260 |
| **16** | **B.Tech Sustainable Engineering** | 1.5 | 0 | 0 | 45 | 135 | 225 |
| **17** | **B.Tech Climate Technology** | 1.5 | 0 | 0 | 0 | 120 | 300 |
| **18** | **B.Tech Hydrogen Energy Systems** | 1.5 | 0 | 0 | 0 | 120 | 300 |
| **19** | **B.Tech Space Technology** | 1.5 | 0 | 0 | 0 | 120 | 300 |
| **20** | **B.Tech Smart Infrastructure Engineering** | 1.5 | 0 | 0 | 0 | 120 | 330 |
| **21** | **B.Tech Digital Twin Technology** | 1.5 | 0 | 0 | 0 | 0 | 180 |
| **22** | **Ph.D. in Artificial Intelligence & Sustainable** | 1 | 0 | 30 | 60 | 90 | 120 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Engineering Systems** | | | | | | |
| **School of Social Sciences (7 Courses)** | | | | | | | |
| **23** | **B.A Sustainable Infrastructure Planning** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **24** | **B.A Innovation and Design Thinking** | 1.5 | 90 | 225 | 405 | 630 | 855 |
| **25** | **B.A Public Policy & Governance** | 1.5 | 0 | 0 | 0 | 0 | 120 |
| **26** | **B.A Urban Development Studies** | 1.5 | 0 | 90 | 240 | 390 | 600 |
| **27** | **B.A Disaster Management** | 1.5 | 0 | 0 | 60 | 180 | 300 |
| **28** | **B.A Behavioral Sciences** | 1.5 | 0 | 0 | 0 | 120 | 270 |
| **29** | **Ph.D. in Public Policy, Governance & Behavioral Sciences** | 1 | 0 | 0 | 0 | 0 | 30 |
| **School of Pharmacy (7 Courses)** | | | | | | | |
| **30** | **B.Pharm Intelligent Healthcare Systems** | 1.5 | 90 | 225 | 450 | 720 | 990 |
| **31** | **B.Pharm Clinical Data Science** | 1.5 | 90 | 225 | 450 | 720 | 990 |
| **32** | **B.Pharm Pharmacovigilance** | 1.5 | 0 | 90 | 240 | 390 | 540 |
| **33** | **B.Pharm Regulatory Affairs** | 1.5 | 0 | 0 | 90 | 180 | 300 |
| **34** | **B.Pharm Industrial Pharmacy** | 1.5 | 0 | 0 | 0 | 120 | 270 |
| **35** | **B.Pharm Pharmaceutical Biotechnology** | 1.5 | 0 | 0 | 0 | 0 | 180 |
| **36** | **Ph.D. in Pharmaceutical Sciences & Clinical Research** | 1 | 0 | 0 | 0 | 0 | 30 |
| **School of Management Sciences (4 Courses)** | | | | | | | |
| **37** | **BBA Healthcare Management** | 1.5 | 0 | 90 | 270 | 480 | 720 |
| **38** | **MBA Health Informatics** | 1 | 0 | 0 | 80 | 200 | 280 |
| **39** | **MBA Pharmaceutical Management** | 1 | 0 | 0 | 0 | 60 | 140 |
| **40** | **Ph.D. in Healthcare Management & Digital Business Analytics** | 1 | 0 | 0 | 0 | 0 | 30 |
| | **Total** | | 900 | 2925 | 6380 | 11595 | 17985 |

Key Insights

- **Consistent Revenue Growth:** Total institutional revenue increases steadily from ₹9,00 lakhs in 2026 to ₹17985 lakhs by 2030, reflecting phased academic expansion and stabilization of student intake across programs.
- **Engineering Programs as Primary Drivers:** B.Tech and emerging technology programs contribute the largest share of revenue, driven by high intake and demand in areas such as Artificial Intelligence, Robotics, Data Science, and Smart Infrastructure.
- **Planned Program Phasing:** Several UG, PG, and Ph.D. programs show limited or no revenue in initial years, indicating a structured rollout aligned with regulatory approvals, faculty recruitment, and infrastructure readiness.
- **Technology-Driven Growth Curve:** Advanced engineering and interdisciplinary programs

demonstrate significant revenue acceleration from 2027 onwards, supporting institutional positioning in emerging technology domains.

- **Pharmacy Programs Expansion:** Pharmacy programs contribute steadily, with specialized courses such as Clinical Data Science, Pharmacovigilance, and Biotechnology strengthening revenue growth in later years.
- **Management Programs Scaling:** BBA and MBA programs show progressive growth, contributing to industry-oriented education and enhancing overall financial sustainability.
- **Balanced Academic Portfolio:** The combination of engineering, pharmacy, and management programs ensures diversified revenue streams, reducing dependence on any single discipline.
- **Financial Sustainability & Institutional Maturity:** Continuous year-on-year revenue growth demonstrates strong financial planning, optimal resource utilization, and long-term sustainability by the end of the planning period.

**Income**

**Table 2.34 Total Income (Rupees in Lakhs)**

| S. No | Subject | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| 1 | Income from Students | 900 | 2925 | 6380 | 11595 | 17985 |
| 2 | Research Funding | 40 | 48 | 62 | 87 | 131 |
| 3 | Consultancy | 20 | 24 | 31 | 47 | 65 |
| 4 | Alumni Contribution | 10 | 12 | 15 | 21 | 32 |
| 5 | Interest Income | 20 | 20 | 20 | 20 | 20 |
| TOTAL | | 990 | 3029 | 6508 | 11770 | 18233 |

Insights – Total Income

- **Steady Income Growth:** Total institutional income increases consistently from ₹990 lakhs in 2026 to ₹17985 lakhs by 2030, reflecting strong scalability and phased academic expansion.
- **Student Fee as Primary Revenue Source:** Student fee income remains the dominant contributor (approximately 90%+), ensuring stable and predictable cash flows for the institution.
- **Research & Consultancy Growth:** Research funding and consultancy income show continuous year-on-year growth, indicating the gradual development of a strong research and industry collaboration ecosystem.
- **Alumni Contribution Expansion:** Increasing alumni contributions reflect strengthening institutional reputation, improved graduate outcomes, and active stakeholder engagement.
- **Stable Financial Base:** Interest income and diversified revenue streams support financial stability, reducing dependency risks and ensuring long-term sustainability.

**Expenditure**

**a. Operational expenditure**

### Table 2.35 Year wise operational expenditure (Rupees in Lakhs)

| S No | Operating Expenses | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| 1 | Total Salary Cost | 504 | 1,416 | 2,940 | 5,136 | 7,824 |
| 2 | Maintenance & Service Costs | 72 | 114 | 168 | 264 | 408 |
| 3 | Repairs & Maintenance Cost | 30 | 48 | 78 | 132 | 216 |
| 4 | Admin & Other Expenses | 66 | 108 | 180 | 288 | 432 |
| 5 | Cost of Materials & Consumables | 84 | 156 | 288 | 492 | 744 |
| 6 | Digital Technology Expenses | 42 | 66 | 102 | 144 | 204 |
| 7 | Stipend to Students | 24 | 48 | 90 | 156 | 252 |
| 8 | Research Expenditure | 48 | 72 | 132 | 228 | 384 |
| 9 | Startup Grants | 12 | 24 | 42 | 66 | 96 |
| 10 | Finance Cost | 30 | 42 | 60 | 90 | 126 |
| 11 | Scholarships to Students | 36 | 66 | 108 | 180 | 288 |
| Total (a) | Total (a) | 948 | 2,160 | 4,188 | 7,176 | 10,974 |

Insights – Expenditure Pattern

- Controlled Operational Growth: Operational expenditure increases from ₹948 lakhs in 2026 to ₹10974 lakhs by 2030, aligned with phased student intake growth, faculty expansion, and infrastructure scaling.
- Salary as Major Cost Component: Salary expenses constitute the largest share of total expenditure, reflecting the institution's focus on quality faculty, academic delivery, and compliance with regulatory norms.
- Declining Finance Costs: Finance costs show a steady reduction over the years, indicating effective financial planning, reduced dependency on external borrowings, and improved internal revenue generation.
- Focus on Technology & Innovation: Increasing investments in digital technology, research activities, and startup support demonstrate a strategic shift towards innovation-driven education and industry collaboration.
- Balanced Cost Structure: Expenditure is carefully optimized across operations, maintenance, academics, and student support, ensuring financial sustainability while maintaining academic quality.

**2. Capital expenditure**

**Table 2.36 Year wise capital expenditure (Rupees in lakhs)**

| S No. | Capex to be Infused | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| 1 | Capex – New Infrastructure (Construction) | 3,000 | 4,560 | 5,400 | 3,600 | 2,400 |
| 2 | Capex – Digital Assets | 144 | 216 | 300 | 384 | 480 |
| 3 | Capex – Laboratory & Equipment (Engineering/Pharmacy) | 540 | 780 | 1,080 | 1,320 | 1,620 |
| | Total (b) | 3,684 | 5,556 | 6,780 | 5,304 | 4,500 |
| | Total (a+b) | 4,632 | 7,716 | 10,968 | 12,480 | 15,474 |

**Insights – Capital Expenditure Pattern**

- **Peak Investment Phase:** Capital expenditure is highest during 2027–2029, corresponding to major infrastructure expansion, academic blocks, and laboratory development for Engineering, Pharmacy, and Management programs.
- **Strategic Digital & Lab Investments:** Progressive investment in digital assets and advanced laboratories supports technology-enabled learning, research capability building, and compliance with AICTE/PCI norms.
- **Shift Towards Consolidation:** Capital expenditure stabilizes by 2030, indicating a transition from expansion to consolidation, optimization of facilities, and efficient utilization of established infrastructure.

