

MNR Higher Education and Research Academy (MNR-HERA)

(An Institution Starting from the Beginning Proposed to be
Deemed to be University under Distinct Category)

(Sponsored by MNR Educational Trust)



**A Detailed Project Report
Submitted to the University Grants Commission (UGC) - New Delhi**



Inauguration of
MNR Knowledge Centre (Central Library)
by Bharat Ratna Dr. A.P.J Abdul Kalam,
Former President of India.

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Dr. Ch. Mohan Rao
Former Director, CSIR-CCMB,
Hyderabad
CSIR-Distinguished Scientist

MNR GROUP OF INSTITUTIONS

MEDICAL EDUCATION COLLEGES:

MNR Medical College(UG & PG), Sangareddy
MNR Dental College(UG & PG), Sangareddy
MNR Homoeopathic Medical College & Hospital, Sangareddy
MNR College of Physiotherapy(UG & PG), Sangareddy
MNR College of Nursing(UG & PG), Sangareddy
MNR School of Nursing, Sangareddy,
MNR Institute of Paramedicals, Sangareddy

HEALTH CARE:

MNR Multi-Speciality Hospital, Sangareddy
MNR Dental Hospital, Sangareddy
MNR Homoeopathic Hospital, Sangareddy

PROFESSIONAL COLLEGES:

MNR College of Pharmacy, Sangareddy
MNR College of Engineering & Technology, Sangareddy
MNR PG Teacher Education College (M.Ed), Kukatpally, Hyderabad
MNR Teacher Education College (B.Ed.), Kukatpally, Hyderabad
MNR Elementary Teacher Education College (D.Ed.) Kukatpally, Hyderabad
MNR TPT Teacher Education College (TPT), Kukatpally, Hyderabad
MNR College of Education (B.Ed.) Sangareddy
MNR Rural PG College of Education (M.Ed.), Sangareddy
MNR Elementary Teacher Education College (D.Ed.) Sangareddy

LIFE & SOCIAL SCIENCE COLLEGES:

MNR Post Graduate College, Kukatpally, Hyderabad
MNR Degree College, Kukatpally, Hyderabad,
MNR's Sri Sainath Degree College, Chintal, Hyderabad

JUNIOR COLLEGES

MNR Junior College, Kukatpally, Hyderabad,
MNR Residential Junior College, (Boys) Swarnapuri Hyderabad,
MNR Residential Junior College, (Girls) Swarnapuri Hyderabad,

SCHOOLS

The Indo-English High School, Santoshnagar, Hyderabad
The Indo – English High School, Kukatpally, Hyderabad
The Indo-English High School, Swarnapuri, Hyderabad
MNR High School, Ashoknagar, BHEL, Hyderabad
MNR School of Excellence, Ashoknagar, BHEL Hyderabad
MNR School, Kakatiya Nagar, RC Puram, Hyderabad
MNR School of Excellence, Mehdipatnam, Hyderabad
MNR School of Excellence, A.S.Rao Nagar, Hyderabad
MNR School of Excellence, Sangareddy
MNR School of Excellence, Kamothe, Navi Mumbai
MNR International School, Palaspe, Navi Mumbai
Mantena American School, Sharjah, UAE.
MNR I Exceed Public School, Kukatpally, Hyderabad
MNR High School, Chintal, Hyderabad
The Indo-English Residential School (Boys) Swarnapuri, Hyderabad
The Indo-English Residential School (Girls), Swarnapuri, Hyderabad

OTHERS

MNR Charitable Trust, Sangareddy,
MNR Educational Trust
MNR Research Conventions Pvt. Ltd.,
MNR Educational Council
MNR Health Care Pvt. Ltd.,
MNR Foundation for Research & Innovation
MNR Teach-Trillion, DMCC, Dubai, UAE
MNR Talent & Skill Development Institute, Dubai, UAE

MNR Higher Education And Research Academy (MNR-HERA)

(An Institution Starting from the Beginning Proposed to be Deemed to be University under “Distinct Category”)

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Detailed Project Report of MNR Higher Education and Research Academy (MNR-HERA), an Institution Proposed to be “Deemed to be University under Distinct Category” of UGC

1. Introduction

This proposal for the Deemed to be University is being submitted to the University Grants Commission keeping in view the great Vision and Commitment of the UGC in issuing the Regulations 2023 for declaration as Deemed to be Universities for enhancing the quality higher educational opportunities and making them accessible to more number of students in India, while the Sponsoring Body hereby assures to comply with all these Regulations.

The MNR Higher Education and Research Academy (MNRHERA) with its strong Foundation built up by the MNR Educational Trust over a period of five decades has now proposed to the UGC for grant of “Deemed to be University status under the Distinct Category” to become a 21st Century world-class overall higher education and skill capabilities provider to meet the national and global challenges. The proposed DU is a multi-institutional and multi-disciplinary education and research university making curriculum more inclusive and offering skilful education for increasing employability potential of the graduates and postgraduates. In tune with the **National Educational Policy (NEP) 2020, and the Curriculum and Credit Framework for Undergraduate Programmes (CCFUP 2022) of the UGC**, the DU will aim to develop good, thoughtful, well rounded and creative individuals with ethical and constitutional values, intellectual curiosity, scientific temper and spirit of service, given the 21st Century requirements and strategic needs of the country. **In the process new courses which bring a paradigm shift from traditional technologies to the cutting edge technologies are being introduced.** Apart from Degree courses, certain certificate courses, Diploma courses, and one-year PG Diploma courses as some kind of finishing schools are also contemplated for enhancing the employability of the students.

To cite a few examples, the courses on Artificial Intelligence (AI), Data Science (DS), Machine Learning (ML), Internet of Things (IoT) under the **School of Intelligence and Computing**, the courses on AI in Agriculture, DS in Agriculture, Robotics and UAVs, IoT in Agriculture under the **School of Technology-led Agriculture** are the need of the day and immediate future. Given the lessons learnt from the times of epidemics and pandemics particularly during the last three years, the University will take the lead to undertake education and research in areas of health care technologies, image technologies, emergency medical technology, virology, diagnostics, flow cytometry instrumentation, lifestyle management, Human development and family relations, Family Resources Management and other relevant areas under the **School of Allied Health Sciences and School of Community Wellness and Lifestyle Management**. The courses on Space law, IPR law, Insolvency and Bankruptcy Law, Marine law, Business Analytics, Agri-Business Management, Sustainability and Growth Management, Digital Transformation are introduced under the present time **School of Management and Law**. The courses on Bio-Physics, Structural Biology, Marine Biology, Physiological Ecology, Bio-Informatics, Anthropology and Neuroscience will be introduced under the **School of Health and Bio-Medical Sciences** to meet the contemporaneous

requirements of the Society. The courses on Energy Conservation, Renewable Energy, Environmental Ecology, Science and Food Policies Research, Politics and Policies for Sustainable development, Conservation of Bio-Diversity, Global Sustainable Development Goals of the UN under the **School of Energy Studies** will make the learners aware of national and global issues to become active promoters of peaceful, secure and sustainable environment and societies.

The School of Indian Knowledge Systems deal with the courses which depict the collective wisdom of ancient India, rooted in spirituality, philosophy, sciences, arts, and social principles. From spiritual and philosophical insights to scientific discoveries, traditional medicine, arts, and social sciences, Indian Knowledge Systems encompass a wide range of disciplines that reflect the depth of human understanding and exploration. The IKS proposes to undertake a wide array of activities in diverse areas so that India can meet its future aspiration of positioning itself as Vishwa Guru, with particular emphasis on education, health, and the environment. The IKS aims to prepare earnest participants for a holistic life leading to the realization of their true potential and liberation of the Self as well.

These knowledge systems continue to inspire and shape various aspects of contemporary life and are a testament to the profound intellectual achievements of India's ancient civilizations. Preserving and promoting these invaluable traditions is essential not only for the preservation of cultural heritage but also for finding holistic solutions to the challenges faced by humanity in the modern world.

The University will also focus on research and innovation by establishing a **Center for Research and Innovations**, a university-wide vehicle for integrating research work across the disciplines in the university for encouraging start-up incubation centers, intellectual property rights, patents, research in frontier technologies, greater industry-academia-government linkages and interdisciplinary and multidisciplinary research approaches.

Being a holistic and multi-disciplinary University, it will create proper ambience for inter-disciplinary thinking, debate, discussion, research and innovation. The Schools, Centers and the flexible Course structures and the state-of-the-art equipment and facilities are so academically designed according to the guidelines of the **NEP 2020** and **CCFUP 2022** as to create new possibilities and opportunities for multi-disciplinary work in the service of mankind and society meeting the **21st Century Strategic Needs of the Country** and also contributing to the **Global Sustainable Development Goals**.

The approach of the proposed Deemed to be University (DU) is to plan and follow up from the beginning stage to the continuous development stage, and then reflect on the Vision and Mission for path correction at important milestones of the journey. A team of eminent academicians and administrators are functioning to effectively commission the University under the directions of Sri M N Raju, Chairman, and Sri M S Ravi Varma, Vice-Chairman of the MNR Educational Trust, which the Sponsoring Body for the proposed DU. The rolling implementation process is described in the following sections.

2. The MNR Educational Trust



The MNR Educational Trust has been serving the education sector through many of its educational institutions in India and abroad for the last five decades firmly believing that the education and health are the two essential factors that enrich the lives of people. Now the Trust wishes to take on the platform of an Institution deemed to be University bringing in enhanced quality in multi-disciplinary higher skill education involving teaching, research and innovation by creating world-class infrastructure and by employing the highly competent teachers to prepare professionals in cutting edge areas that are fast gaining prominence such as Artificial Intelligence, Machine Learning, Big Data Analysis applied to Health Care Education, Energy and Environment, Indian Knowledge Systems, Agriculture, Engineering and Technology, Management and Law, Bio-Medical Sciences and Community Wellness and Lifestyle Management.

(a) Evolution and Growth of MNR Educational Trust (MNRET) in the service of Educational Sector meeting the growing demands of India in general and the Telangana State in particular

The growth of the MNR Group of Institutions, founded by Sri M N Raju, Chairman, has been phenomenal from 1974 to 2023. The first institution established in Hyderabad in the year 1974 was the Indo-English High School with a student strength 695 and the Faculty Strength of 36. From then onwards, there was no looking back for the Group and the number of institutions increased year by year at different locations in and around Hyderabad. Through the formation of the MNR Educational Trust (MNRET) efforts were made to expand the educational activities of the MNR Group not only limited to the State but also beyond the boundaries of the state and the country. With a Vision to meet the educational demands of the increasing population of the Telangana State and the Country, several institutions were established in the later years. The MNRET made an indelible mark in the field of education and health with Sri. M.N.Raju, Founder Chairman & Managing Trustee at the helm of affairs supported by Sri M S Ravi Varma, Vice-Chairman & Trustee, highly qualified Directors, Deans, Principals, Faculty Members and Administrative

Staff. Mr. Raju unable to attend even a primary school in his childhood pursued double post graduate degrees in Arts & Education through non-formal education. With an aim to provide quality and value-based education, Sri Raju established the Trust. “Enriching lives through Education and Health” is the primary objective of the Trust. A CBSE School with the state-of-the-art facilities in Navi Mumbai was started in the year 2008. Schools were established in Sharjah and Dubai, UAE with international standards. As per the needs in the educational sector, MNR Talent and Skill Development Institute and MNR Pre-Primary Teacher Training College were also established in Dubai, UAE. Also, Junior Colleges, Degree Colleges and PG Colleges were established offering UG, PG and Research Programs to take education to the door steps of rural population. The MNRET is presently operating with 73 Institutions, 32824 students, 1641 Faculty members, 13,00,000 sq.ft of built-up area. The Financial turnover has increased from Rs 18.00 Lakhs in 1992 to about Rs 182.00 crores in 2023. With more professional colleges in pipeline in the disciplines of Agriculture, Indian Knowledge Systems, Renewable Energy, Management and Law, Allied Health Sciences, Intelligence and Computing, Lifestyle Management, Health and Bio-Medical Sciences, the Trust is marching ahead to attain the status of a University in the service of educational sector meeting the global educational needs of 21st Century



Manthena American School, Sharjah, U.A.E.