Comparative Analysis – Income vs Expenditure

- **Initial Investment Phase (2026–2027):** A significant portion of income is allocated towards infrastructure and institutional setup, reflecting a planned growth strategy while maintaining financial balance.
- **Growth Phase (2028 onwards):** Income increases at a faster rate than expenditure, driven by higher student intake and program maturity, resulting in improved financial performance.
- **Sustained Surplus Position:** From 2028 onwards, the institution consistently generates surplus, strengthening internal accruals and reducing reliance on external funding.
- **Long-Term Financial Sustainability:** The income–expenditure trajectory demonstrates a well-planned, financially viable model with steady surplus growth, aligning with regulatory expectations for Deemed-to-be Universities.

**Financial Allocation Breakdown**

**1. Capital Expenditure (CapEx)**

**Table 2.37 Year wise allocation of capital expenditure (in crores)**

| Year | Buildings | Equipment | Tech | R&D | Total CapEx |
|---|---|---|---|---|---|
| 2026 | 22.4 | 4.8 | 1.6 | 0.8 | 29.6 |
| 2027 | 33.6 | 7.2 | 2.4 | 1.6 | 44.8 |
| 2028 | 46.4 | 11.2 | 4 | 2.4 | 64 |
| 2029 | 60.8 | 16 | 5.6 | 4 | 86.4 |
| 2030 | 76 | 22.4 | 8 | 5.6 | 112 |

Insights – Capital Expenditure (CapEx)

- **Phased Capital Growth:** CapEx increases from ₹29.6 Cr in 2026 to a peak of ₹112 Cr in 2030, reflecting structured expansion of academic infrastructure, laboratories, and campus facilities.
- **Buildings as Primary Investment:** Infrastructure development (academic blocks, labs, hostels, and common facilities) constitutes the largest share, supporting growing student intake and multidisciplinary programs.
- **Consistent Equipment Investment:** Steady allocation towards laboratory and technical equipment ensures compliance with AICTE and PCI norms and supports practical, skill-based learning.
- **Focus on Technology & Research:** Gradual increase in technology and R&D spending highlights a strategic shift toward innovation-driven education, digital transformation, and research ecosystem development.
- **Transition to Consolidation:** The reduction in CapEx in 2030 indicates a shift from expansion to consolidation, emphasizing optimal utilization, operational efficiency, and long-term sustainability.

**2. Operational Expenditure (OpEx)**

**Table 2.38 Year wise allocation of operational expenditure (in crores)**

| Year | Faculty | Staff | Maintenance | Other Exp | Total OpEx |
|---|---|---|---|---|---|
| **2026** | **5** | **1.8** | **1.2** | **1.5** | **9.5** |
| **2027** | **8.5** | **3** | **2** | **2.5** | **16** |

| | | | | | |
|---|---|---|---|---|---|
| **2028** | **14** | **5** | **3.5** | **4.5** | **27** |
| **2029** | **22** | **8** | **5.5** | **7.5** | **43** |
| **2030** | **32** | **12** | **8** | **11** | **63** |

Insights – Operational Expenditure (OpEx)

- **Progressive Operational Growth:** OpEx increases from ₹9.5 Cr in 2026 to ₹63 Cr by 2030, in line with student intake growth, faculty recruitment, and expansion of academic programs.
- **Faculty Cost as Major Component:** Faculty expenditure constitutes the largest share of OpEx, reflecting the institution's commitment to quality teaching, research, and compliance with AICTE and PCI norms.
- **Rising Maintenance Costs:** Increased allocation towards maintenance corresponds with campus expansion, laboratory usage, and infrastructure upkeep across engineering and pharmacy facilities.
- **Controlled Administrative Spending:** Other operational expenses show measured growth, indicating effective financial planning, cost control, and efficient resource utilization.
- **Support for Sustainability & Quality:** The overall OpEx trend ensures continuous improvement in academic delivery, institutional quality, and long-term financial sustainability.

Key Financial Strategies

1. **Phased Investment Approach**
   - Years 1-2 (2026-27): Basic infrastructure development (60% of total CapEx)
   - Years 3-4 (2028-29): Research facility enhancement (25%)
   - Years 5-6 (2030-31): Sustainability optimization (15%)

2. Diversified Funding
   - 80% Institutional funds
   - 10% Corporate partnerships
   - 05% Government grants
   - 05% Alumni Endowments

3. ROI Timeline
   - Break-even: Year 4 (2028)
   - Research commercialization: Year 3 onward
   - Hospital breakeven: Year 5 (2030)

4. Cost Optimization
   - Shared facilities across colleges
   - Green energy to reduce OpEx by 18%
   - Bulk procurement agreements

### 2.4.8 Administrative Plan

This Five-Year Administrative Plan (2026–2030) outlines a structured approach to strengthen

governance, develop and implement key administrative policies, and build core infrastructure across TKR Group of Institutions. The plan follows a phased strategy—starting with policy foundation, moving to implementation and scaling, and culminating in digitization, consolidation, and accreditation readiness. It includes college-wise initiatives, cross-college transformation programs, human resource development, performance indicators, risk management, and monitoring mechanisms. The goal is to achieve a digitally advanced, quality-driven, and globally benchmarked multidisciplinary institution aligned with UGC/NEP standards.

### Table 2.39 Year wise policies execution frame work

| S NO | Administra tive Policy | Year 1: Foundation and Policy Framework Development | Year 2: Policy Implementation and Infrastructure Setup | Year 3: Expansion and Quality Control | Year 4: Integration and Digitization | Year 5: Consolidation , Review, and Accreditation Readiness |
|---|---|---|---|---|---|---|
| 1 | Purchase Policy | Draft procurement guidelines (e.g., vendor selection, approvals); set up procurement committee. | Implement digital procurement system; initiate bulk procurements via tendering. | Review vendor performance; start green procurement practices | Integrate e-procuremen t portal; enable transparent bidding | Annual policy audit; publish procurement transparency reports. |
| 2 | HR Policy | Create staffing plan, recruitment | Begin mass recruitment of | Conduct performance | Implement HRMS; start | Benchmark against other |
| | | norms, leave rules, performance appraisal framework. | faculty & staff; implement induction and training programs. | evaluations; revise training plans based on feedback. | mentoring and leadership development programs. | institutions; refine faculty development initiatives |
| 3 | Student Discipline Policy | Draft code of conduct, grievance redressal system, anti-ragging and sexual harassment policies. | Operationalize student conduct office; conduct orientation on discipline policy. | Assess incident trends; update grievance redressal mechanisms. | Introduce student counselling system and conflict resolution cell. | Digitize records; review and align with national education guidelines (e.g., NEP). |
| 4 | Library Policy | Define acquisition policy, membership, access rules, digital library framework. | Launch physical library; begin subscription to journals, databases. | Expand e-library resources; implement book digitization project. | Launch integrated digital catalog; user feedback for resource planning. | Prepare for NAAC/NBA documentation ; expand inter-library collaboration |
| 5 | Transport Policy | Survey student/staff mobility needs, plan initial transport routes, | Deploy initial bus fleet; implement student/staff ID-based access. | Optimize bus routes; implement fuel efficiency monitoring. | GPS tracking for all vehicles; develop mobile app for schedules | Evaluate carbon footprint; propose electric fleet. |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | draft basic transport usage rules. | | | | |
| 6 | Maintenanc e Policy | Outline preventive and corrective maintenance schedules for infrastructure and utilities. | Form internal maintenance team; create ticketing system for repairs. | Start AMC contracts for critical infrastructure; track downtime metrics. | Implement predictive maintenance tools for key assets | ISO certification of maintenance services. |
| 7 | Housekeepi ng Policy | Develop cleaning protocols for academic and residential buildings; hire service vendor. | Outsource services; monitor cleaning schedules and quality control | Conduct audits; implement mechanized cleaning in hostels/labs | Transition to biodegradabl e cleaning materials; waste segregation rules | Introduce internal quality inspection teams |
| 8 | Security Policy | Assess security needs, install basic security infrastructure (CCTV, guards), draft access policy | Expand CCTV network; initiate security audit; start ID card-based entry | Install biometric access; deploy patrolling systems | Integrate campus surveillance with control room; cyber security audit | Finalize full-campus integration of smart surveillance |
| 9 | Fire Safety Policy | Conduct risk assessment, install extinguishers, create evacuation plan. | Install hydrants; organize fire drills; appoint safety officers. | Audit compliance; install fire alarms and emergency lights | Introduce automated fire detection system | Seek third-party certification (e.g., NFPA). |
| 10 | Energy Conservatio n Policy | Establish baseline usage, promote LED lighting, create energy-saving awareness. | Install motion-sensor lighting; begin power usage monitoring | Introduce solar panels; implement building energy audits. | Begin net metering with renewable energy; incentive plan for savings | Publish sustainability report; aim for green building certification |
| 11 | Faculty Accommod ation Policy | Plan housing layout, define eligibility criteria, rental/maintenan ce rules | Start construction of housing units; finalize occupancy norms. | Allot completed housing; evaluate staff satisfaction. | Build guest faculty houses; add facilities (Wi-Fi, solar heating). | Satisfaction surveys; future expansion planning. |
| 12 | Water Conservatio n Policy | Survey water sources and usage, draft plan for rainwater harvesting and reuse systems | Begin rainwater harvesting construction; install water-saving devices. | Launch greywater reuse system; water audit implementatio n | Smart water meters; expand awareness programs | Attain water-neutral campus goal. |
| | | | | | | |