MNR School of Excellence, Navi Mumbai



MNR International School, Navi Mumbai

INTERNATIONAL STUDENTS @ MNR-HERA



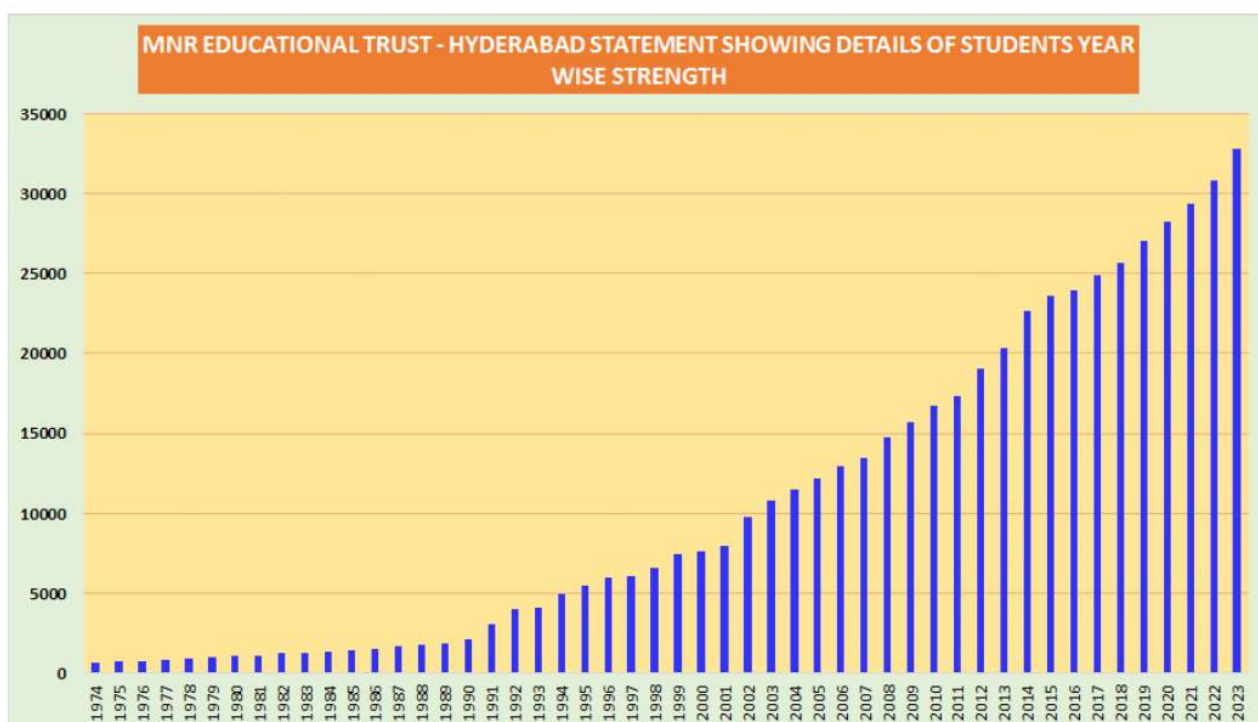
A GALAXY OF EMINENT FACULTY @ MNR-HERA



MNR EDUCATIONAL TRUST - HYDERABAD

STATEMENT SHOWING DETAILS OF STUDENTS YEAR WISE STRENGTH

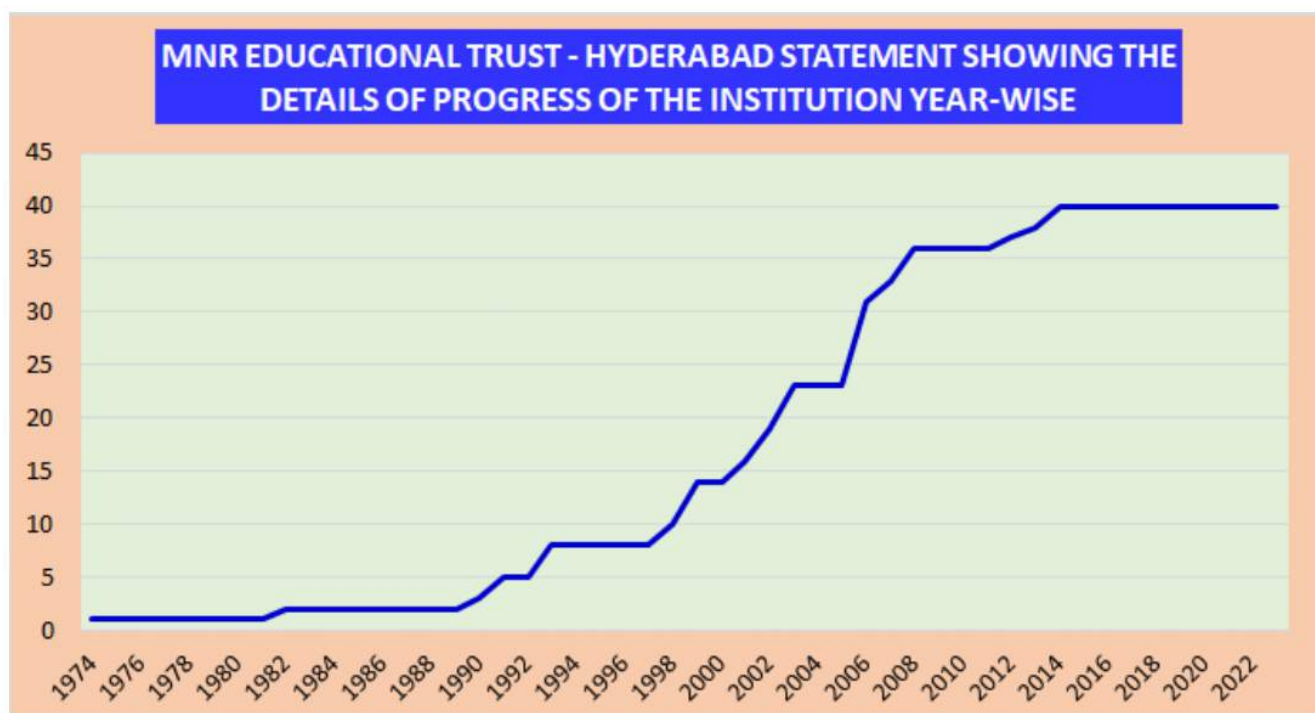
Year	Strength	Year	Strength	Year	Strength
1974	695	1991	3102	2009	15684
1975	723	1992	3987	2010	16754
1976	798	1993	4132	2011	17324
1977	836	1994	4976	2012	19032
1978	902	1995	5476	2013	20322
1979	1023	1996	5987	2014	22704
1980	1096	1997	6102	2015	23614
1981	1131	1998	6576	2016	23953
1982	1246	2000	7616	2017	24932
1983	1298	2001	8016	2018	25684
1984	1376	2002	9764	2019	27044
1985	1427	2003	10796	2020	28266
1986	1526	2004	11476	2021	29336
1987	1687	2005	12204	2022	30850
1988	1756	2006	12984	2023	32824
1989	1902	2007	13456		
1990	2121	2008	14720		



MNR EDUCATIONAL TRUST - HYDERABAD

STATEMENT SHOWING THE DETAILS OF PROGRESS OF THE INSTITUTION YEAR WISE

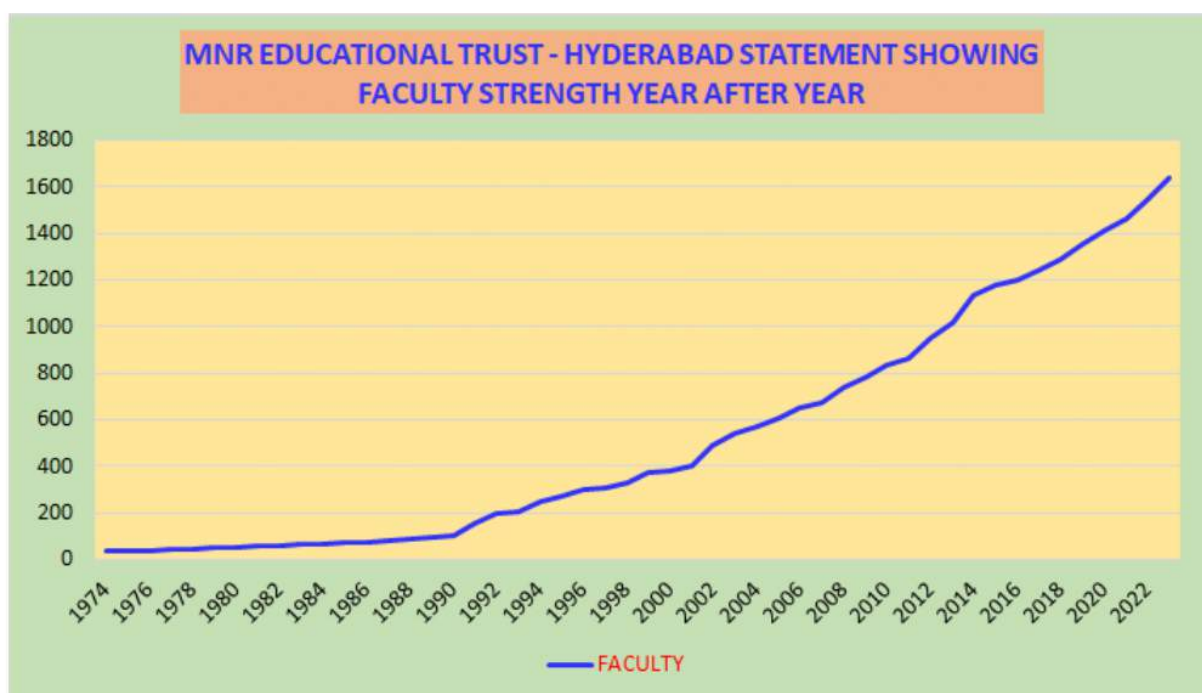
Year	No. Institutions	Year	No. Institutions	Year	No. Institutions
1974	1	1991	5	2008	36
1975	1	1992	5	2009	36
1976	1	1993	8	2010	36
1977	1	1994	8	2011	36
1978	1	1995	8	2012	37
1979	1	1996	8	2013	38
1980	1	1997	8	2014	40
1981	1	1998	10	2015	40
1982	2	1999	14	2016	40
1983	2	2000	14	2017	40
1984	2	2001	16	2018	40
1985	2	2002	19	2019	40
1986	2	2003	23	2020	40
1987	2	2004	23	2021	40
1988	2	2005	23	2022	40
1989	2	2006	31	2023	40
1990	3	2007	33		



MNR EDUCATIONAL TRUST - HYDERABAD

STATEMENT SHOWING FACULTY STRENGTH YEAR AFTER YEAR

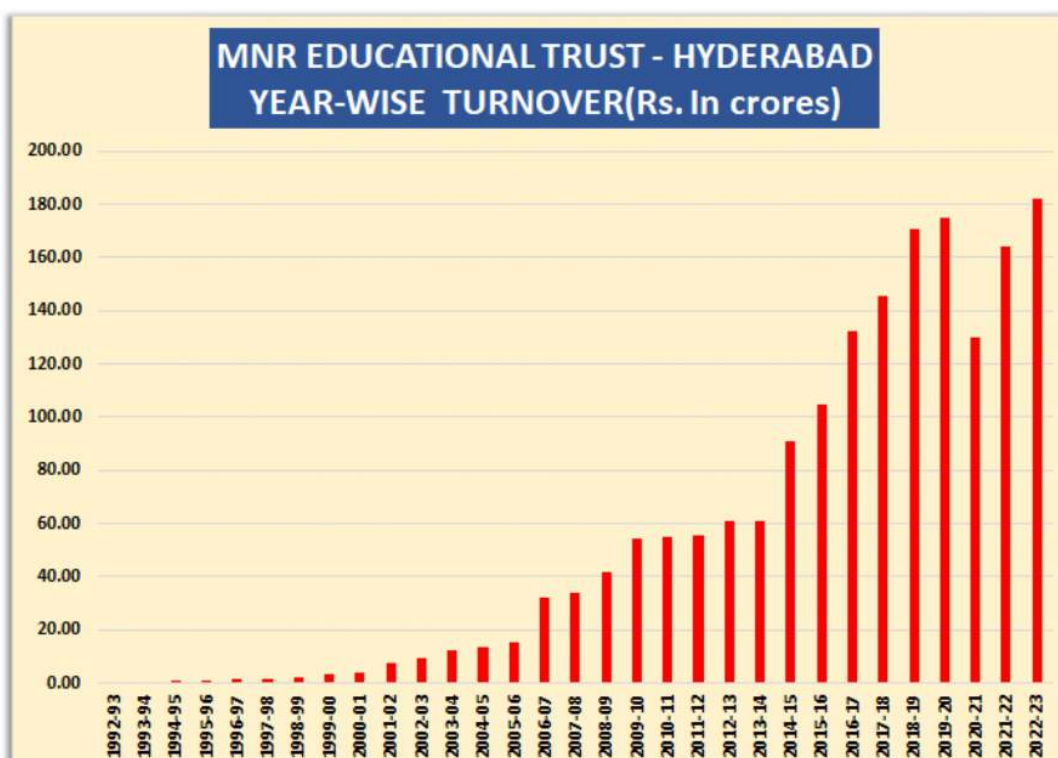
Year	Strength	Year	Strength	Year	Strength
1974	36	1991	155	2008	736
1975	36	1992	199	2009	784
1976	40	1993	207	2010	838
1977	42	1994	249	2011	866
1978	45	1995	274	2012	952
1979	51	1996	299	2013	1016
1980	55	1997	305	2014	1135
1981	57	1998	329	2015	1181
1982	62	1999	373	2016	1198
1983	65	2000	381	2017	1247
1984	69	2001	401	2018	1284
1985	71	2002	488	2019	1352
1986	76	2003	540	2020	1413
1987	84	2004	574	2021	1467
1988	88	2005	610	2022	1543
1989	95	2006	649	2023	1641
1990	106	2007	673		