**Table 2.40 College / School-wise Administrative Activities (2026–2030)**

The above table illustrates a **progressive and institution-specific administrative roadmap** across all

| Institution | 2026 | 2027 | 2028 | 2029 | 2030 | Strategic Focus |
|---|---|---|---|---|---|---|
| TKR College of Engineering & Technology | AI Governance Committee | Robotics & Automation SOPs | Data Governance Policy | Emerging Tech Ethics Board | Center for Space & Advanced Technologies | Tech-Driven Innovation |
| TKR Institute of Management and Sciences | Corporate Compliance Unit | Business Analytics Framework | Digital Governance Policy | FinTech Innovation Sandbox | AI & Business Regulation Framework | Ethical & Digital Business Leadership |
| TKR College of Pharmacy | Drug Safety Monitoring Cell | Clinical Research Guidelines | Pharmaceutical Data Policy | Regulatory Affairs Unit | Advanced Drug Innovation Centre | Pharmaceutical Excellence |
| TKR College of Engineering & Technology – Diploma (Polytechnic) | Skill Development Framework | Industry Training Protocols | Outcome-Based Education Policy | Apprenticeship Integration Model | Advanced Skill & Innovation Hub | Skill-Oriented Technical Education |

constituent institutions, reflecting TKR's commitment to **innovation, ethical governance, and industry relevance**. Each institution follows a **future-oriented developmental trajectory**, evolving from foundational governance frameworks and standard operating systems to advanced domains such as **Artificial Intelligence, digital governance, fintech innovation, pharmaceutical research, and advanced engineering technologies**.

The systematic alignment of year-wise initiatives with clearly defined strategic focuses ensures **academic differentiation, regulatory preparedness, and interdisciplinary collaboration** across disciplines. This structured approach strengthens institutional capacity to meet evolving academic and industry demands while aligning with **UGC objectives of excellence, innovation, and societal impact**, thereby supporting the vision of establishing a **globally competitive, multidisciplinary Deemed to be University**.

### Table 2.41 Cross-Institutional Administrative Initiatives (2026–2030)

| Year | Governance | Quality Assurance | Digital Transformation | Internationalization |
|---|---|---|---|---|
| 2026 | Unified ERP Implementation | NAAC Pre-Accreditation Audit | Smart Campus Implementation | Establishment of International MoUs |
| 2027 | AI-Powered Decision Support System | NIRF Data Optimization Framework | Blockchain-Based Academic Credentials | Global Ranking Strategy Development |
| 2028 | Predictive Analytics Unit | ISO 21001 Certification | Metaverse-Based Virtual Campus (Pilot) | Collaboration with International Academic & Research Bodies |
| 2029 | Sustainability & Carbon-Neutral Governance Policy | National & International Accreditation (NBA/NABH/NAAC Advanced Cycle) | Quantum-Secure Digital Systems | Transnational Education Initiatives |
| 2030 | Advanced Governance & Innovation Task Force | Global Excellence Framework (Aligned | Next-Generation Intelligent | Establishment of Global Academic Presence |

| | | | | |
|---|---|---|---|---|
| | | with International Best Practices) | Administrative Systems | |

The cross-institutional initiatives reflect a unified and integrated governance model across all constituent institutions of TKR, effectively combining quality assurance, digital transformation, and internationalization. The phased implementation of systems such as ERP platforms, AI-driven decision support, predictive analytics, and sustainability-oriented policies positions the institution as a digitally advanced and future-ready academic ecosystem.

The parallel emphasis on NAAC accreditation, NIRF performance optimization, ISO standards, and national/international accreditation frameworks ensures continuous quality enhancement, regulatory compliance, and global benchmarking. This integrated approach aligns with the objectives of the UGC and the National Education Policy (NEP), supporting the vision of developing a globally competitive, innovation-driven, and multidisciplinary Deemed to be University.

### Table 2.42: Human Resource Development Plan (2026–2030)

| Year | Faculty Development | Staff Development | Leadership Development | Student Development |
|---|---|---|---|---|
| 2026 | Digital Pedagogy Training | AI-Assisted Administrative Operations | Strategic Leadership Development Program | Digital Literacy Certification |
| 2027 | Cross-Disciplinary Academic Rotation | Process Automation & Workflow Optimization | Change Management & Institutional Transformation | Research Mentorship Programs |
| 2028 | International Faculty Exchange Programs | Predictive Maintenance & Smart Systems Training | Innovation & Technology Leadership | Entrepreneurship Development Initiatives |
| 2029 | Industry Immersion & Collaborative Research | Emerging Technologies (Quantum Computing Basics) | Crisis & Resilience Leadership | Global Competency Certification Programs |
| 2030 | Advanced Teaching Methods (Neuroeducation) | AI Governance & Intelligent Systems | Futurist & Visionary Leadership | Advanced Domain Preparation (Emerging Fields) |

The Human Resource Development framework adopts a lifelong learning and future-skills approach for faculty, staff, leadership, and students. Emphasis on digital pedagogy, cross-disciplinary exposure, global faculty exchange, AI governance, and leadership development ensures institutional resilience in a rapidly evolving academic landscape. Student-focused initiatives such as research mentorship, entrepreneurship, global competency, and citizenship certifications support holistic development, employability, and global mobility, fulfilling UGC's mandate for human capital excellence.

### Table 2.43: Key Performance Indicators (KPIs) – 5-Year Targets (2025–2030)

| Domain | 2025 Baseline | 2027 Target | 2030 Target |
|---|---|---|---|
| Governance | 30% Process | 60% AI-Assisted Decision- | 90% Predictive & Intelligent Administration |

| | | | |
|---|---|---|---|
| Efficiency | Automation | Making | |
| Accreditation & Quality Benchmarking | NAAC A+ Accreditation | 5-Star Rating (National/International Frameworks) | Global Top-100 Benchmarking |
| Internationalization | 10 International MoUs | 2 Joint/Dual Degree Programs | 5 Offshore / Global Academic Centers |
| Digital Maturity | Paperless Campus | AI-Driven Academic & Administrative Systems | Fully Integrated Cognitive Campus |

The KPIs provide measurable, time-bound, and outcome-oriented benchmarks to track institutional progress. Targets related to governance automation, accreditation outcomes, internationalization, and digital maturity reflect a clear upward trajectory toward global standards. The progression from process automation to predictive administration and cognitive campus models highlights TKRDU's commitment to evidence-based governance and continuous quality enhancement, as recommended by UGC and NAAC frameworks.

### Table 2.44 Risk Management Framework (2026–2030)

| Year | Academic | Operational | Financial | Reputational |
|---|---|---|---|---|
| 2026 | Curriculum Relevance | Digital Transition | Funding Gaps | Accreditation |
| 2027 | Faculty Retention | Data Security | ROI Pressure | Rankings |
| 2028 | Research Ethics | AI Governance | Cost Overruns | IP Protection |
| 2029 | Global Compliance | Infrastructure Aging | Revenue Diversification | Cultural Sensitivity |
| 2030 | Disruptive EdTech | Workforce Reskilling | Endowment Growth | Political Dynamics |

The Risk Management Framework adopts a proactive and anticipatory approach, addressing academic, operational, financial, and reputational risks across planning cycles. By identifying emerging challenges such as AI governance, quantum risks, neurotechnology ethics, and global compliance, the institution demonstrates institutional foresight and adaptive capacity. This structured risk mitigation strategy strengthens governance credibility, financial sustainability, and global standing, ensuring long-term institutional stability as per UGC best practices.

Monitoring & Evaluation Mechanism

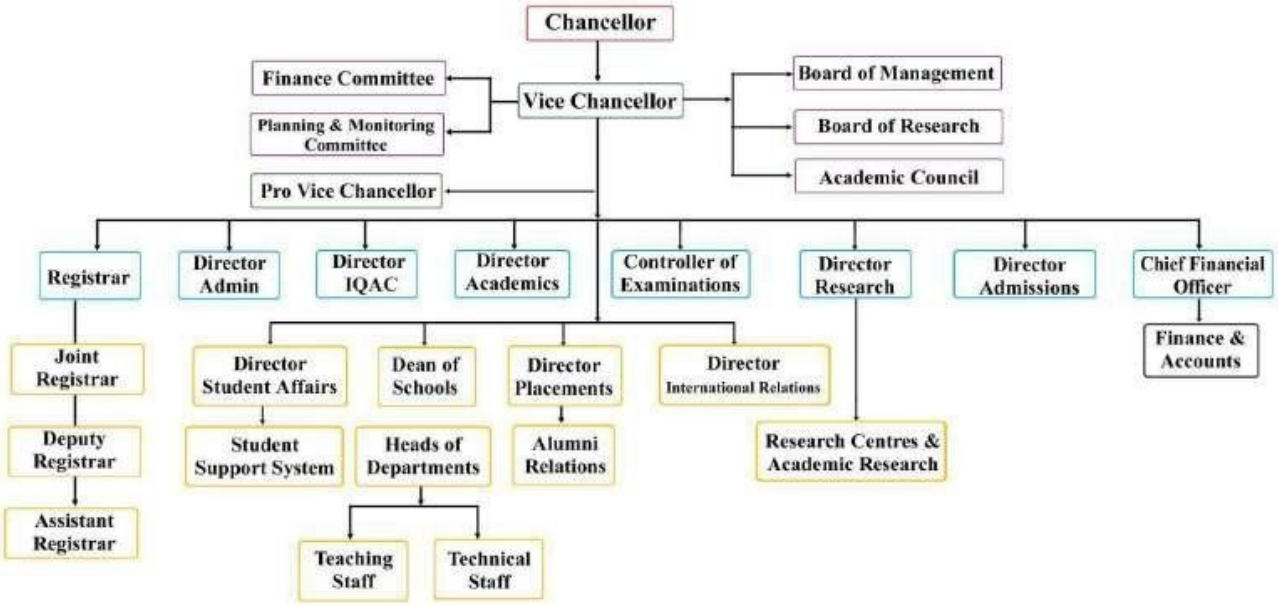
- Annual Review Meetings by the Vice-Chancellor/Registrar.
- Mid-term Internal Audit every 2.5 years.
- Stakeholder Feedback Loops involving students, faculty, and alumni.
- Use of KPIs and Balanced Scorecard for each domain.
- Alignment with UGC/NAAC/NEP metrics