MNR EDUCATIONAL TRUST - HYDERABAD

YEAR WISE TURNOVER

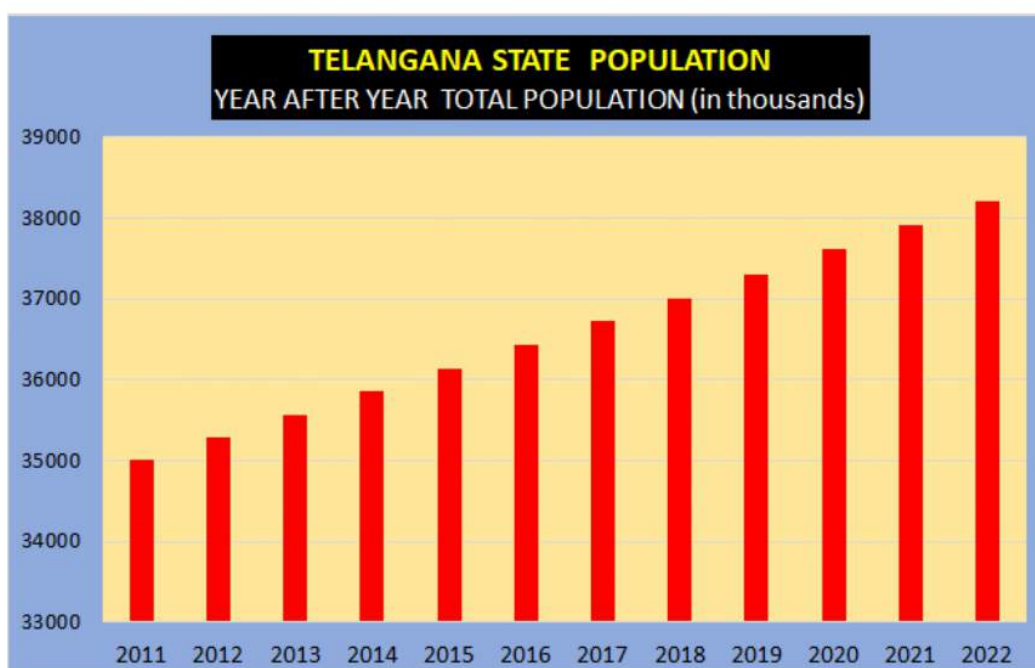
Financial Year	Turnover (Rs. In Crores)	Financial Year	Turnover (Rs. In Crores)	Financial Year	Turnover (Rs. In Crores)
1992-93	0.00	2002-03	9.41	2013-14	61.21
1993-94	0.21	2003-04	12.51	2014-15	90.85
1994-95	0.77	2004-05	13.30	2015-16	104.58
1995-96	1.06	2005-06	15.14	2016-17	132.65
1996-97	1.32	2006-07	32.35	2017-18	145.81
1997-98	1.69	2007-08	34.04	2018-19	170.52
1998-99	2.36	2008-09	41.65	2019-20	174.73
1999-00	3.47	2009-10	54.20	2020-21	129.87
2000-01	4.17	2010-11	55.00	2021-22	164.29
2001-02	7.26	2011-12	55.70	2022-23	182.01
		2012-13	60.76		



TELANGANA STATE POPULATION YEAR AFTER YEAR

YEAR WISE POPULATION

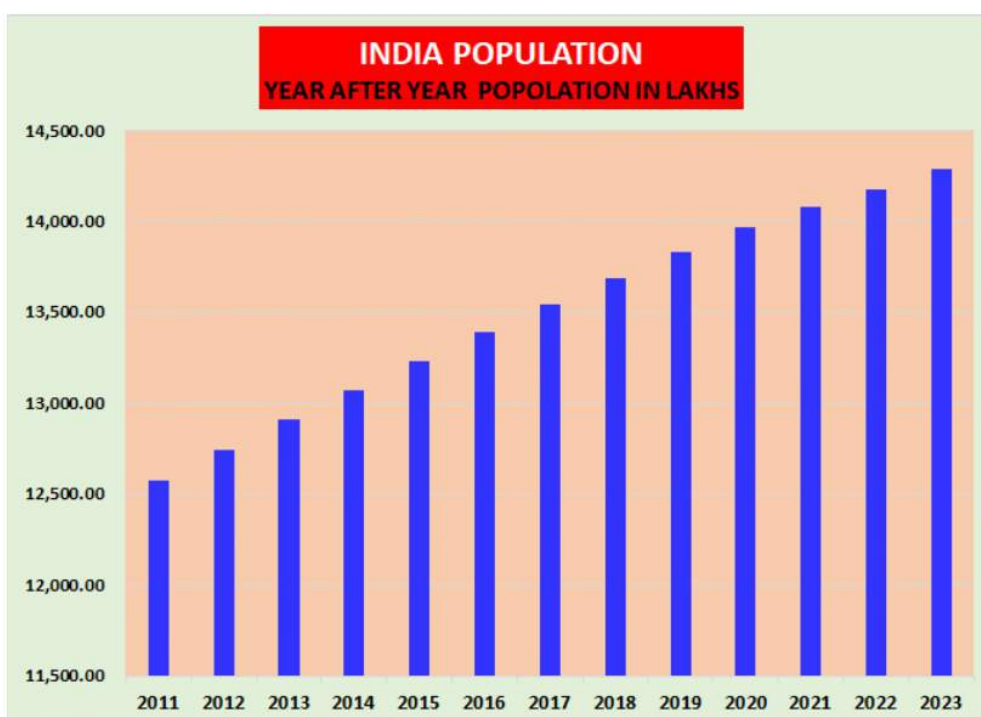
YEAR	TOTAL POPULATION (In Thousands)
2011	35004
2012	35284
2013	35566
2014	35851
2015	36138
2016	36427
2017	36718
2018	37012
2019	37308
2020	37606
2021	37907
2022	38211



INDIA POPULATION YEAR AFTER YEAR

YEAR WISE POPULATION

YEAR	TOTAL POPULATION (In Lakhs)
2011	12,576.21
2012	12,744.87
2013	12,911.32
2014	13,072.47
2015	13,228.67
2016	13,386.36
2017	13,541.96
2018	13,690.03
2019	13,831.12
2020	13,963.87
2021	14,075.64
2022	14,171.73
2023	14,286.28



(b) Available Academic and Physical Infrastructure of the Existing Institutions of the Trust

The MNR Higher Education and Research Academy (MNR-HERA), an off-shoot of MNR Educational Trust, is a 110 acre lush green campus located at Sangareddy, Gr. Hyderabad and organized by the Trust with more than 12,00,000 sft. of built-up area and all modern amenities. The campus houses premier higher education institutions offering Diploma, UG, PG & Ph.D. courses in the field of Medicine, Dentistry, Homoeopathy, Physiotherapy, Nursing, Pharmacy, Engineering & Technology, Arts, Science & Education. It is one among the largest private educational campuses in the states of Telangana and Andhra Pradesh that houses the following eight (8) varied professional colleges in a single campus.

MNR Medical College & Hospital



- Establishment of MNR Medical College and Hospital : 1999-2000
- Commencement of First Under Graduate Program (MBBS): 2001-2002
- It is affiliated with the KNR University of Health Sciences and is recognized by the National Medical Commission (NMC), Govt. of India.
- Medical College Infrastructure: 5 Floors, Total Area: 19102.56 Sq.m
- Hospital Infrastructure: 5 Floors, Total Area: 24957.54 Sq.m
- Accredited by NAAC (with “A” grade)
- Airy and spacious lecture galleries
- State-of-the-art Laboratories:
 - Anatomy
 - Physiology
 - Bio-Chemistry



- Microbiology
- Pharmacology
- Forensic Medicine
- Community Medicine
- Pathology
- Central Research Lab
- Skill Lab
- Excellent Demo rooms
- Has attached 760 bedded teaching hospital
- Around 220 doctors work round the clock and provide free quality health care services to the rural masses
- UG – 150 seats & PG – 93 seats
- Full-fledged Research & Innovation center
- Has 24-hour Casualty and Trauma Department
- Out Patient Departments: General Medicine, Surgery, Orthopedics, Gynecology, Pediatrics, Ophthalmology, ENT, Radiology, Dermatology, Psychiatry, Anaesthesia, Gastroenterology, Cardiology, Urology, Neurology and TB & Chest.
- Operation Theatre Complex: 9 Major and 3 minor Operation Theatres.
- Facilities include a Central Clinical Laboratory, Blood Bank, Radiology Center, Community Care & Rural Health Care Centers, Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls
- ISO certification
- NABH accreditation for Virology Lab
- NABH accreditation under process





MNR Dental College & Hospital



- Established in the year 2006
- Recognized by the Dental Council of India in 2011
- Infrastructure: 4 Floors, Total Area: 18683.64 Sq.m
- Accredited by NAAC (with “B++” grade)
- Has attached 220 units dental hospital
- Around 120 doctors provide free dental care services to the rural masses
- UG – 100 seats & PG – 24 seats
- State-of-the-art Laboratories:

- Dental Anatomy & Dental Histology
- Pre-clinical Prosthodontics
- Pre-clinical conservative
- Ceramic
- Orthodontic
- Pedodontics
- Radiology
- Histopathology



- Specialties: Oral Medicine & Radiology, Oral and Maxillofacial Surgery, Prosthodontics and Crown & Bridge, Conservative and Endodontics, Periodontology and Oral Implantology, Orthodontics and Dentofacial Orthopedics, Pedodontics and Preventive Dentistry, and Oral pathology and Microbiology.
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.

MNR Homoeopathic Medical College & Hospital



- Established in the year 2006
- Recognized by the Dental Council of India in 2011
- Infrastructure: 4 Floors, Total Area: 18683.64 Sq.m
- Accredited by NAAC (with “B++” grade)
- Has attached 220 units dental hospital
- Around 120 doctors provide free dental care services to the rural masses
- UG – 100 seats & PG – 24 seats
- State-of-the-art Laboratories:
 - Dental Anatomy & Dental Histology
 - Pre-clinical Prosthodontics
 - Pre-clinical conservative
 - Ceramic
 - Orthodontic
 - Pedodontics
 - Radiology
 - Histopathology
- Specialties: Oral Medicine & Radiology, Oral and Maxillofacial Surgery, Prosthodontics and Crown & Bridge, Conservative and Endodontics, Periodontology and Oral Implantology, Orthodontics and Dentofacial Orthopedics, Pedodontics and Preventive Dentistry, and Oral pathology and Microbiology.
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.



MNR College of Pharmacy



- Established in the year 2004
- Recognized by the Pharmacy Council of India (PCI)
- Permanently affiliated to the Osmania University for the B. Pharm, M. Pharm, Pharm D and Post Baccalaureate.
- approved by Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA)
- Infrastructure: 4 Floors, Total Area: 6766.02 Sq.m
- 64 highly qualified faculty members (more than 40% Ph.D's.)
- Offers B. Pharmacy (100 seats); Pharm-D (30 seats); Pharm-D (PB) (10 seats); M. Pharmacy (45 seats) & Ph.D. courses.
- Departments: Pharmaceutical Chemistry, Pharmaceutics, Pharmacology, Pharmacognosy, Pharmaceutical analysis, and Pharmacy Practice.
- State-of-the-art Laboratories:
 - Pharmaceutical chemistry lab
 - Pharmaceutics lab
 - The industrial pharmacy lab
 - Pharmacology lab
 - Pharmacognosy lab
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.



MNR Sanjeevani College of Physiotherapy & Hospital



- Established in the year 1999
- Infrastructure: 4 Floors, Total Area: 3186.01 Sq.m
- Providing free physiotherapy care services with 24 faculty members.
- Offers BPT (50 seats) & MPT (24 seats) courses.
- The Physiotherapy OPD located in MNR Hospital provides the following services:
 - Ultra sound therapy
 - Traction
 - SWD (Shortwave Diathermy)
 - Exercise bicycle
 - TENS (Transcutaneous Electrical Nerve Stimulation)
 - Tread mill
 - IFT (Interferential Therapy)
 - Portable sports PT equipment
 - Hydrocollator packs
 - Massage
 - Paraffin wax therapy
 - Manual Therapy
- Laboratories:
 - Kinesio Therapeutics (Exercise Therapy)
 - Electro Therapy.
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.



MNR College & School of Nursing



- Established in the year 2002
- Recognized by Indian Nursing Council and affiliated to Dr.NTR University of health sciences Vijayawada and Kaloji Narayana Rao University Warangal.
- Infrastructure: 4 Floors, Total Area: 3232.52 Sq.m
- Highly qualified teaching staff to train the students. Clinical training at attached MNR Medical College & Hospital
- Offers B.Sc.(N) (100 seats); M.Sc.(N) (40 seats); Diploma in Nursing (40 seats) courses.
- Departments: Nursing administration and education, Obstetrics & gynaecological nursing, Psychiatry nursing, Community health nursing, Child health nursing, Medical surgical nursing, Nursing research, and Fundamentals of nursing.
- Laboratories:
 - Nursing Foundation
 - Maternity and Child Health
 - Community Health Nursing
 - Medical Surgical Nursing
 - Nutrition
 - Audio visual and computer.
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.



MNR College of Engineering & Technology



- Established in the year 2008
- It is affiliated to Jawaharlal Nehru Technological University (JNTUH), Hyderabad, Telangana State and approved by the All India Council for Technical Education (AICTE) Govt. of India.
- Infrastructure: 4 Floors, Total Area: 9558.03 Sq.m
- Highly qualified teaching staff (with more than 30% Ph.D.'s)
- Departments and Laboratory Facilities:

1. Computer Science & Engineering (CSE)

- C & Data Structures Lab
- IT Workshop
- UNIX-Shell Programming Lab
- Advanced Data Structures (C++) Lab
- Object Oriented Programming (Java) Lab
- Database Management Systems (Oracle) Lab
- Unified Modeling (UML) Lab
- Computer Networks (CN) Lab



2. Electronics & Communication Engineering (ECE)

- Electronic Circuits Hardware Lab
- Electronic Circuits Software Simulation lab with latest Multisim V10 Simulation Software

- Electrical Technology Lab
- Pulse and Digital Circuits Lab
- Analog Communications lab
- IC Applications Lab
- Digital Communications Lab
- ECAD Lab
- Microprocessors & Interfacing Lab



3. Mechanical Engineering

- CAD/CAM lab
- Fluid Mechanics and Hydraulic Machinery Lab
- Engineering Mechanics Lab
- Engineering Workshop Practice
- Heat Transfer Lab
- Instrumentation Lab
- Metallurgy Lab
- Metrology Lab
- Mechanics of Solids Lab
- Machine Tools Lab
- Production Technology Lab
- Thermal Engineering Lab
- Computational Methods Lab
- Thermal Engineering lab
- Computational Methods Lab
- Kinematics & Dynamics Lab
- Simulation & Precision Engineering Lab



- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.