## 2.4.9 Governance Plan

The Governance Plan outlines a transparent, accountable, and regulation-compliant administrative framework aligned with UGC regulations and NEP objectives. It defines the structure, roles, and functions of statutory bodies, academic councils, and key administrative authorities to ensure effective

decision-making and institutional autonomy. The framework balances academic leadership with administrative efficiency, promotes quality assurance, ethical governance, and financial prudence, and supports the institution's evolution into a globally benchmarked, multidisciplinary Deemed-to-be University.

## Organization Chart




### 2.4.9.1 Governance Functional Bodies:

**Executive Council**

- The highest governing body of the institution deemed to be a University shall be the Executive Council, headed by the Vice-Chancellor and consisting of not less than ten and not more than thirteen members.
- The Executive Council shall be the principal executive body of the institution deemed to be a University
- The composition of the Executive Council shall be as follows -
- Vice-Chancellor - Chairperson
- Pro-Vice-Chancellor (wherever applicable)
- Two members from amongst the Deans of schools of studies, by rotation, to be appointed by the Vice-Chancellor
- One Professor, who is not a Dean, by rotation, to be appointed by the Vice-Chancellor
- One Associate Professor, by rotation, to be appointed by the Vice-Chancellor
- One Assistant Professor, by rotation, to be appointed by the Vice-Chancellor
- The Commission shall nominate one representative
- Up to four nominees of the Sponsoring Body and the Registrar shall be the ex-officio Secretary of the Executive Council.

- The Executive Council is the highest governing body of the Institution. It is responsible for all management and strategic decisions of the Institution. The Executive Council is responsible for setting the institution's strategic direction, vision, mission, and objectives. It also sets the values that govern the institution's existence.
- Tenure of the members of the Executive Council
- All the members of the Executive Council, other than the Vice-Chancellor and Pro-Vice-Chancellor, shall hold office for a term of three years. In the case of Deans, the term shall be three years or until they hold the office of Dean, whichever is earlier.
- Members of the Executive Council appointed by the Vice-Chancellor among the Professor, Associate Professor, and Assistant Professor categories shall hold office for a period of one year or until they cease to serve as teachers of the University, whichever is earlier.
- Powers and limitations of Executive Council
- The Executive Council shall have the power to manage and administer the institution deemed to be a University.
- The Executive Council shall be the final decision-making body of the institution deemed to be a University with respect to every matter of the institution deemed to be a University, including academic, administrative, personnel, financial, and developmental issues.
- Subject to the provisions of these regulations and the rules of the institution deemed to be a University, the Executive Council shall, in addition to all other powers vested in it, have the following powers, namely:—
- To appoint such Professors, Associate Professors, Assistant Professors and other academic staff, including Chairs, as may be necessary, on the recommendation of the Selection Committee constituted for the said purpose and to fill up temporary vacancies therein;
- To regulate and enforce discipline amongst the employees of the institution in accordance with the rules of the institution deemed to be a university;
- To provide for the appointment of Visiting Professors, Emeritus Professors, Professors of Practice, Consultants, Scholars, etc., and determine the terms and conditions of such appointments;
- To exercise such other powers and perform such other duties as may be conferred or imposed on it by the rules and regulations of the institution deemed to be University;
- to make rules and regulations for the institution deemed to be University; and
- Meetings of Executive Council
- The Executive Council shall meet at least four times a year (with a minimum two meetings in a semester), with not less than seven days prior notice given before every meeting of the Executive Council and emergency meetings may be convened at shorter notice for reasons to be recorded in writing for such emergency meeting.
- One-third of the total number of members of the Executive Council shall form the quorum for the meeting.
- In the absence of the Vice Chancellor, the Pro-Vice Chancellor shall preside over the meeting, and where there is no Pro-Vice Chancellor in an institution deemed to be a University, a member chosen by the other members of the Executive Council present at the meeting shall preside over the meeting.
- Every member of the Executive Council, including the Chairperson, shall have one vote, and

the decisions at the meetings of the Executive Council shall be taken by simple majority; in case of a tie, the Chairperson shall have a casting vote.

- Any business that may be urgent in nature may be carried out by circulation amongst its members.
- A copy of the minutes of each meeting shall be furnished to the Chancellor of the institution deemed to be University as soon as possible after the meeting convening.
- Termination of membership
- If a member other than the Vice-Chancellor and those representing the teachers, accepts a full-time appointment in the institution deemed to be University or fails to attend three consecutive meetings of the Executive Council, without proper leave of absence, such member shall cease to be a member of the Executive Council.
- Delegation of powers of the Executive Council
- The Executive Council may, by a resolution, delegate to the Vice Chancellor or any other officer or faculty or to a Committee of officers or faculty members of the institution deemed to be University such powers as it may deem fit, subject to the condition that any action taken by the Vice-Chancellor or the officer or faculty or the Committee in the exercise of the powers so delegated, shall be reported at the subsequent meeting of the Executive Council.

## Academic Council

- The Academic Council shall be the principal academic body of the institution deemed to be the University. It shall, subject to the provisions of the rules of the institution deemed to be the University, coordinate and exercise general supervision over the academic policy of the institution deemed to be the University.
- The composition of the Academic Council shall be as follows—
- Vice-Chancellor - Chairperson;
- Pro Vice-Chancellor (wherever applicable);
- Deans of the schools and Heads of the departments or centres;
- Up to ten Professors (excluding those serving as Deans of schools and heads of departments or centres) by rotation, to be appointed by the Vice-Chancellor, giving due regard to the representation of different schools or departments or centres;
- Up to five Associate Professors from departments or centres other than the heads of the departments or centres, by rotation, to be appointed by the Vice-Chancellor;
- Up to five Assistant Professors from the departments or centres other than the heads of the departments or centres, by rotation, to be appointed by the Vice-Chancellor;
- Six persons of repute from amongst the educationists or experts for their specialised knowledge, who are not in the service of the institution deemed to be University, nominated by the Vice-Chancellor; and
- The Registrar shall be the ex-officio Secretary of the Academic Council.

- The representation of different categories shall be through rotation and not through an election. Other than the ex-officio members, the member's term shall be three years. The Controller of Examination shall be the permanent invitee to the meetings of the Academic Council.
- Powers and Functions of the Academic Council
- Subject to the provisions of these regulations and rules of the institution deemed to be a University, the Academic Council shall, in addition to all other powers vested in it, have the following powers, namely: —
- To exercise general supervision over the academic policies of the institution deemed to be a university and to give directions regarding methods of instruction, co-ordination of teaching among departments or faculties or schools or centres, evaluation of research and improvement of academic standards;
- To bring about and promote inter-departmental, inter-faculty, inter- school, inter-centre co-ordination and to establish or appoint such committees or boards as may be deemed necessary for the purpose;
- To consider matters of general academic interest either on its initiative or on a reference by a department or faculty or school or centre or the Executive Council, and to take appropriate action thereon;
- To prescribe courses or Programs of study leading to degree and diploma of the institution deemed to be University;
- To make arrangements for the conduct of examinations in conformity with the rules and bye-laws of the institution deemed to be University;
- To maintain proper standards of the examination;
- To recognise diplomas and degrees of universities and other Institutions and to determine equivalence with the certificates and degrees of the institution deemed to be a university;
- To institute Fellowships, Scholarships, Medals, Prizes, etc.;
- To frame rules covering the academic functioning of the institution deemed to be University, admissions, examinations, award of fellowships and studentships, free-ships, concessions, attendance, discipline, residence, etc.;
- To take a periodic review of the activities of the departments or centres and to take appropriate action to maintain and improve the standards of instruction;
- To recommend the institution of teaching posts (Professors, Associate Professors, and Assistant Professors) to the Executive Council;
- To make recommendations to the Executive Council for the establishment or abolition of departments, centres, schools, faculties, etc.
- To make recommendations to the Executive Council; and
- To exercise such other powers and to perform such other duties as may be conferred or imposed upon it by the rules of the institution deemed to be University.

  A. Meeting of Academic Council
- The Academic Council shall meet as often as necessary but not less than four times (at least two times in a semester) during an academic year with not less than seven days prior notice being given before every meeting of the Academic Council and emergency meetings may be convened at shorter notice, for reasons to be recorded in writing for such emergency meeting.

- One-third of the total number of members of the Academic Council shall constitute the quorum for the meeting of the Academic Council.
- Each member, including its Chairperson, shall have one vote, and decisions at the meetings of the Academic Council shall be taken by simple majority. In case of a tie, the Chairperson shall have a casting vote.
- Any business that may be necessary for the Academic Council to perform, which may be urgent in nature, may be carried out by circulation amongst its members.

## Finance Committee

- The composition of the Finance Committee shall be—
- Vice Chancellor - Chairperson
- Pro Vice-Chancellor (wherever applicable)
- One person nominated by the society or trust or company, as the case may be (wherever applicable)
- Three persons to be nominated by the Executive Council, out of whom at least one shall be a member of the Executive Council
- One representative shall be nominated by the Commission
- Three persons to be nominated by the Chancellor
- Finance Officer-Secretary- exofficio
- All members of the Finance Committee other than ex-officio members shall hold office for a term of three years.
- The Finance Committee shall meet at least four times in an academic year (at least twice each semester) to examine the accounts and scrutinise the proposals for expenditure. One-third of the total number of members of the Finance Committee shall form the quorum for a meeting.
- All proposals relating to the creation of posts and those items that have not been included in the Budget shall be examined by the Finance Committee before the Executive Council considers them and decides on waiver in fees, the establishment of scholarships, free shipping and any other financial benefits.
- The annual accounts and financial estimates of the institution deemed to be a University prepared by the Finance Officer shall be laid before the Finance Committee for consideration and comments, and thereafter, the same shall be submitted to the Executive Council for approval.
- The Finance Committee shall recommend limits for the total recurring and non-recurring expenditures for the year based on the institution's income and resources deemed a University.

## Board of Studies

- There shall be one Board of Studies for each department or school of the institution deemed to be a University. The composition of the Board of Studies shall be -
- Dean of school or Head of the department - Chairperson;
- All Professors of the school or department;
- Two Associate Professors of the school or department, by rotation;

- Two Assistant Professors of the school or department, by rotation; and
- Two external experts will be co-opted for their specialised knowledge.
- Subject to the overall control and supervision of the Academic Council, the functions of a Board of Studies shall be to approve subjects for research for various degrees and other requirements of research degrees and to recommend to the concerned School Board in such manner as may be prescribed by the rules of the institution deemed to be University regarding
- Courses of studies;
- Appointment of supervisors for research; and
- Measures for the improvement of the standards of teaching and research.
- The powers and functions of the Board of Studies shall be prescribed by the institution's rules deemed to be University.

### Selection Committee for appointment of teaching staff

- There shall be one or more Selection Committees constituted for making recommendations to the Executive Council for appointment to the post of Professors, Associate Professors, Assistant Professors and such other posts as may be prescribed, in accordance with the University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and other Measures for the Maintenance of Standards in Higher Education) Regulations, 2018.

### Disqualification

- A person shall be disqualified for being chosen as, and for being, a member of any of the authorities, or being appointed as, and for being, an officer of the institution deemed to be University if-
    - If he or she is of unsound mind or
    - If he or she is an un-discharged insolvent or
    - If he or she has been convicted by a court of law for an offence involving moral turpitude and sentenced in respect thereof to imprisonment for not less than six months or
    - If he or she has not been appointed per these regulations' provisions.
    - If any question arises as to whether a person is or has been subjected to any of the disqualifications mentioned above, the question shall be referred to the Chancellor, and his or her decision shall be final, and
    - no suit or other proceedings shall lie in any civil court against such decision.
    - Miscellaneous matters relating to different authorities
    - If any question arises as to whether any person other than the Government nominated or appointed has been duly nominated or appointed as, or is, entitled to be a member of any authority or committee of the institution deemed to be a University, the matter shall be referred to the Chancellor, whose decision thereon shall be final and binding.
    - Any member other than an ex-officio member of any authority may resign by letter addressed to the Registrar. The resignation shall take effect as soon as it is accepted by the Chancellor or the Chairperson of the Executive Council, as the case may be.
    - Sudden vacancies among the members of any authority or any Committee of the institution deemed to be a University shall be filled by the respective authority as soon

as possible and within six months.

### 2.4.9.2 Administrative Authorities Chancellor

- The Chancellor shall hold office for a period of five years from the date of assuming office and shall be eligible for re-appointment for one more term by following the procedure prescribed for the appointment of the Chancellor:
- Provided that the sponsoring body shall appoint the Chancellor of the institutions deemed to be universities.
- The Chancellor shall, by his or her office, be the head of the institution deemed to be a University and shall, if present, preside at the Convocations of the institution deemed to be a University held for conferring degrees.

### Vice-Chancellor

- The Vice-Chancellor shall be a full-time salaried officer of the institution deemed to be a University and shall be appointed by the Chancellor from a panel of three names suggested by a Search-cum- Selection Committee.
- The vice chancellor's qualifications shall be in accordance with the University Grants Commission (Minimum Qualifications for Appointment of Teachers and Other Academic Staff in Universities and Colleges and Other Measures for the Maintenance of Standards in Higher Education) Regulations, 2018.
- The procedure for the composition of Search-cum-Selection- Committee (SCSC) for the selection of Vice-Chancellor shall be as under—
- A nominee of the Chancellor, who shall be a reputed academician as the Chairperson of the Committee;
- A nominee of the Chairman, University Grants Commission; and
- An academician with at least ten years of service as a professor whom the Executive Council nominated.
- The Vice-Chancellor shall hold office for a term of five years from the date on which he or she enters upon his or her office or until he or she attains the age of seventy years, whichever is earlier and shall be eligible for re-appointment for one more term by following the procedure prescribed for the appointment of Vice-Chancellor:
- Provided that notwithstanding the expiry of the said period of five years, he or she shall continue in office until his or her successor is appointed and enters upon his or her office; however, in no case, the Vice-Chancellor shall hold office beyond the age of seventy years:
- Provided further that the Chancellor may direct the Vice-Chancellor, after his or her term has expired, to continue in office for a period not exceeding one year.
- If the office of the Vice-Chancellor becomes vacant due to death, resignation or otherwise, or if he or she is unable to perform his or her duties due to ill health or any other cause, the Pro-Vice-Chancellor shall perform the duties of the Vice-Chancellor:
- Provided that if the Pro-Vice-Chancellor is unavailable, the Chancellor shall appoint the senior most Professor who shall perform the duties of the Vice-Chancellor until a new Vice-Chancellor assumes office or the existing Vice-Chancellor resumes the duties of his or her office, as the case may be.

## Powers and duties of Vice-Chancellor

- The Vice-Chancellor shall be the Principal Executive Officer and academic officer of the institution deemed to be a University. It shall exercise general supervision and control over the affairs of the institution deemed to be a University and give effect to the decisions of all authorities of the institution deemed to be a University.
- The Vice-Chancellor may, if he or she thinks that immediate action is necessary on any matter, exercise any power conferred on any authority of the institution deemed to be University by or under these regulations and shall report to such authority at its next meeting the action taken by him or her on such matter:
- PROVIDED that if the authority mentioned in this sub-regulation believes that such action ought not to have been taken, it may refer the matter to the Chancellor, whose decision thereon shall be final: PROVIDED further that any person in the service of the institution deemed to be a University who is aggrieved by the action taken by the Vice Chancellor under this regulation shall have the right to represent against such action to the Executive Council within ninety days from the date on which decision on such action is communicated to him. Thereupon, the Executive Council may confirm, modify or reverse the action taken by the Vice-Chancellor.
- The Vice-Chancellor, if he or she believes that any decision of any authority of the institution deemed to be University is beyond the power of the authority conferred by the provisions of these regulations or that any decision taken is not in the interest of the institution deemed to be University, may ask the authority concerned to review its decision within sixty days of such decision. If the authority refuses to review the decision either in whole or in part or no decision is taken by it within the said period of sixty days, the matter shall be referred to the Chancellor whose decision thereon shall be final.
- The Vice-Chancellor shall be the ex-officio Chairperson of the Executive Council, the Academic Council, and the Finance Committee and shall, in the absence of the Chancellor, preside at the Convocations held to confer degrees on students.
- The Vice-Chancellor shall be entitled to attend and address any meeting of any authority or other body of the institution deemed to be the University, but shall not be entitled to vote unless he or she is a member of such authority or body.
- It shall be the duty of the Vice-Chancellor to see that these regulations are duly observed and implemented, and he or she shall have all the powers necessary to ensure such implementation.
- The Vice-Chancellor shall have all the powers necessary for the proper maintenance of discipline in the institution deemed to be the University, and he or she may delegate any such powers to such person or persons as he or she may deem fit.
- The Vice-Chancellor shall have the power to convene or cause the meetings of the Executive Council, the Academic Council, the Finance Committee, and other authorities to be convened.

## Removal of Vice-Chancellor

- Where there are reasons to believe that the Vice-Chancellor of an institution deemed to be a University does not possess the qualifications as required under the University Grants Commission (Minimum Qualifications for Appointment of Teachers and other Academic Staff in Universities and Colleges and Other Measures for the Maintenance of Standards in Higher Education) Regulations, 2018, or is not appointed as per the procedure stipulated in these regulations or has committed any financial or administrative impropriety, the Chairman of

Commission shall constitute an enquiry committee consisting of academic, administrative or financial experts to enquire into the matter.