MNR College of Education



- It is affiliated to Osmania University, Hyderabad.
- Infrastructure: 3 Floors, Total Area: 2861.45 Sq.m
- Highly qualified teaching staff (with more than 20% Ph.D.'s)
- Offers B.Ed; M.Ed; & D.Ed courses
- Facilities include a Digital Central Library, Auditorium, Gymnasium, Playground and Excellent Hostels separately for Boys & Girls.

MNR-CART (Centre Aiming Rural Transformation)

The MNR-CART is a voluntary organization established by the Trust and inaugurated by the then Hon'ble President of India Sri Abdul Kalam ji. The MNR-CART provides training to rural women, farmers and youth who are at the bottom of the socio-economic pyramid and offers various skill enhancement and job oriented courses that empower rural population and thereby help in rural transformation for enhancing the employability of rural youth.

Administrative Block

- Infrastructure: 2 Floors, Total Area: 2337.55 Sq.m



MNR Foundation for Research & Innovations

The Trust has established a Foundation for Research & Innovation which has been focusing on research for understanding disease biology and biomedical sciences processing the knowledge for better management and potential therapeutics

1. Existing Research Projects

- a. **Funding Agency:** The IKS Division of Ministry of Education@AICTE, Govt. of India.
Research Projects: Remodeling Technology Integrated Validation of Ayurveda Jihva: Corroborating Saam Jivha Pariksha to Multiple Biomarker Detection Using Point of Care Paper-based Device.
- b. **Funding Agency:** DST SERB Start-up Research Grant (SERB-SRG), Govt. of India, Science and Engineering Research Board (SERB) File Number: SRG/2022/000576.
Research Projects: Nanoparticle Enthused Point of Care, Assay Device Aiming Simultaneous Detection and Severity Status of Acute Pancreatitis.
- c. Development of a Paper-based fluidic device as a low-cost diagnostic tool (Seed funding from MNR Educational Trust).
- d. Submitted the details required for ICMR multi-centric project on Stillbirth.

2. Possible Funding under Process

- a. **Funding Agency:** Department of Biotechnology (DBT), Govt. of India
Project Title: Modest Technology Integrated, Precise, Easy, & Quantitative Disposable Point of Care Paper-Based Hemoglobin Sensor for Predicting Anemia [BT/PR50201/PFN/20/1641/2023].
- b. **Funding Agency:** CSIR (Women Scientist Scheme), Govt. of India.
Project Title: Multiplex Biomarker Inspired Novel & Innovative Technology Integrated Detection of Ectopic Pregnancy Beyond the State-of-the-Art of Lateral Flow Assay

MNR Knowledge Centre (Central Library)



- The campus has a well-equipped Central Library also known as MNR Knowledge Center.
- Infrastructure: 2 Floors, Total Area: 3685 Sq.m
- The Library has over 38,575 volumes (Medical, Dental, Physiotherapy, Homoeopathy, and other related General books) classified textbooks, reference books with group study area for graduate and post-graduate students, and a separate study area for faculty.
- The library caters to the information needs of approximately 1150 users of MNR Campus, providing access to various international and national journals of different specialties.
- MNR subscribes to 325 National & International journals and also 1225 e-journals and 487 e-books and other medical-related e-resources.
- The library also has a huge collection of educational CDs, audio, and videos providing vast information on every aspect of human illness and treatment procedures.
- It has a separate Virtual classroom with 120 seating capacity for conducting several academic activities, guest lectures and video conferences
- Along with all these facilities, a separate IT zone is provided for accessing e-resources with 40 nodes and a high-speed Wi-Fi facility.



MNR Auditorium



- The campus has a fully air-conditioned auditorium where symposiums, conventions, conferences, and various events are hosted by different specialties. Additionally, the auditorium is the venue for the annual day celebrations and convocation ceremonies of all the institutions every year.
- Infrastructure: Total Area: 1400.16 Sq.m

Staff Quarters

- Infrastructure: 7 Blocks, Each Block with 4 Floors, Total Area: 5103.52 Sq.m



Boys Hostel

- Infrastructure: 1 Boys Hostel with 4 Floors, Total Area: 6173.12 Sq.m



Girls Hostel

- Infrastructure: 3 Girls Hostels, Each Hostel with 4 Floors, Total Area: 13685.65 Sq.m

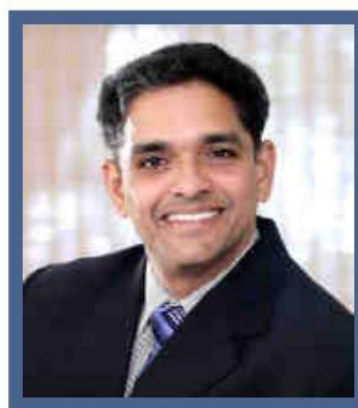


3. Constitution of the Sponsoring Body

- (a) MNR Educational Trust is the Sponsoring Body of the Institution deemed to be University and will take all appropriate measures for creating right environment and conditions in the University so as to enable various stakeholders to make greater contribution to the cause of higher education by the University. The Sponsoring Body shall be responsible for steady and continuous enhancement of the status and quality of the University education. The Sponsoring Body shall share its vision, experience and thoughts in furthering the interests of the higher education. The Sponsoring Body consists of



Sri M N Raju
Chairman and Managing Trustee



Sri M S Ravi Varma
Vice-Chairman and Trustee and Secretary

Sri M N Raju, Chairman, MNRET

The dawn of August 15, 1974 not only welcomed the 27th anniversary of Indian independence but also marked the beginning of a new chapter in the annals of education in the state of Telangana. This eventful day saw the forming of MNR Educational Trust, founded by Sri. M.N. Raju, Chairman of MNR Educational Group, who conceived the idea of network of MNR institutions for a broader cause. Sri M N Raju is a great visionary idealist and could think ahead of his times always. He is the guiding and motivating force that inspires the dedicated staff members and the ever growing number of the student community. The philosophy of Sri M.N. Raju reminds everyone of the preaching of Swami Vivekananda that one should always pray God for two things only, the first one Health and the second one Courage to face any kind of challenge and turbulent time in one's life. Undoubtedly, he believes that the Courage comes from Education. The rich and varied experience of Sri M N Raju has helped the group to evolve a unique student-centric teaching approach, which transforms the students into competent future professionals and lead a successful career.

In all these years, MNR Educational group has made an indelible mark in the education scenario with Sri M N Raju at the helm of affairs and the rock like support of Mr. M S Ravi Varma who has taken initiatives, accepted challenges and has given this nation a modern Takshashila imparting value education.

Awards Received

- Best Teacher Award – 1972.
- ANR Life Time Achievement Award – 2012.
- Outstanding Educational Achievement Award – 2014 from International Biographical Centre, Cambridge England for Enriching Lives through Education.
- Eminent Educationist from the Indus Foundation Inc, New Jersey, USA.
- Best Management Award 4 times since 1981.
- ANR The Eminent Educationist Award – 2014.

The Books Written and Got Published

- The Billion Heartbeats.
- The Billion Heartbeats of a Question.

Life Member

- Educational Promotion Society of India (EPSI), New Delhi.

Sri MS Ravi Varma, Vice Chairman, MNRET

The young Vice Chairman of the Trust is accelerating the growth of the Institution with his great passion and actuary skill. As a mentor he has imbibed the legacy of Sri M N Raju and is working for the all-round development of MNR Educational Trust. Armed with optimism and a pragmatic growth approach, he believes that Technology and Systems will play an integral part in shaping the future of the Trust. He is redefining the etiquette of quality education with an indomitable team spirit. For students, he is a pacemaker with a hallmarked practice of teaching and learning processes. He embraces the welfare and promotion of the Trust with a wise and objective outlook. He is known for his innovative and exemplary skills.

- (b) The Sponsoring Body may act through any person(s) nominated by it, as may be deemed fit and proper for discharge of its functions regarding the matters of the Institution deemed to be university
- (c) The MNR Educational Trust is a not for profit Organization registered under Indian Trust Act, No 94/92 Dated 22.1.1992: having its registered office at MNR Educational Trust, 2-23/350, Bhagyanagar (Phase III) , Near HMT Hills, Opp. JNTU, Kukatpally, Hyderabad – 500085, Telangana

4. Aims and Objectives of the Sponsoring Body

MNR Educational Trust, the Sponsoring Body for the Institution proposed to be deemed to be University, was established basically with a primary aim of enriching lives through education and health. The legacy of the Trust is built on a student-centric approach that involves honing their innate skills and addressing their psychological and spiritual needs. The dawn of 15th August 1974 not only heralded the 27th anniversary of India's independence but also marked the beginning of a new chapter within the annals of India's education in the state of Telangana. The day saw the birth of MNR Educational Trust founded by Sri M. N. Raju, Chairman of MNR Educational Group. Mr. Raju unable to attend even a primary school in his childhood pursued double post graduate degrees in Arts and Education through non-formal education. The Trust started its journey by establishing its first institution, a tiny primary school with just 36 students in the year 1974 at Hyderabad. During the past 49 years, the Trust grew into a leading educational service provider in south India. Today, the Trust governs 42 institutions with around 39,000 students and around 1,800 faculty members offering courses from primary education to post graduation and research in Telangana, Maharashtra, Dubai and Sharjah, UAE. The tenacity of Sri Raju, who believed that the education and health are the two important factors that enrich lives of individuals, has led to the establishment of a school initially, then a group of educational institutions and presently the MNR Educational Trust in the past five decades. The Trust made an indelible mark in the field of education and health with Sri. M.N.Raju, Founder Chairman and Managing Trustee at the helm of affairs supported by Sri M S Ravi Varma, Vice-Chairman and Trustee, highly qualified Directors, Deans, Principals, Faculty Members and Administrative Staff.

With an aim to provide quality and value based higher education, the Trust established the MNR Higher Education and Research Academy (MNR-HERA) in the year 2000. The Academy is a 110 acre lush green campus located at Sangareddy, Gr. Hyderabad with more than 12,00,000 sft. of built-up area and all modern amenities. The campus houses premier higher education institutions offering Diploma, UG, PG and Ph.D. courses in the fields of Medicine, Dentistry, Homoeopathy, Physiotherapy, Nursing, Pharmacy, Engineering & Technology, Arts, Sciences and Education. It is one of the largest private educational campuses in the states of Telangana and Andhra Pradesh that houses eight various professional colleges in a single campus.

As the World progresses towards cutting edge technologies that are fast gaining prominence such as Artificial Intelligence, Additive Manufacturing, Machine Learning and Mechatronics, the Trust also believes that these technologies play an important role and they should be integrated with Medical, Health care, Agriculture, Management and Legal education combined with Social sciences and accordingly the Trust is in the process of revisiting its educational programs and commencing new courses. The Trust has been working with the following Aims and Objectives.

AIMS

- The main aim of the Trust has been “Enriching Lives of Individuals through Education and Health” with character, ethical Values, intellectual curiosity for a better way of life and spirit of service to the Society.
- To be at the forefront in education sector providing quality and values-based education with special emphasis on research, creativity and entrepreneurship and thereby contributing to the overall development of the future generations and the Society at large.
- To serve the under privileged and the weaker sections of the community in rural areas by creating socially responsible, competent and empathetic members of the Society.
- To attain the status of a Deemed to be University under “Distinct Category” for the MNR-HERA, an Institution starting from the beginning with the focus on teaching and research in the unique disciplines and to make it 21st Century futuristic World class Skill University ever meeting the contemporaneous strategic needs of the country and contributing to the SDGs by making the curriculum of all the courses skill oriented by imparting practical skills, hands-on-training, internship and soft skills to the individuals to enhance the employability of the students.
- To transform the Institution into a Model Holistic and Multi-Disciplinary Education and Research University in private sector, over a period of time, with proper ambience for inter-disciplinary thinking, research, debate, discussion and innovation in true spirit of the transformative initiatives of National Education Policy (NEP 2020) to offer value-based education to develop individuals with ethical creativity, character, scientific temper, intellectual curiosity and spirit of service to the Society.

OBJECTIVES

1. To evolve into a Higher Educational Institution of University status imparting high-quality education and training across the fields of Indian Knowledge Systems, Skill Education, Engineering and Technology, Healthcare, Technology-Led Agriculture, Legal and Management Studies, to enrich lives with a special focus on research and development with interdisciplinary thinking, debate, discussion, and innovation.
2. To be globally recognized as student-centric and synonymous with quality education and competence in various fields to produce successful professionals to meet the requirements of 21st century.
3. To prepare professionals in cutting edge technologies that are fast gaining prominence now, such as Artificial Intelligence, Machine Learning, Additive Manufacturing, Mechatronics, Biotechnology with important applications to Health, Environment, Medicine and Pharmacy, Green Energy, Agriculture, Biotechnology, Lifestyle Management and Sustainable Living.

4. To promote research and development and shape the students by honing their innate skills so that they have the ability and readiness to develop entrepreneurship by setting up start-up incubation centers in the areas of frontier technologies.
5. To instill much-required millennial skills of constructive public engagement and economic independence.
6. To provide excellent state-of-the-art infrastructure, laboratories, workshops, libraries, research centers to develop research bent of mind to address all contemporaneous researchable issues.
7. To encourage teaching programs involving value-added, ability and skill enhancement courses in all institutions to ensure development of capabilities across a range of disciplines needed for multi disciplinary and stimulating learning environment.
8. To encourage teacher education towards holistic and multi disciplinary education and constant updating of content and pedagogy.

The MNR Educational Trust is now working towards more Holistic and Multidisciplinary Education with the true spirit of the National Education Policy (NEP) 2020. It wishes to apply to UGC for Deemed to be University starting from the beginning under ‘distinct category’ as per the UGC (Institutions deemed to be Universities) Regulations, 2023 under the name and style of MNR Higher Education and Research Academy (MNR-HERA), situated at Sangareddy, Gr. Hyderabad, Telangana State. Teaching and Research in the following unique disciplines addressing the strategic needs of the country being proposed.

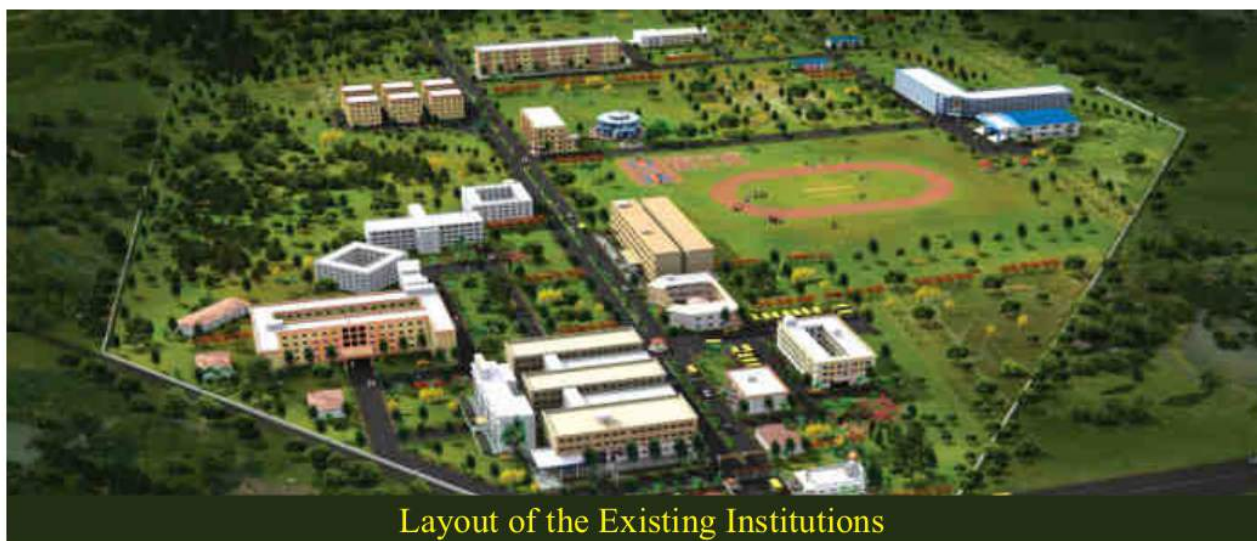
- Intelligence and Computing
- Indian Knowledge systems
- Technology-led Agriculture
- Languages and Cultural Heritage
- Artificial Intelligence in Health and Life sciences
- Community Wellness and Social Sciences
- Mechatronics in Health and Agriculture
- Legal and Intellectual Property Rights for Indigenous Technologies
- Technology Use and Integration

5. Concept of the Institution Proposed to be Deemed to be University under distinct category

The proposed Institution deemed to be university is an institution starting from very beginning with the focus on teaching or research in the unique disciplines involving technology integration, addressing the strategic needs of the country, preservation of Indian knowledge systems, cultural heritage, and knowledge of many arts, preservation of the environment, dedication to skill development and promotion of Indian languages.

While all requirements and eligibility criteria are fulfilled by the sponsoring body, the application is submitted through the Commission's portal for setting up a new institution deemed to be university at the main campus of MNR-HERA Campus at Fasalwadi, Sangareddy District, Gr Hyderabad, Telangana. The Sponsoring Body (MNR Educational Trust) founded by Sri MN Raju, was established with a philanthropic aim and vision proclamation echoes it's steadfastness to be at the forefront of providing quality education to enrich lives that eventually shape our nation's future. It also envisions serving humanity by creating socially responsible, competent, and empathetic members of society for societal development.

In compliance with the UGC regulations, the proposed institution under this category shall start its operations with more than five academic programmes as combination of UG, PG and Ph D programmes as detailed under Items No 10 and 12 of this report with physical and academic infrastructure as per the norms of the relevant statutory bodies or the Commission as the case may be. The proposed new schools and courses shall have back up from the available infrastructure of the existing old institutions namely engineering and technology, medical, dental, pharmacy, physiotherapy, nursing, knowledge center. The deemed to be university envisages exhaustive implementation plan for all the provisions of the NEP 2020 explained in the subsequent and other sections in this report for Holistic and Multi-Disciplinary Higher Education to develop well-rounded individuals with all critical 21st Century capabilities of intellectual, aesthetic, social, physical, emotional and moral in an integrated manner combined with capacities in fields across the humanities, social sciences, technical, legal, agriculture and healthcare education.



6. Vision, Mission and Core Values



- To enable students to have access to a ‘world-class, futuristic University’ and to provide a holistic environment to impart knowledge and skill-sets to face Global challenges in future.
- To dedicate facilities and educate by giving special emphasis to education, research, creativity and entrepreneurship and thereby contributing to the overall development of the future generation and society at large.



- To enrich lives by delivering premium healthcare through application of innovational knowledge and pioneering technologies and tools.
- To increase Employability Potential of Higher Education Programmes combined with Dual Degrees, Twinning Programmes, Vocational Courses, Multiple Entry and Exit Options in compliance with National Education Policy (NEP) 2020 and CCFUP 2022 of UGC Guidelines
- To establish as a Multi-Institutional and Multi-Disciplinary Education and Research University in a phased manner
- To supplement the Conventional Research Approaches by the Multi-Disciplinary Cutting Edge Technologies meeting the 21st Century Global Requirements
- To developing Character, Ethical Values, Intellectual Curiosity and Spirit of Service for a better Way of Life
- To updating educators through constant updating of Content and Pedagogy as part of Teacher Education



- Creativity and Innovation
- Holistic, Multi-disciplinary and Skillful Education
- Spirit of Service & Dedication
- Setting Goals and Way of Life
- Personal Accomplishment and Enlightenment
- Honesty and Integrity
- Empathy & Compassion

The approach of the proposed Deemed to be University (DTBU) is to plan and follow up from the beginning stage to the continuous development stage, and then reflect on the Vision and Mission for path correction at important milestones of the journey. A team of eminent academicians and administrators are functioning to effectively commission the University under the directions of Sri M N Raju, Chairman, and Sri M S Ravi Varma, Vice-Chairman of the MNR Educational Trust, which is the Sponsoring Body for the proposed DTBU. The rolling implementation process is described in the subsequent Sections of the DPR.

7. Strengths, Weaknesses, Opportunities and Challenges



A visionary and strategic approach, coupled with dedicated leadership, commitment to academic excellence, and a focus on student success, will be instrumental in establishing the proposed DTBU that excels in providing high-quality education, fostering cutting-edge research, and making a positive impact on society.

A) Strengths

- (i) **Vision and Mission of the MNR Educational Trust has been to impart quality education to students in all its educational institutions**
- (ii) **Expertise in achieving Academic Excellence in Education Sector for 5 decades**
 - MNR having started its revolution in education with a School in 1974, has now become synonymous for quality education with 42 institutions and Hospitals imparting education from “KG to PG” and is one of the rapidly developing educational groups in South India offering diversified courses.
 - **Unique Multidisciplinary Campus:** MNR Higher Education and Research Academy (MNR-HERA) campus at Sangareddy being house of all wings of professional education namely technical education, medical and healthcare education having NAAC Accredited Medical, Dental, Pharmacy, Engineering and Technology, Homoeopathy, Physiotherapy and Nursing colleges in one campus.
- (iii) **Scope for Interdisciplinary/multidisciplinary education in one campus with a focus on holistic and comprehensive learning**
 - To enable students to have access to a ‘world-class, futuristic University’ and to provide a holistic environment to impart knowledge and skill-sets to face Global challenges in future.
 - To dedicate facilities and educate by giving special emphasis to education, research, creativity and entrepreneurship and thereby contributing to the overall development of the future generation and society at large.
 - To enrich lives by delivering premium healthcare through application of innovational knowledge and pioneering technologies and tools.
 - To increase Employability Potential of Higher Education Programmes combined with Dual Degrees, Twinning Programmes, Vocational Courses, Multiple Entry and Exit Options in compliance with National Education Policy (NEP) 2020 Guidelines
 - To establish as a Multi-Institutional and Multi-Disciplinary Education and Research University in a phased manner

- To supplement the Conventional Research Approaches by the Multi-Disciplinary Cutting Edge Technologies meeting the 21st Century Global Requirements.
- To develop Character, Ethical Values, Intellectual Curiosity and Spirit of Service for a better Way of Life.
- To updating educators through constant updating of Content and Pedagogy.

(iv) Visionary Leadership and Governance :

- A strong and visionary leadership team with a clear mission and purpose is a significant strength, guiding the university towards its long-term goals.
- MNR – HERA campus was established with a vision to implement the goals and objectives set by Sri MN Raju, Chairman, and Sri M S Ravi Varma, Vice-Chairman, to enrich the living conditions of the general public in general and poor and downtrodden people in particular through education and health in the state.
- Evident from the phenomenal growth from 1974 to 2023 in educational institutions both qualitatively and quantitatively

(v) Financial Stability and Sustainability

The MNR Educational Trust has been a successful organization not only as an education provider but also in terms of financial stability and future sustainability. The Trust is a non-profit organization with social commitment and it has invested surplus funds for further growth and expansion of educational activities only in India as evident from the continuous growth of institutions in the last 49 years. In view of its financial stability as is evident from the ever rising growth in annual turnover from Rs 0.21 crores to Rs 182.00 crores in the last 20 years (Section 2 (a)), it possesses all the required risk absorption capacity under any situation. It has all the capacity to generate and sustain the revenue and expenditure if MNR-HERA is granted the Deemed to be University status by UGC and it will comply with all the rules and regulations as prescribed by UGC.

(vi) Diversity of Curriculum:

- Innovative Academic Programs are unique and specialized academic programs that cater to emerging fields and industry demands.
- The ability to design and implement an innovative and relevant curriculum that aligns with industry needs and emerging trends can attract students and faculty.
- Well-designed outcome-based curricula address global needs, provide flexibility through CBCS (Choice Based Credit System), enhance student employability, and inculcate human values.

(vii) Proximity to Country's Premier HEIs/Universities/Research Organisations :

- The Institution proposed to be Deemed to be University is very close (adjacent) to IIT, Hyderabad with possibilities of strategic alliance in teaching and research.
- Premier institutions like IIIT, Indian School of Business (ISB), CCMB, NIPER and several ICAR Institutions.
- The ability to design and implement an innovative and relevant curriculum that aligns with industry needs and emerging trends can attract students and faculty.
- The Campus is close to the Shamshabad International Airport which will facilitate preference by international Faculty to have collaborations. Also well connected by Road and Rail with all major cities in India.
- Well-designed outcome-based curricula address global needs, provide flexibility through CBCS (Choice Based Credit System), enhance student employability, and inculcate human values.

(viii) Hyderabad Pharma City

The Hyderabad Pharma City (HPC), is a large pharmaceuticals industrial park being established in Hyderabad. It will be the world's largest project of its nature. The Park is an initiative of the Government of Telangana and was announced with on 24 March 2018. HPC is 20 km away from Hyderabad City. Hyderabad is India's sixth-largest city has advantages of its location and has rail, road, and aviation connections to all of Domestic and international main cities. Hyderabad offers a globally competitive research ecosystem that is backed up by state-of-the-art infrastructure.



Several Techno-townships, Hardware Parks, Software Parks, and Industrial Promotion Parks can be viewed around the city. The State is developing the Hyderabad Pharma City as a world class sustainable industrial cluster. The pharma city will have complete infrastructure for exporters with the end-to-end facilities.

Hyderabad - Life Science Capital of India

- **Bulk Drug Capital of India:** Hyderabad is ranked first in bulk drug manufacture and third in pharmaceutical formulations in India. It provides 40% of Indian bulk drug output and 50% of bulk drug export market.
- **Global Vaccine Hub:** Hyderabad is also known for the Vaccine production, 33% of the global vaccine is produced.
- **Pharma Hub:** Hyderabad has more than 200 pharmaceutical companies, including Dr. Reddy's Laboratories, Aurobindo Pharmaceuticals, Mylan, Novartis, Nicholas Piramal, Divi's Labs, NATCO Pharma, Gland Pharmaceuticals, and others.

Hyderabad Pharma city

- By identifying life sciences and pharmaceuticals as a core the Government of Telangana proposed the Hyderabad Pharma City.
- The Department of Pharmaceuticals is also very keen to support in a grand way. It is planned in the land of **19,333 Acres** with the budget of Pharma City is Rupees **16,395 Cr.**
- Estimated investment potential of **64,000 crores** and at an expected export potential of **58,000 crores** per annum. Pharma city Hyderabad is expecting direct employment of 1,50,000 and indirect employment of **5,00,000**.