- On the directions of the Commission, the Chancellor shall suspend the Vice-Chancellor pending an enquiry.
- The enquiry committee shall give an opportunity of hearing to the Vice-Chancellor before submitting its report to the Commission. Where the report of the enquiry committee confirms the ineligibility or procedural violations or impropriety, as the case may be, the Commission shall direct the Chancellor to remove the Vice Chancellor by following due procedure:
- Notwithstanding anything contained in these regulations, the Chancellor may, at any time after the Vice Chancellor has entered upon his or her office, by order in writing, remove the Vice-Chancellor from office on the grounds of incapacity, misconduct or violation of these regulations:
- PROVIDED that the Chancellor shall make no such order unless the Vice-Chancellor has been given a reasonable opportunity of showing cause against the action proposed to be taken against him: PROVIDED further that the Chancellor may, at any time before making such order, suspend the Vice-Chancellor pending an inquiry.

## Pro-Vice-Chancellor

- On the recommendation of the Vice-Chancellor, the Executive Council shall appoint a Professor as Pro-Vice-Chancellor to discharge the duties of the Pro-Vice-Chancellor in addition to his or her duties as a Professor:
- PROVIDED further that where the Executive Council does not accept the Vice-Chancellor's recommendation, the matter shall be referred to the Chancellor, who may either appoint the Professor recommended by the Vice-Chancellor or ask the Vice-Chancellor to recommend the name of another Professor for re-consideration by the Executive Council.
- The term of office of the Pro-Vice-Chancellor shall be as decided by the Executive Council. Still, it shall not, in any case, exceed five years or until the expiration of the term of office of the Vice-Chancellor, whichever is earlier:
- PROVIDED that the Pro-Vice-Chancellor whose term of office has expired shall be eligible for re-appointment by following the procedure prescribed for the appointment of Pro-Vice-Chancellor: PROVIDED further that the Pro-Vice-Chancellor shall, while discharging the duties of the Vice-Chancellor, continue in office, notwithstanding the expiration of his or her term of office as Pro-Vice- Chancellor, until the Vice Chancellor resumes office or a new Vice-Chancellor assumes office, as the case may be:
- PROVIDED also that, in any case, the Pro-Vice-Chancellor shall retire at sixty-five years old.
- The Pro-Vice-Chancellor shall have the powers and duties as may be prescribed by the rules of the institution deemed to be the University.
- The Pro-Vice-Chancellor shall assist the Vice-Chancellor in respect of such matters as may be specified by the Vice-Chancellor on this behalf from time to time and shall also exercise such powers and perform such duties as may be assigned or delegated to him by the Vice-Chancellor.

## Registrar

- The Registrar shall be a whole-time salaried officer of the institution deemed to be a University

and shall be appointed by the Executive Council on the recommendations of the selection committee consisting of the following: —

- Vice-Chancellor - Chairperson;
- One nominee of the Chancellor;
- Two members of the Executive Council nominated by it; and
- One expert not in the service of the University to be nominated by the Executive Council.
- The selection committee meeting shall be fixed after prior consultation with and subject to the convenience of the Chancellor's nominee and the experts nominated by the Executive Council. The proceedings of the selection committee shall not be valid unless at least three of the Chancellor's nominees or persons nominated by the Executive Council attended the meeting.
- The Registrar shall hold office for a term of five years from the date of assuming office and shall be eligible for re-appointment for a second term by following the procedure prescribed for the Registrar:
- PROVIDED that the Registrar shall retire on attaining the age of sixty- two years, and the emoluments and other terms and conditions of service of the Registrar shall be such as may be prescribed by the rules of the institution deemed to be a University.
- When the office of the Registrar is vacant or when the Registrar is unable to perform the duties of his or her office because of illness, absence, or any other cause, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.
- The Registrar shall be ex-officio Secretary of the Executive Council and the Academic Council but shall not be deemed a member of any of these authorities.
- The Registrar shall be directly responsible to the Vice-Chancellor and work under his or her direction.
- The Registrar shall have the power to take disciplinary action against employees, excluding teachers and other academic staff, as may be specified in the order of the Executive Council and to suspend them pending inquiry, to administer warnings to them or to impose on them the penalty of censure or the withholding of increment:
- PROVIDED that no such penalty shall be imposed unless the person has been given a reasonable opportunity to show cause against the action proposed to be taken against him or her.
- An appeal shall lie to the Vice-Chancellor against any order of the Registrar imposing any of the penalties specified in sub-regulation (6).

In the case where the inquiry discloses that a punishment beyond the power of the Registrar is called for, the Registrar shall, upon the conclusion of the inquiry, make a report to the Vice-Chancellor along with his or her recommendations:

PROVIDED that an appeal shall lie to the Executive Council against an order of the Vice-Chancellor imposing any penalty.

**It shall be the duty of the Registrar**

- To be the custodian of the records, the common seal, and such other property of the institution deemed to be University as the Executive Council shall commit to his or her charge

- To issue all notices convening meetings of the Executive Council, the Academic Council, and any Committees appointed by those authorities
- To keep the minutes of all the meetings of the Executive Council, the Academic Council, and any Committees appointed by those authorities
- To conduct the official correspondence between the Executive Council and the Academic Council
- To supply to the Chancellor copies of the agenda of the meetings of the authorities of the institution deemed to be University as soon as they are issued and the minutes of such meetings;
- To represent the institution deemed to be the University in suits or proceedings by or against the University, sign powers of attorney and verify pleadings or depute his or her representative for the purpose;
- To perform such other duties as may be specified in the rules of the institution deemed to be University or as may be required from time to time by the Executive Council or the Vice-Chancellor, as the case may be;
- To enter into an agreement, sign documents, and authenticate records on behalf of the institution deemed to be the University;
- To make arrangements to safeguard and maintain the buildings, gardens, office, canteen, cars and other vehicles, laboratories, libraries, reading rooms, equipment and other properties of the institution deemed to be University; and (j) to conduct the official correspondence on behalf of the authorities of the institution deemed to be University.

### Finance Officer

- The Finance Officer shall be appointed by the Executive Council on the recommendations of a selection committee constituted for the purpose. He or she shall be a full-time salaried officer of the institution deemed to be the University.
- The Finance Officer shall be appointed for a term of five years and shall be eligible for re-appointment by following the procedure prescribed for the appointment of the Finance Officer:
- Provided that, the Finance Officer shall retire at the age of sixty- two.
- The emoluments and other terms and conditions of service of the Finance Officer shall be as prescribed by the Executive Council from time to time.
- When the office of the Finance Officer is vacant or when the Finance Officer is unable to perform the duties of his or her office by reason of illness, absence or any other cause, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.
- The Finance Officer shall be ex-officio Secretary of the Finance Committee but shall not be deemed a member of such Committee.

### The Finance Officer shall

- Exercise general supervision over the funds of the institution deemed to be a University and shall advise it as regards its financial policy; and
- Perform such other financial functions as may be assigned to him by the Executive Council or as may be prescribed by the rules of the institution deemed to be University.

### Subject to the control of the Executive Council, the Finance Officer shall

Ensure that the limits fixed by the Executive Council for recurring and non-recurring expenditures for a year are not exceeded and that all amounts of money are expended on the purpose for which they are granted or allotted;

Be responsible for the preparation of annual accounts and the budget of the institution deemed to be a university and for their presentation to the Executive Council;

Keep a constant watch on the state of the cash and bank balances and on the state of investments; Watch the progress of the collection of revenue and advice on the methods of collection employed;

Ensure that the registers of buildings, land, furniture, and equipment are maintained and up-to-date and that stock- checking is conducted of equipment and other consumable materials in all offices, departments, schools, faculties, centres and specialised laboratories;

Bring to the notice of the Vice-Chancellor un-authorised expenditure and other financial irregularities and suggest disciplinary action against persons at fault;

Call for from any office, department, school, faculty, centre, laboratory, etc. maintained by the institution deemed to be the University any information or returns that he or she may consider necessary for the performance of his or her duties; and

Work under the direction of the Vice-Chancellor and shall be responsible to the Executive Council through the Vice- Chancellor.

## Controller of Examinations

The Executive Council shall appoint the Controller of Examinations based on the recommendations of a selection committee constituted for the purpose, and he or she shall be a whole-time salaried officer of the institution deemed to be a university.

The Controller of Examinations shall be appointed for a term of five years and shall be eligible for reappointment by following the procedure prescribed for the appointment of Controller of Examination:

Provided that the Controller of Examinations shall retire at the age of sixty-two years.

The emoluments and other terms and conditions of service of the Controller of Examination shall be as the Executive Council prescribes from time to time.

When the office of the Controller of Examinations is vacant or when the Controller of Examinations is unable to perform the duties of his or her office because of illness, absence or any other cause, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.

The Controller of Examination shall arrange for and superintend the examinations of the institution deemed to be a University in the manner as may be prescribed by the rules of the institution deemed to

be a University. The Controller of Examinations shall be a permanent invitee to the Academic Council.

The Controller of Examinations shall comply with all the specific directions of the Executive Council, Academic Council and Vice- Chancellor regarding examination and evaluation.

## Dean

The Departments dealing with allied subjects may be grouped into faculties or schools, etc., and every faculty shall be headed by a Dean.