Apart from Pharmaceutical manufacturing, Pharmaceutical University and Pharmaceutical R&D and ancillary hub are also planned to establish in HPC. A total of 350 companies had approached the government seeking land in Pharma City, and 150 of them will be allotted land in phase I. Till now 16 MNC companies got lands in pharma city, their names are mentioned below as per sources.



The proposed MNR-HERA proposed DTBU is about 1 hour drive away from HPC and well connected with National Highway having potential for collaboration with Pharma Industries in terms of Research & Development, skill development and placements not only to Pharmacy students but also to all the Engineering, Health and Life Science students.

B) Weaknesses

- Limited access to international collaborations and global exposure so far because the institution deemed to be university is to start from beginning.
- The non-existence of a ready-made building as infrastructure required for the new schools may cause some initial delays. To overcome this weakness, the existing infrastructure and buildings of old colleges and institutions will be utilized.
- Inter-disciplinary research infrastructure needs to be built-up.
- Limited funding, which can restrict infrastructure development, research capabilities, and faculty recruitment. To overcome this challenge, university can explore diversified funding sources, such as grants and partnerships with industries.
- New administrative staff: Implementing streamlined administrative processes, utilizing technology for efficiency, and providing training to administrative staff can address this issue.

C) Opportunities

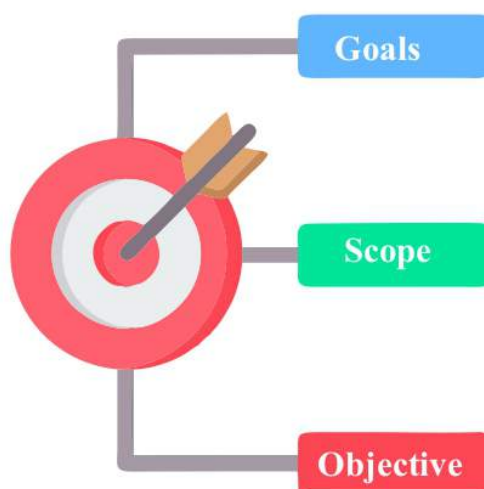
- Growing Demand for Higher Education: Increasing demand for quality education provides an opportunity for the new DTBU to attract students and broaden program offerings.
- Effective implementation of National Education Policy 2020 for enhancing quality and productivity in Higher Education.
- Technological Advancements: Utilizing cutting-edge technology for enhanced teaching, research, and administrative processes.
- Research and Innovation: Leveraging research capabilities to contribute to academic advancements and industry innovation.
- Globalization and Internationalization: Expanding the university's reach through international collaborations and attracting international students.
- Industry Collaborations: Forging partnerships with industries provides opportunities for research collaborations, internships, and placements.
- Entrepreneurship and Start-ups: Encouraging entrepreneurship and supporting start-ups through incubation centers.
- Skill Development and Employability: Addressing the demand for skilled graduates in the job market through relevant academic programmes.

- Social Impact Initiatives: Creating programs that address societal challenges and promote social responsibility.
- International Faculty Exchange: Facilitating faculty exchange programs with renowned international universities.
- Courses offered through online distance learning (ODL) in a phased manner.

D) Challenges

- Faculty Recruitment and Retention: Attracting qualified and experienced faculty members can be challenging, especially in competitive academic markets and for long-term commitments. However, the proposed institution, deemed to be university, is well-prepared to meet these challenges.
- Attracting and retaining students may be challenging, especially in the early stages of the university. However, the proposed institution, deemed to be university, is geared up to meet these challenges.
- Market Competitiveness: High competition from established universities may pose challenges in attracting students and establishing a unique identity. However, the proposed institution, deemed to be university, is geared up to meet these challenges.
- Enhancing the communication and employability skills of students has become a major challenge in today's industry requirements, and this challenge will be met through holistic and multidisciplinary education.
- Challenges in offering competitive scholarships and financial aid to attract top students. However, the proposed institution, deemed to be university, is geared up to meet these challenges.
- Research Funding: Securing research grants and funding for impactful research initiatives under the present competitive world.

8. Goals, Scope and Objectives of the Institution Proposed to be Deemed to be University



Goals

- To become a Model Holistic and Multi-disciplinary Education and Research University in private sector with proper ambience for inter-disciplinary thinking, research, debate, discussion and innovation in true spirit of the transformative initiatives of National Education Policy (NEP 2020) to offer value-based education to develop individuals with ethical creativity, character, scientific temper, intellectual curiosity and spirit of service to the Society.
- To be a 21st Century World Class Deemed to be University with focus on teaching and research dedicated to skilled manpower development in unique disciplines with applications of prominent cutting-edge technologies addressing the strategic needs, economic development and preservation of cultural heritage of the country and also contributing to the SDGs.

Scope

- Tremendous Scope exists to integrate Technical Education, Healthcare Education, Agricultural Education and Legal Education with Humanities, Social Sciences, Ability Enhancement Courses and Skill Enhancement Courses (SEC) and Value-Added Courses (VAC) by introducing the Choice Based Credit System to develop holistic individuals whom the country needs today to meet the 21st Century requirements
- Also the imaginative and flexible structures of course curriculum and guidelines for Multiple Entry, Exit and Dual Degree options in Semester system UG programs in particular as proposed in “Curriculum and Credit Framework for Undergraduate Programs (CCFUP)” 2022 of the UGC would prepare the young professionals with enhanced employability

OBJECTIVES

1. To provide multi-disciplinary and holistic education, research and innovations in the Faculties of Intelligence and Computing, Technology-led Agriculture, Indian Knowledge Systems, Cultural Heritage, Science, Engineering and Technology, Healthcare, Law, Management, Social and Life Sciences, Arts and Humanities and others and also across the disciplines recognized national and globally
2. To establish new institutions and new courses that are fast gaining prominence, given the 21st Century requirements, nationally and globally, with important applications to community wellness, health, environment and sustainable living for enhanced employability of the youth.
3. To conduct multi-disciplinary and inter-disciplinary teaching and research activities to the students at UG, PG and Ph. D levels in addition to their rigorous specializations to develop holistic individuals by implementing the provisions of NEP 2020.
4. To transform into a Multidisciplinary Education and Research University at the earliest to attain the highest global standards in quality education ever meeting the contemporaneous strategic needs of the country and the sustainable development goals.
5. To make value-based education with human values, ethics and principles as an integral part of a holistic education by implementing the choice based credit system in the flexible and innovative course curriculum of technical, agriculture, legal and healthcare education incorporating subjects like humanities, sociology, psychology and Indology as per the NEP and the new student centric CCFUP 2022 formulated by UGC.
6. To adopt, in true spirit, all the provisions of NEP 2020 which envisions quality higher education to develop good, thoughtful, well rounded and creative individuals in view of the 21st Century Requirements but not limited to the following,
 - Institutional Restructuring and Consolidation
 - Towards a More Holistic and Multi-disciplinary Education
 - Optimal Learning Environment and Support for Students
 - Internationalisation
 - Motivated, Energised and Capable Faculty
 - Equity and Inclusion in Higher Education
 - Teacher Education
 - Re-imagining Vocational Education
 - Promotion of Indian Languages, Arts and Culture
 - Technology Use and Integration
 - On-Line and Digital Education

7. To establish a Center for Research and Innovations to strengthen research eco-system and to act as a university vehicle to coordinate interface with the Schools to conduct inter-disciplinary research in the areas of frontier cutting edge technologies and contribute to setting up of start-up incubation centers and strategic industry-academia interface.
8. To increase access to higher education and to increase the GER by promoting the Open Distance Learning (ODL), usage and vibrancy of local language/mother tongue, the DTBU shall introduce the mother tongue/local language as the medium of instruction in the courses for the benefit of general public and farmers.
9. To implement regular up gradation of course curriculum of all programs by introducing multi-disciplinary, value-added, ability and skill enhancement courses and implement choice based credit system as envisioned in CCFUP 2022 of the UGC to enhance the employability of graduates.
10. To award Certificates, Diplomas, Degrees and other academic distinctions based on the standard methods of evaluation fully confirming to the concept of a Quality Deemed to be University system.
11. To encourage teacher education towards more holistic and multi-disciplinary education and accordingly constant updating of content and pedagogy

9. Strategic Planning and Monitoring

Strategic planning and monitoring are critical components in the establishment of a DTBU. A well-defined strategic plan sets the foundation for the university's growth and success, outlining its vision, mission, objectives, and resource allocation. Monitoring mechanisms help assess progress, identify challenges, and make necessary adjustments to achieve desired outcomes.

The strategic planning process begins with a comprehensive analysis of the higher education landscape, market demand, and the unique strengths and opportunities the university can offer. A clear understanding of the target audience, including prospective students and stakeholders, is essential in defining the university's niche and designing relevant academic programs. It involves formulating specific goals and objectives that align with the university's vision and mission. These objectives should be measurable, achievable, realistic, and time-bound, providing a clear direction for the university's growth and development.

A critical aspect of the strategic planning process is resource allocation. Adequate funding and budget planning are essential to support faculty recruitment, infrastructure development, research initiatives, student support services, and marketing efforts.

Another important aspect of strategic planning is infrastructure development. The design and construction of state-of-the-art facilities, including classrooms, laboratories, libraries, and student accommodations, contribute to creating a conducive learning environment.

Monitoring and evaluation are integral to the strategic planning process. Regular assessment of progress against established objectives helps identify areas of success and areas needing improvement. Key performance indicators (KPIs) are essential tools in tracking progress and holding stakeholders accountable. Monitoring also allows for timely intervention in case of deviations from the planned trajectory, ensuring the university remains on course towards its objectives.



10. Proposed Schools, Departments, Programmes, Annual Intake and Year of Starting

School	Names of the Departments		Names of Programmes	Year of Starting	Level	Duration	Medium	Annual Intake
School of Intelligence and Computing	1. Intelligence and Computing	1	B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Machine Learning)	2026	UG	4	English	180
		2	B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Data Science)	2026	UG	4	English	60
		3	M.Tech/M.S - CSE (Artificial Intelligence and Machine Learning)	2027	PG	2	English	20
		4	M.Tech/M.S - CSE (Artificial Intelligence and Data Science)	2027	PG	2	English	20
	2. Mechatronics Engineering	1	B.Tech/B.S (Hons) - Mechanical (Mechatronics)	2026	UG	4	English	120
		2	M.Tech/M.S - Mechanical (Mechatronics)	2027	PG	2	English	20
		3	Ph.D. in Mechatronics Engineering	2028	Ph.D.	3	English	8
	3. Additive Manufacturing	1	B.Tech/B.S (Hons) - Mechanical (Additive Manufacturing)	2026	UG	4	English	120
		2	M.Tech/M.S - Mechanical (Additive Manufacturing)	2027	PG	2	English	20
	4. Computer Science and Engineering	1	B.Tech/B.S (Hons) - Computer Science and Engineering (CSE)	2026	UG	4	English	300
		2	M.Tech/M.S - Computer Science and Engineering (CSE)	2027	PG	2	English	20
		3	Ph.D. in Computer Science and Engineering	2028	Ph.D.	3	English	8
	5. Electronics and Communication Engineering	1	B.Tech/B.S (Hons) - ECE (Internet of Things)	2026	UG	4	English	60
		2	M.Tech/M.S - ECE (Internet of Things)	2027	PG	2	English	20
		3	Ph.D. in Electronics and Communication Engineering	2028	Ph.D.	3	English	8
School of Indian Knowledge Systems	6. Cultural Heritage	1	B.Sc/B.S (Vastu)	2026	UG	3	Telugu	60
		2	B.A (Cultural Heritage)	2026	UG	3	Telugu	60
		3	B.A (Vedic Science & Philosophy)	2026	UG	3	Telugu	60
	7. Indian Music and Cultural Studies	1	B.A (Carnatic Music)	2026	UG	3	Telugu	60
		2	B.A (Hindustani Music)	2026	UG	3	Telugu	60
		3	B.A (Instrumental Music)	2026	UG	3	Telugu	60
		4	B.A (Indian Classical Dances)	2026	UG	3	Telugu	60
		5	M.Sc/MA (Indian Classical Dances)	2027	PG	2	English	10
		6	Ph.D. in Indian Classical Dances	2028	Ph.D.	3	English	6