Every Dean of the school or faculty shall be appointed by the Vice- Chancellor from amongst the Professors in the school or faculty, by rotation, for a period of two years:

PROVIDED that if there is only one Professor or no Professor in a school or faculty, the Dean shall be appointed, for the time being, from amongst the Professor, if any, and the Associate Professors in the school or faculty.

When the office of the Dean is vacant or when the Dean is unable to perform duties of his or her office because of illness, absence or any other cause, the duties of the office shall be performed by the senior-most Professor or Associate Professor, as the case may be, in the school.

The Dean shall be the Head of the school or faculty or centre, responsible for the conduct and maintenance of the standards of teaching and research in the school or faculty or centre, and shall have such other functions as may be prescribed by the rules of the institution deemed to be a University.

The Dean shall have the right to present and speak at any meeting of the Board of Studies or Committees of the school, faculty, or centre, as the case may be, but shall not have the right to vote there unless he is a member thereof.

## Head of the Department

There shall be a Head of the Department or chairperson of the centre for each of the departments or centres in the institution deemed to be a University, who the Vice-Chancellor shall appoint from amongst the Professors of the department or centre:
PROVIDED that if there is no Professor in the department or centre or there is only one Professor in the department or centre, whose term as Head of the department or chairperson of the centre is ending, the Vice Chancellor may appoint an Associate Professor as Head of the Department.
The term of the Head of the department or chairperson of the centre shall normally be two years, and he or she shall be eligible for re- appointment for one more term by following the procedure prescribed for appointment of the Head of the department or chairperson of the centre.
The powers and functions of the Head of the department or chairperson of the centre shall be prescribed by the institution's rules deemed to be University.

# CHAPTER 3
# OUTPUT AND OUTCOME OF THE PROPOSED UNIVERSITY

This chapter presents the projected outputs and outcomes of TKR Deemed to be University, including programme-wise graduate projections, year-wise cumulative intake, and expected graduation trends.

It highlights the alignment of student strength with faculty requirements to ensure compliance with UGC/AICTE norms, while demonstrating outcomes in terms of employability, higher education progression, and societal impact. The chapter also links student and faculty strength with research output, including publications, patents, consultancy, and sponsored funding.

Overall, the projections establish the University as a multidisciplinary, research-driven institution focused on academic excellence and sustainable growth.

## 3.1 Output

### 1. Programme-wise Graduate Output

**Table 3.1 Projected student output after five years**

| S. No | School | Programme Level | Expected Output |
|---|---|---|---|
| 1 | School of Emerging Engineering & Technology | UG Engineering Programmes | 3,860 |
| 2 | School of Emerging Engineering & Technology | PG (M.Tech) Programmes | 240 |
| 3 | School of Emerging Engineering & Technology | Ph.D. Programmes | 60 |

| | | | |
|---|---|---|---|
| 4 | School of Social Sciences | UG Programmes (B.A) | 780 |
| 5 | School of Social Sciences | PG Programmes (M.A) | 100 |
| 6 | School of Social Sciences | Ph.D. Programmes | 30 |
| 7 | School of Pharmacy | UG Programmes (B.Pharm) | 760 |
| 8 | School of Pharmacy | PG Programmes (M.Pharm) | 120 |
| 9 | School of Pharmacy | Ph.D. Programmes | 30 |
| 10 | School of Management Sciences | UG Programmes (BBA) | 160 |
| 11 | School of Management Sciences | PG Programmes (MBA) | 240 |
| 12 | School of Management Sciences | Ph.D. Programmes | 30 |
| | **Total Student Output after Five Years** | | 6,410 |

The above table presents the programme-wise projected student output of **TKR Deemed to be University** based on the planned admissions up to 2030 and the respective programme durations. The projections are derived from a phased intake plan and reflect realistic completion rates across engineering, pharmacy, management, and social sciences disciplines.

These estimates assume successful completion within the normal duration of each programme and demonstrate the multidisciplinary nature, academic diversity, and outcome-oriented approach of the proposed University.

**2. Year-wise Cumulative Student Output (All Schools)**

### Table 3.2 Year-wise Cumulative Student Output

| Academic Year | Cumulative Student Intake | Cumulative Output |
|---|---|---|
| End of Year 1 (2026) | 600 | 0 |
| End of Year 2 (2027) | 1,380 | 0 |
| End of Year 3 (2028) | 2,380 | 80 |
| End of Year 4 (2029) | 3,640 | 620 |
| End of Year 5 (2030) | 5,220 | 1,540 |

This table represents the cumulative number of students admitted (intake) and the corresponding number of students graduating over the five-year period.

**TKR Deemed to be University** is expected to produce a substantial number of graduates across engineering, pharmacy, management, and social sciences disciplines. These graduates will be equipped with multidisciplinary knowledge, technical skills, research orientation, and industry-relevant competencies.

The University's academic framework emphasizes innovation, employability, and societal contribution, enabling graduates to contribute effectively to technological advancement, entrepreneurship, and socio-economic development.

### 3. Mapping of Student Output with Employability and Progression Outcomes

#### Table 3.3 Programme-wise Employability and Progression Mapping

| Programme Category | Student Output Contribution | Employment / Progression Outcome |
|---|---|---|
| Engineering & Technology | ~4,160 graduates | 75% employment, 15% higher education, 10% startups / entrepreneurship |
| Pharmacy | ~910 graduates | 82% employment in pharmaceutical, healthcare, and clinical research sectors |
| Management Studies | ~430 graduates | 85% placement in corporate, healthcare administration, and business analytics sectors |
| Social Sciences & Humanities | ~910 graduates | 70% higher education, public policy, NGOs, and civil services |
| Ph.D. Programmes (All Schools) | ~150 scholars | Academic, research, innovation, and consultancy roles |

Key Outcomes: Career Pathways and Employability Mapping

- High-volume programmes such as **Engineering, Pharmacy, and Management** contribute significantly to meeting industry workforce demands.
- Specialized programmes support **emerging technologies, healthcare systems, entrepreneurship, and policy development**.
- Social sciences and humanities programmes strengthen **governance, public service, and community engagement**.
- A significant proportion of graduates are expected to pursue **higher education, research, and innovation-driven careers**.
- The academic framework promotes **industry readiness, skill development, and multidisciplinary competencies**.

The employability mapping demonstrates that student output from TKR Deemed to be University is effectively translated into **employment, higher education progression, entrepreneurship, and societal contribution**, supporting national development and knowledge economy growth.

### Research Output

Research output at **TKR Deemed to be University** is planned in alignment with student strength, faculty capacity, and institutional thrust areas in engineering, pharmacy, management, and social sciences.

#### Table 3.4: Research Output Mapped to Student and Faculty Strength

| Research Indicator | Five-Year Projection | Mapping Rationale |
|---|---|---|
| Total Students (All Programmes) | ~5,200+ | Expanding multidisciplinary student ecosystem across Engineering, Pharmacy, Management, and Social Sciences |
| Ph.D. Scholars | ~150 | Strong doctoral, interdisciplinary, and innovation-driven research ecosystem |
| Research Publications | 600–800 | Increased faculty strength with research-focused academic framework |
| Sponsored Research Projects | 60–75 | Collaboration with industry, government agencies, and innovation councils |
| Research Funding Mobilized | ₹50–75 Crores | Focus on applied research, emerging technologies, healthcare, and sustainability |
| Patents / IPR | 40–70 | Innovation-oriented ecosystem in AI, Robotics, Healthcare, Energy, and Pharma |
| Consultancy Projects | 45–60 | Strong industry interaction and institutional consultancy initiatives |
| Student Research Participation | >40% (UG & PG) | Research-integrated curriculum, incubation support, and project-based learning |

## 3.2 Outcomes

### 1. Academic, Research, Industry & Societal Impact

TKR Deemed to be University, through its multidisciplinary ecosystem, aims to deliver outcomes across engineering innovation, pharmaceutical sciences, management practices, digital technologies, and societal development. The University will focus on developing technology-driven solutions, industry-ready graduates, applied research outputs, and scalable community services.

The institutional model integrates:

- Engineering and digital technologies
- Pharmaceutical sciences and applied research
- Management and entrepreneurship
- Community outreach and skill development

### Table 3.5: Year-wise Academic, Research, and Outreach Outcomes (2026–2030)

| Category | Sub-Category | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|
| Academic Output | Student Intake | 600 | 1,380 | 2,380 | 3,640 | 5,220 |
| | Graduates | 0 | 0 | 80 | 620 | 1,540 |
| Industry & Skill Development | Internships / Industrial Training | 120 | 350 | 700 | 1,200 | 1,900 |
| | Industry Projects / Capstone | 25 | 60 | 120 | 220 | 360 |
| Pharmacy & Applied Services | Lab Testing / Analytical Services | 40 | 80 | 140 | 220 | 320 |
| | Pharma / Industry Collaborations | 5 | 10 | 18 | 28 | 40 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Engineering & Technology Output | Prototypes / Product Development | 10 | 25 | 50 | 90 | 140 |
| | Digital / AI Solutions Deployed | 3 | 8 | 18 | 35 | 60 |
| Research Output | Publications | 20 | 55 | 110 | 180 | 260 |
| | Patents / IPR | 2 | 5 | 10 | 18 | 30 |
| | Sponsored Projects | 4 | 8 | 15 | 25 | 40 |
| Management & Entrepreneurship | Startups / Incubations | 1 | 3 | 8 | 15 | 25 |
| | Consulting / Business Projects | 5 | 12 | 22 | 38 | 55 |
| Community Outreach | Skill Development Programs | 8 | 15 | 28 | 45 | 65 |
| | Beneficiaries | 400 | 900 | 1,800 | 3,200 | 5,000 |

## 2. Outcome Analysis

The projections indicate steady year-on-year growth (~10–20%), reflecting expansion in academic capacity, research productivity, and industry engagement.

- Engineering & Technology:
  Growth in prototypes and digital solutions highlights focus on innovation, AI, IoT, and product development.
- Pharmacy & Applied Sciences:
  Increasing analytical services and collaborations demonstrate industry linkage, quality testing, and research application.
- Management & Entrepreneurship:
  Expansion of startups and consulting projects supports leadership, business innovation, and economic contribution.
- Industry Integration:
  Internships and industry projects ensure strong employability and skill alignment.
- Community Impact:
  Skill development programs contribute to workforce development and societal upliftment.

3. Technology-Enabled Innovation & Applied Research

TKR DEEMED TO BE UNIVERSITY will develop technology-driven solutions and applied research outputs across engineering and pharmacy domains.

Key Indicators

- 10+ technology products / prototypes developed
- Patent filings and commercialization of innovations
- Publications in indexed journals
- Industry-supported applied research

4. Research & Innovation Ecosystem

The University will promote data-driven and interdisciplinary research using digital technologies.

Key Indicators

- 40–50 sponsored research projects
- Increased industry-funded research collaborations
- Integration of research into teaching and student projects

5. Workforce Development & Skill Ecosystem

TKR will train students in advanced technologies, management practices, and applied sciences.

Key Indicators

- 1000+ students trained annually in AI, Data Science, Industry 4.0 tools
- Strong internship and placement ecosystem
- Industry-certified training programs

6. Societal & Economic Impact

The University will contribute through:

- Skill development and employability
- Technology solutions for real-world problems
- Startup ecosystem and entrepreneurship
- Community outreach and training

Key Indicators

- Large-scale skill development programs
- Increased startup creation and job generation
- Contribution to regional and national economic growth

### Table 3.6: Digital Integration and Institutional Impact

| Outcome Domain | Digital Enablement | Integrated Outcome | Institutional Impact |
|---|---|---|---|
| Academic Outcomes | LMS, Smart Classrooms, Virtual Labs | Technology-enabled multidisciplinary learning | NEP-aligned modern curriculum |
| Research Outcomes | AI, Data Analytics, Simulation Tools | Applied and interdisciplinary research | Publications, patents, innovation |
| Student Learning | Simulation, Digital Assessment | Skill-based and experiential learning | Industry-ready graduates |
| Industry Integration | ERP, Collaboration Platforms | Industry-academia projects | Improved employability |
| Innovation Outcomes | Incubation Centers, Startup Platforms | Entrepreneurship ecosystem | Startup growth and commercialization |
| Societal Outcomes | Digital Training Platforms | Skill development and outreach | Community and workforce impact |
| National Outcomes | Digital Knowledge Systems | Contribution to innovation economy | Alignment with national policies |
| Global Outcomes | International Collaboration Platforms | Global research and exposure | International recognition |

The integrated outcomes across academic growth, research productivity, industry engagement, and societal impact position TKR Deemed to be University as a multidisciplinary, technology-driven, and innovation-focused institution. The University is well-equipped to deliver skilled professionals, scalable solutions, and meaningful contributions to national development.

### 3.3 Unique Value Proposition of TKR Deemed to be University

TKR Deemed to be University will be distinguished by the following core strengths:

1. Multidisciplinary Integration of Technology, Management, and Applied Sciences
The University will integrate engineering, pharmaceutical sciences, management, and social sciences with emerging digital technologies such as Artificial Intelligence, Data Science, IoT, and Industry 4.0 tools, enabling a holistic, application-oriented learning ecosystem.

2. Research-to-Innovation and Product Development Ecosystem
TKR will establish a strong pipeline from academic research to real-world applications, facilitating prototype development, product design, startup incubation, and industry deployment. This ensures translation of knowledge into innovative solutions, patents, and commercial ventures.

3. Technology-Enabled Industry Integration and Skill Development
The University will emphasize industry-aligned education through internships, live projects, consulting assignments, and skill-based training, supported by digital platforms, simulation tools, and smart learning environments, ensuring high employability and practical exposure.

4. Global Collaboration and Knowledge Exchange
TKR will actively promote international collaborations, joint programmes, faculty exchange, and global research partnerships, supported by digital knowledge-sharing platforms and participation in global academic networks, positioning the University as a globally connected institution.

### Strategic Insight

The unique value proposition reflects TKR's vision of creating a multidisciplinary, innovation-driven, and industry-oriented academic ecosystem, where education, research, and practical application converge. This integrated model aligns with UGC and NEP objectives, fostering academic excellence, entrepreneurship, and societal impact, and positioning the University as a future-ready institution with global relevance.

### 3.4 Summary of Output and Outcomes

TKR Deemed to be University, building on the established academic legacy of its constituent institutions, is poised to emerge as a leading multidisciplinary university integrating engineering, pharmaceutical sciences, management, and social sciences with advanced digital technologies. The University's foundation is strengthened by its consistent track record in academic delivery, industry engagement, and applied research, providing a robust platform for future growth and innovation.

Within the next 5–10 years, TKR Deemed to be University is projected to produce over 5,000–6,000 skilled graduates across diverse disciplines, while maintaining statutory student–faculty ratios and ensuring high levels of employability, higher education progression, and entrepreneurial outcomes.

The University is expected to evolve into a research and innovation hub, generating 350–500 peer-reviewed publications annually, mobilizing ₹30–50 crore in sponsored research funding, and fostering innovation through patents, prototypes, and technology-driven solutions. The emphasis on research-to-application translation will enable the development of industry-relevant products, digital solutions, and scalable technologies, particularly in engineering and pharmaceutical domains.

Through strong industry collaboration, internship ecosystems, consulting projects, and startup incubation, the University will create a dynamic environment for skill development, innovation, and knowledge transfer. It is projected to support 10–15+ startups annually, contributing to job creation and economic growth.

TKR will also make a significant societal and economic impact through large-scale skill development programmes, community outreach initiatives, and technology-enabled solutions addressing real-world challenges. The University is expected to benefit thousands of learners and community members annually, contributing to regional development and national priorities.

This integrated model of education, research, industry engagement, and societal contribution positions TKR Deemed to be University as a future-ready, innovation-driven institution, aligned with the objectives of the UGC Deemed-to-be University framework and the National Education Policy (NEP), thereby strengthening its case for recognition under the Deemed-to-be University (Distinct Category) status.

## ANNEXURES

*(Click to open link)*

| | | |
|---|---|---|
| 1 | By-Laws of Sponsoring Body | https://drive.google.com/file/d/1ITjugrKE2QNLEA-cnd1CWajsRiN6WpE9/view?usp=drive_link |
| 2 | Key Academic and Administrative Personnel | https://drive.google.com/file/d/1x0xx9tRtIsFZIXRVAJDRcY8lzOmRttFC/view?usp=drive_link |
| 3 | Land Owner Ship Documents in the name of Sponsoring Body | https://drive.google.com/file/d/1_rdctNidDgCcu6MYZVXl84W8JGQTKBdU/view?usp=drive_link |
| 4 | Approvals from Relevant Statutory body | https://drive.google.com/file/d/1zCnYOgKwBWvNW_z4MZmpnM4l3RPl_y5w/view?usp=drive_link |
| 5 | Existing Physical Infrastructure with Building approval plans | https://drive.google.com/file/d/1ACyCJ4XfEWxVhPunx-Atfilklvz9Sk4f/view?usp=drive_link |
| 6 | List of Faculty members | https://docs.google.com/spreadsheets/d/1Acb1IZYJQbePTB2qem1gY7GzN13UmrfX/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 7 | List of Non Teaching Staff | https://docs.google.com/spreadsheets/d/1xe8-c_3bqVU-EtmF2biTHiMwDxG045h-/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 8 | List of Research publications | https://docs.google.com/spreadsheets/d/18ZkeQSTExaqfBQJUuncKBTyTASA6kPQc/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 9 | List of achievements faculty | https://docs.google.com/spreadsheets/d/1qq7rNjLkwV8PZNI3n-GqB7TlFAiybWGK/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 10 | List of achievements students | https://docs.google.com/spreadsheets/d/1KIDaN3lNHeSCqRgsgf7EcbwQKStMQfis/edit?usp=drive_link&ouid=109622351798161540968&rtpof=true&sd=true |
| 11 | MOUs and Collaborations | https://docs.google.com/spreadsheets/d/121bxkoCdpwAd1JOLWV56aqxwNMa-HzzY/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 12 | List of major Equipments/ Softwares | https://docs.google.com/spreadsheets/d/1DGZJ3Q0C_pHIhfbixy5O7LldeYTyR48Y/edit?usp=sharing&ouid=109622351798161540968&rtpof=true&sd=true |
| 13 | Visuals of the Institutions | https://drive.google.com/file/d/11JXZeTpeyVAzuuPLpI5X0hxYpBDRr_pn/view?usp=drive_link |

| | | |
|---|---|---|
| **14** | **NOC** | **https://drive.google.com/file/d/10FFb3t4mPC0K_S_yS-jI4fgzR_7N5S0B/view?usp=drive_link** |