	8. Sanskrit and Indian Languages	1	B.A (Sanskrit)	2026	UG	3	Sanskrit	60
		2	MA (Sanskrit)	2027	PG	2	Sanskrit	10
	9. Yoga and Naturopathy	1	B.A (Yoga & Meditation)	2026	UG	3	Telugu	60
		2	B.Sc/B.S (Yogic Sciences)	2026	UG	3	Telugu	60
		3	M.Sc/MA (Yogic Sciences)	2027	PG	2	English	10
		4	Ph.D. in Yogic Sciences	2028	Ph.D.	3	English	6
School of Technology-Led Agriculture	10. Technology-led Agriculture	1	B.Sc/B.S (Hons) Technology-led Agriculture (Major), Computer Applications and AI in Agriculture (Minor)	2026	UG	4	English	120
		2	B.Sc/B.S (Hons) Technology-led Agriculture, Computer Applications and Artificial Intelligence with Research	2026	UG	4	English	120
	11. Crop Production Technologies	1	M.Sc/M.S (Ag.) Artificial Intelligence and Computer Applications in Crop Production	2027	PG	2	English	10
		2	Ph.D. in Crop Production Technologies	2028	Ph.D.	3	English	5
	12. Crop Protection Technologies	1	M.Sc/M.S (Ag.) Artificial Intelligence and Computer Applications in Crop Protection	2027	PG	2	English	10
		2	Ph.D. in Crop Protection Technologies	2028	Ph.D.	3	English	5
	13. Agricultural Sciences and Farmers Welfare	1	B.Sc/B.S (Hons) Agriculture	2026	UG	4	English	120
School of Energy Studies	14. Environment and Sustainable Development	1	B.Sc/B.S (Hons)- Environment and Sustainable Development	2026	UG	4	English	60
		2	M.Tech/M.S - Environmental Science and Engineering	2027	PG	2	English	10
	15. Environmental Health and Ecology	1	M.Sc/M.S - Environmental Health Sciences and Management	2027	PG	2	English	10
	16. Green Energy Engineering	1	B.Tech/B.S (Hons)- Green Energy and Environmental Engineering (Major) Sustainable Development (Minor)	2026	UG	4	English	120
		2	Ph.D. in Green Energy and Environmental Engineering	2028	Ph.D.	3	English	10
School of Community Wellness and Lifestyle Management	17. Artificial Intelligence in Lifestyle Management	1	B.Sc/B.S (Hons) (Community Wellness and Lifestyle Management)- Major -Artificial Intelligence in Lifestyle Management (Minor)	2026	UG	4	Telugu/English	60
	18. Community Resources Management	1	M.Sc/M.S (Community Health and Wellness)	2027	PG	2	English	10
	19. Wellness and Sustainable Living	1	B.Sc/B.S (Community Wellness and Lifestyle Management)	2026	UG	3	Telugu/English	60
		2	Ph.D. in Community Wellness and Lifestyle Management	2028	Ph.D.	3	English	10

School of Allied Health Sciences	20. Health Care and Diagnostic Sciences	1	B.Sc/B.S (Hons) Anesthesiology & OTT	2027	UG	4	English	120
		2	B.Sc/B.S (Hons) Radiology & Image Tech	2027	UG	4	English	120
		3	B.Sc/B.S (Hons) Medical Laboratory Tech	2027	UG	4	English	60
		4	B.Sc/B.S (Hons) Optometry	2027	UG	4	English	60
		5	B.Sc/B.S (Hons) Emergency Medical Tech	2027	UG	4	English	60
		6	B.Sc/B.S (Hons) Respiratory Therapy Tech	2027	UG	4	English	60
	21. Physiotherapy and Rehabilitation	1	Bachelor of Physiotherapy (BPT)	2027	UG	4½	English	180
		2	Master of Physiotherapy (MPT) in Orthopedics	2028	PG	2	English	12
		3	Master of Physiotherapy (MPT) in Neurology	2028	PG	2	English	12
		4	Master of Physiotherapy (MPT)in Cardio Vascular & Pulmonary	2028	PG	2	English	12
School of Management and Law	22. Business Law and Corporate Governance	1	Bachelor of Business Management and Bachelor of Laws (BBM LLB)	2027	UG	5	Telugu	60
		2	Bachelor of Arts and Bachelor of Laws (BA LLB)	2027	UG	5	English	60
		3	Master of Laws (LLM)	2028	PG	1	English	30
		4	Ph.D. in Corporate Governance	2029	Ph.D.	3	English	5
	23. Public Policy and Business Administration	1	Bachelor of Business Administration (BBA)	2027	UG	3	English	60
		2	Master of Business Administration (MBA)	2028	PG	2	English	60
		3	Bachelor of Business Administration with Honours - BBA (Hons)	2027	UG	4	English	60
		4	Ph.D. in Business Administration	2029	Ph.D.	3	English	5
	24. Service Sector Management	1	Ph.D. in Service Sector Management	2029	Ph.D.	3	English	5
School of Health and Biomedical Sciences	25. Advanced Bioscience and Technology	1	B.Sc/B.S (Hons) Bio-Technology Entrepreneurship and Innovation	2027	UG	4	Telugu/English	60
		2	Ph.D. in Biomedical Sciences	2029	Ph.D.	3	English	10
	26. Medical Biotechnology	1	B.Sc/B.S (Hons)- Medical Biotechnology	2027	UG	4	Telugu/English	60
		2	M.Sc/M.S- Medical Biotechnology	2028	PG	2	English	20
	27. Translational Research and Diagnostics	1	B.Sc/B.S (Hons) - Bio Medical Devices and Diagnostics	2027	UG	4	Telugu/English	60
		2	M.Sc/ M.S - Bio Medical Devices and Diagnostics	2028	PG	2	English	20
Center for Research and Innovation	28. Biomedical Research and Innovation	1	M.Sc/M.S - Biomedical Research and Innovation	2028	PG	2	English	20
		2	Ph.D. in Biomedical Research and Innovation	2029	Ph.D.	3	English	10
Total Number of Departments: 28			Total Number of Programmes: 73			Total Annual Intake: 3667		

11. Relevance of the Courses to the guidelines of the NEP 2020, Strategic Needs of the Country and also the SDGs of UN.

In tune with the guidelines of the **National Educational Policy (NEP) 2020, the strategic needs of the country and the sustainable development goals**, the DU will aim to develop good, thoughtful, well rounded and creative individuals with ethical and constitutional values, intellectual curiosity, scientific temper and spirit of service, given the 21st Century requirements and strategic needs of the country. **In the process, new courses which bring a paradigm shift from traditional technologies to the cutting edge technologies are being introduced.** Apart from Degree courses, certain certificate courses, Diploma courses, and one-year PG Diploma courses as some kind of finishing schools are also contemplated for enhancing the employability of the students.

To cite a few examples, the courses on Artificial Intelligence (AI), Data Science (DS), Machine Learning (ML), Internet of Things (IoT) under the **School of Intelligence and Computing**, the courses on AI in Agriculture, DS in Agriculture, Robotics and UAVs, IoT in Agriculture under the **School of Technology-led Agriculture** are the need of the day and immediate future. Given the lessons learnt from the times of epidemics and pandemics particularly during the last three years, the University will take the lead to undertake education and research in areas of health care technologies, image technologies, emergency medical technology, virology, diagnostics, flow cytometry instrumentation, lifestyle management, Human development and family relations, Family Resources Management and other relevant areas under the **School of Allied Health Sciences and School of Community and Lifestyle Management**. The courses on Space law, IPR law, Insolvency and Bankruptcy Law, Marine law, Business Analytics, Agri-Business Management, Sustainability and Growth Management, Digital Transformation are introduced under the present time **School of Management and Law**. The courses on Bio-Physics, Structural Biology, Marine Biology, Physiological Ecology, Bio-Informatics, Anthropology and Neuroscience will be introduced under the **School of Health and Biomedical Sciences** to meet the contemporaneous requirements of the Society. The courses on Environmental Ecology, Science and Food Policies Research, Politics and Policies for Sustainable development, Conservation of Bio-Diversity, Global Sustainable Development Goals of the UN under the School of Environment and Sustainability will make the learners aware of national and global issues to become active promoters of peaceful, secure and sustainable environment and societies.

The School of Indian Knowledge Systems deal with the courses which depict the collective wisdom of ancient India, rooted in spirituality, philosophy, sciences, arts, and social principles. From spiritual and philosophical insights to scientific discoveries, traditional medicine, arts, and social sciences, Indian Knowledge Systems encompass a wide range of disciplines that reflect the depth of human understanding and exploration. The IKS proposes to undertake a wide array of activities in diverse areas so that India can meet its future aspiration of positioning itself as Vishwa Guru, with particular emphasis on education, health, and the environment. The IKS aims to prepare earnest participants for a holistic life leading to the realization of their true potential and liberation of the Self as well.

These knowledge systems continue to inspire and shape various aspects of contemporary life and are

a testament to the profound intellectual achievements of India's ancient civilizations. Preserving and promoting these invaluable traditions is essential not only for the preservation of cultural heritage but also for finding holistic solutions to the challenges faced by humanity in the modern world.

The University will also focus on research and innovation by establishing a **Center for Research and Innovations**, a university-wide vehicle for integrating research work across the disciplines in the university for encouraging start-up incubation centers, intellectual property rights, patents, research in frontier technologies, greater industry-academia-government linkages and interdisciplinary and multidisciplinary research approaches.

Being a holistic and multi-disciplinary University, it will create proper ambience for interdisciplinary thinking, debate, discussion, research and innovation. The Schools, Centers and the flexible Course structures and the state-of-the-art equipment and facilities are so academically designed following the guidelines of the **NEP 2020** and **CCFUP 2022** as to create new possibilities and opportunities for multi-disciplinary work in the service of mankind and society meeting the 21st Century **Strategic Needs of the Country** and also contributing to the Global **Sustainable Development Goals**.

12. Distinctiveness of the Proposed MNR-HERA Deemed to be University

The DTBU (MNR-HERA) claims to be distinct for the purpose of getting granted the status of the Deemed to be University based on the following facts :

- The DBTU envisages exhaustive implementation plan for all the provisions of the NEP 2020 explained in the subsequent and other sections in this DPR for Holistic and Multi-Disciplinary Higher Education to develop well-rounded individuals with all critical 21st Century capabilities of intellectual, aesthetic, social, physical, emotional and moral in an integrated manner combined with capacities in fields across the humanities, social sciences, technical, legal, agriculture and healthcare education.
- The DBTU proposes the courses under the newly formulated student-centric “ Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) -2022 “ of the UGC which wonderfully reflects the NEP’s recommendations such as restructured degree programs, multiple entry, multiple exit, single/double major, minor stream choices, skill, ability and value enhancement courses.
- **The proposed DTBU is the First of its Kind to implement Common Curriculum for 3-Year UG and 4-Year UG (Hons) and Research.** The Institution proposed to be Deemed to be University is geared up to *implement the following structure of course curriculum common for all the UG programmes as envisioned by the UGC in its CCFUP 2022.* One of the key features is introduction of the new courses across the disciplines for **improving employability of the students with 21st Century Skills.**
 - Major Discipline
 - Minor Discipline
 - Multi-Disciplinary Courses
 - Ability Enhancement Courses
 - Skill Enhancement Courses
 - Value Added Courses
 - Research Ability Enhancement Courses
 - Research Internships (Details given in Section 15 (d))
 - Summer Internship
 - Research Project/Dissertation

Courses Details are provided under Academic Plan Section 15 (a)

- It is an Institution (proposed DTBU) with the following newly proposed schools starting from the beginning with focus on multi-disciplinary and interdisciplinary teaching, research and skill development in unique disciplines addressing the strategic needs of the country and contributing to sustainable development goals.

S No	Name of the School	
1	School of Intelligence and Computing	
2	School of Indian Knowledge Systems	
3	School of Technology-led Agriculture	
4	School of Energy Studies	
5	School of Community Wellness and Lifestyle Management	
6	School of Allied Health Sciences	
7	School of Management and Law	
8	School of Health and Biomedical Sciences	
9	Center for Research and Inovations	

- The structures of course curriculum of the diploma, degree and other courses are so designed as to develop holistic individuals with multi-disciplinary and inter-disciplinary courses combined with courses on sociology, psychology, cultural heritage and humanities to meet the 21st century requirements and to enhance their employability.

Name of the School with Major Streams	Minor Stream and MD & ID, Skill & Value added Courses for Holistic Development
Intelligence and Computing: AI&DS, AI&ML, IoT, Additive Manufacturing, Mechatronics	IPR, Legal aspects of AI&DS, IoT, Engineering Economy, Sociology, Humanities, Psychology, Human Resources Management, Skill Enhancement and Value Added Courses
Indian Knowledge Systems	Sociology, Skill Enhancement and Value Added Courses, Basic Engineering and Health Care
Technology-led Agriculture: Computer Applications, AI, UAVs in Agriculture	Rural Sociology, Psychology, Ancient Indian BMPs in Agriculture, Agri-Business Management, Land, Water and Plant/Tree ACTs, Agri-Tourism
Energy Studies: Renewable Energy Aspects	Sociology, Environmental planning, Agro-Energy, Skill Enhancement and Value Added Courses
Community Wellness and Lifestyle Management	Sociology, Psychology, Environment, COVID 19 Experiences, Skill Enhancement and Value Added Courses, Basic Engineering and Health Care
Allied Health Sciences:	Legal Health Education, Sociology, Psychology, COVID 19 Experiences, Skill Enhancement and Value Added Courses
Management and Law: Business Management and Law	Agri-Business Management, Air and Space Law, Sociology, Basic Engineering and Health Care, Skill Enhancement and Value Added Courses
Health and Bio-Medical Sciences:	Sociology, Soil-Water-Plant-Human Interface, Basic Engineering and Health Care, Skill Enhancement and Value Added Courses

Proposed Institution Deemed to be University to meet 21st Century Global Requirements

- Shall implement NEP 2020 guidelines duly incorporating in the Statutes and Ordinances of the University towards more Holistic and Multi-Disciplinary Higher Education right from the start of the University.
- Shall introduce the Curriculum and Credit Framework for the Undergraduate Programs (CCFUP 2022) of the UGC from very beginning to choose the subjects of their interest in all disciplines.
- Shall adopt Learning Outcomes based Pedagogical approach with paradigm shift from teacher-centric to learner-centric and from passive to participatory pedagogies to achieve Quality Higher Education.
- Shall have Multi-Disciplinary institutions of Medicine, Engineering, Health Care, Pharmacy, Dental, Homoeopathy, Agriculture, Management and Law, Physiotherapy and Nursing in single campus to offer multi-disciplinary courses from very beginning .
- Shall offer Skill Enhancement, Value-Added and Ability Enhancement subjects in all courses at undergraduate level to develop well-rounded individuals with critical 21st Century capacities which enhance their employability.
- Shall offer 4-Year Bachelor's Degree (Hons with Research) to enable the students to possess research bent of mind to independently take up and work on collaborative research projects on contemporaneous researchable issues.
- Shall establish an exclusive Center for Research and Innovation for conducting multi-disciplinary and inter-disciplinary research and guiding students across the disciplines offered by the Schools.
- Is evolved from MNR Educational Trust with Strong and Effective Governance and successful Leadership since 1974 with experience of about five decades with fifty educational institutions by now in India and Abroad.
- Shall revisit Choice Based Credit System (CBCS) for instilling innovation and flexibility for optimal learning environment and support to students in their chosen area of discipline.
- Is geared up to prepare professionals to meet the 21st Century challenges in cutting edge areas that are fast gaining prominence such as AI, ML, DS, IoT, Additive Manufacturing, Robotics with applications in all courses related to Health Care, Agricultural, Technical, Knowledge Systems, Bio-Medical Sciences, Energy, Management and Law Education for enhancing employment potential of all courses.

13. University Authorities

(a) Executive Council

The Executive Council shall be the principal executive body of the institution deemed to be University.

(i) The composition of the Executive Council shall be as specified by the UGC as applicable to the proposed DTBU

- Vice-Chancellor-Chairperson;
- Pro-Vice-Chancellor (if applicable);
- Two members from amongst the Deans of Schools, 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;
- up to four nominees of the Sponsoring body; and
- the Registrar, who shall be the ex-officio Secretary of the Executive Council.

(ii) Tenure of the members of Executive Council.

- (1) 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 and in the case of Deans, the term shall be three years or until they hold the office of Dean, whichever is earlier.
- (2) Members of the Executive Council appointed by the Vice-Chancellor from Professor, Associate Professor and Assistant Professor category shall hold office for a period of one year or till such time they cease to be teachers of the University, whichever is earlier.

(iii) Powers and limitations of Executive Council.

- (1) The Executive Council shall have the power of management and administration of the institution deemed to be University.
- (2) The Executive Council shall be the final decision-making body of the institution deemed to be University in respect of every matter of the institution deemed to be University, including academic, administrative, personnel, financial, and developmental matters.
- (3) Subject to the provisions of these regulations and the rules of the institution deemed to be 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 University;
- to provide for the appointment of Visiting Professors, Emeritus Professors, Professor 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
- if the institution is controlled or managed or receiving funds more than or equal to fifty per cent. of their annual receipt from the Central or State Government, the creation of posts shall be done by the Executive Council with prior approval of the respective Government from which grants are being released.

(iv) Meetings of Executive Council

- (1) The Executive Council shall meet at least four times a year (minimum two in one semester), with not less than seven days' prior notice given before every meeting of the Executive Council and emergency meetings may be convened at a shorter notice, for reasons to be recorded in writing for such emergency meeting.
- (2) One-third of the total number of members of the Executive Council shall form the quorum for the meeting.
- (3) 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 university, a member chosen by the other members of the Executive Council present at the meeting, shall preside over the meeting.
- (4) 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; and in case of a tie, the Chairperson shall have a casting vote.
- (5) Any business, which may be urgent in nature, may be carried out by circulation amongst its members.
- (6) 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 convening of the meeting.

(v) 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.

(vi) Delegation of powers of 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 faculties of the institution deemed to be University, such powers as it may deem fit, subject to the condition that the 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 next meeting of the Executive Council.

(b) Academic Council

- (i) The Academic Council shall be the principal academic body of the institution deemed to be University and shall, subject to the provision of the rules of the institution deemed to be University, co-ordinate and exercise general supervision over the academic policy of the institution deemed to be University.
- (ii) The composition of the Academic Council shall be as under
 - (1) Vice Chancellor - Chairperson;
 - (2) Pro Vice-Chancellor (wherever applicable);
 - (3) Deans of faculties of the schools and heads of the departments or centres;
 - (4) up to ten Professors (excluding those who are Deans of schools and heads of departments or centres) by rotation, to be nominated by the Vice-Chancellor giving due regard to the representation of different schools or departments or centres;
 - (5) 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;
 - (6) 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;
 - (7) 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
 - (8) the Registrar, who shall be the ex-officio Secretary of the Academic Council.
- (iii) The representation of different categories shall be through rotation and not through an election and the term of members, other than the ex-officio members, shall be three years and the Controller of Examination shall be the permanent invitee to the meetings of the Academic Council.

- (iv) Powers and Functions of Academic Council : Subject to the provisions of these regulations and rules of the institution deemed to be University, the Academic Council shall, in addition to all other powers vested in it, have the following powers, namely
- (1) to exercise general supervision over the academic policies of the institution deemed to be University and to give directions regarding methods of instruction, co-ordination of teaching among departments or faculties or schools or centers, evaluation of research and improvement of academic standards;
 - (2) to bring about and promote inter-departmental, inter-faculty, inter-school, inter-center co-ordination and to establish or appoint such committees or boards, as may be deemed necessary for the purpose;
 - (3) to consider matters of general academic interest either on its own initiative, or on a reference by a department or faculty or school or centre or the Executive Council, and to take appropriate action thereon;
 - (4) to prescribe courses or programmes of study leading to degree and diploma of the institution deemed to be University;
 - (5) to make arrangements for the conduct of examinations in conformity with the rules and bye-laws of the institution deemed to be University;
 - (6) to maintain proper standards of the examination;
 - (7) to recognise diplomas and degrees of Universities and other Institutions and to determine equivalence with the diplomas and degrees of the institution deemed to be University;
 - (8) to institute Fellowships, Scholarships, Medals, Prizes, etc.;
 - (9) 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.;
 - (10) to take a periodical review of the activities of the departments or centres and to take appropriate action to maintain and improve the standards of instruction;
 - (11) to recommend the institution of teaching posts (Professors, Associate Professors, and Assistant Professors) to the Executive Council;
 - (12) to make recommendations to the Executive Council for the establishment or abolition of departments or centres or schools or faculties, etc.
 - (13) to make recommendations to the Executive Council; and
 - (14) 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.

(v) Meetings of Academic Council

- (1) 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 a shorter notice, for reasons to be recorded in writing for such emergency meeting.
- (2) One-third of the total number of members of the Academic Council shall constitute the quorum for the meeting of the Academic Council.
- (3) Each member, including its Chairperson, shall have one vote, and decisions at the meetings of the Academic Council shall be taken by simple majority; and in case of a tie, the Chairperson shall have a casting vote.
- (4) 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.

(c) Finance Committee

- (i) The composition of the Finance Committee shall be
 - (1) Vice Chancellor - Chairperson;
 - (2) Pro Vice-Chancellor (wherever applicable);
 - (3) one person nominated by the society or trust or company, as the case may be (wherever applicable);
 - (4) three persons to be nominated by the Executive Council, out of whom at least one shall be a member of the Executive Council;
 - (5) one representative of the Central Government not below the rank of Joint Secretary or his representative to the Government of India, in case the institution is controlled and managed by the Central Government or is receiving funds more than or equal to fifty per cent. of their annual receipt from the Central Government directly or through its Agencies; and in all other institution deemed to be Universities, the Commission shall nominate a representative;
 - (6) three persons to be nominated by the Chancellor;
 - (7) Finance Officer-Secretary- ex officio
- (ii) In case the institution deemed to be University is controlled or managed or funded by the State Government, one representative of such Government.
- (iii) All members of the Finance Committee other than ex-officio member shall hold office for a term of three years.
- (iv) 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 and one-third of the total number of members of the Finance Committee shall form the quorum for a meeting.

- (v) All proposals relating to the creation of posts and those items which have not been included in the Budget, shall be examined by the Finance Committee before the Executive Council considers them and to decide waiver in fees, the establishment of scholarships, freeship and any other financial benefits.
- (vi) The annual accounts and financial estimates of the institution deemed to be 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.
- (vii) The Finance Committee shall recommend limits for the total recurring and non-recurring expenditures for the year, based on the income and resources of the institution deemed to be University.

(d) Boards of Studies

- (i) There shall be one Board of Studies for each School or Department or Degree of the institution deemed to be University. The composition of the Board of Studies shall be
 - (1) Dean of school or Head of the department - Chairperson;
 - (2) all Professors of the school or department;
 - (3) two Associate Professors of the school or department, by rotation;
 - (4) two Assistant Professors of the school or department, by rotation; and
 - (5) two external experts to be co-opted for their specialised knowledge.
- (ii) 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
 - (1) courses of studies;
 - (2) appointment of supervisors for research; and
 - (3) measures for the improvement of the standards of teaching and research.
- (4) The powers and functions of the Board of Studies shall be prescribed by the Rules of the institution deemed to be University.

(e) Other Authorities

The Executive Council may decide about the other authorities for meeting the requirements of the teaching, research and administrative wings of the institution deemed to be University

14. Officers of the Institution Proposed to be Deemed to be University

(I) Chancellor

- (1) 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 Chancellor in the institutions deemed to be Universities managed or controlled or receiving funds more than or equal to fifty per cent of their annual receipt from the Central or State Government or its Agencies, shall be appointed by the respective Government and for other institutions deemed to be Universities, the Chancellor shall be appointed by the sponsoring body.
- (2) The Chancellor shall, by virtue of his or her office, be the head of the institution deemed to be University and shall, if present, preside at the Convocations of the institution deemed to be University held for conferring degrees.
- (3) In the case of Government controlled or managed or receiving funds more than or equal to fifty per cent. Of their annual receipt, the Chancellor shall not be removed from office except by an order of the appropriate Government.

(ii) Vice-Chancellor

- (1) The Vice-Chancellor shall be a whole-time salaried officer of the institution deemed to be University and shall be appointed by the Chancellor from a panel of three names suggested by a Search-cum-Selection Committee.
- (2) The qualifications of the Vice-Chancellor 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.
- (3) The procedure for composition of Search-cum-Selection-Committee (SCSC) for the selection of Vice- Chancellor shall be as under
 - (a) The Vice-Chancellor in the institution deemed to be University managed or controlled or receiving funds more than or equal to fifty per cent. Of their annual receipt from the Central or State Government or its Agencies shall be appointed by Central Government or the State Government, as the case may be.
 - (b) In case of other institutions deemed to be Universities, the composition of the Search-cum-Selection Committee shall be as under
 - (i) A nominee of the Chancellor, who shall be a reputed academician as the Chairperson of the Committee;
 - (ii) A nominee of the Chairman, University Grants Commission; and

- (iii) An academicians, with not less than ten years' service as Professor, nominated by the Executive Council.

- (1) 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 such period, not exceeding a total period of one year.

- (2) In the case of Government controlled or managed or receiving funds more than or equal to fifty per cent. of their annual receipt, the respective Government may direct the Vice-Chancellor, after his or her term has expired, to continue in office for such period, not exceeding a total period of one year.

- (3) 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.

Provided further that, in the case of Central Government or State Government controlled or managed or receiving funds more than or equal to fifty per cent. of their annual receipt, if the Pro-Vice-Chancellor is unavailable, the Government shall appoint the senior most Professor or any other eminent academicians to perform the duties of the Vice-Chancellor initially for a period of six months or 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.

- (4) Powers and duties of Vice-Chancellor

- (a) The Vice-Chancellor shall be the Principal Executive Officer and academic officer of the institution deemed to be University and shall exercise general

supervision and control over the affairs of the institution deemed to be University and give effect to the decision of all authorities of the institution deemed to be University.

- (b) The Vice-Chancellor may, if he or she is of the opinion 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 is of the opinion 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 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 and thereupon the Executive Council may confirm, modify or reverse the action taken by the Vice-Chancellor.

- (c) The Vice-Chancellor, if he or she is of the opinion 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 and 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.
- (d) 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 for conferring degrees to the students.
- (e) The Vice-Chancellor shall be entitled to be present at, and address, any meeting of any authority or other body of the institution deemed to be University, but shall not be entitled to vote unless he or she is a member of such authority or body.
- (f) 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.

- (g) The Vice-Chancellor shall have all the powers necessary for the proper maintenance of discipline in the institution deemed to be University, and he or she may delegate any such powers to such person or persons, as he or she may deems fit.
 - (h) The Vice-Chancellor shall have the power to convene or cause to be convened the meetings of the Executive Council, the Academic Council, the Finance Committee, and other authorities.
- (5) Removal of Vice-Chancellor
- (a) Where there are reasons to believe that the Vice-Chancellor of an institution deemed to be 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.
 - (b) On the directions from the Commission, the Chancellor shall place the Vice-Chancellor under suspension, pending an enquiry.
 - (c) The enquiry committee shall give an opportunity of hearing to the Vice-Chancellor before submitting its report to the Commission and 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:

Provided that, in respect of the Vice-Chancellor of institution deemed to be University managed or controlled or receiving funds more than or equal to fifty per cent. of their annual receipt from the Central Government or State Government, the concerned Government shall constitute an enquiry committee which shall provide an opportunity of hearing to the Vice-Chancellor before submitting its report to the Government and in the interregnum period, the Government shall place the Vice-Chancellor under suspension, pending enquiry and the Vice-Chancellor shall be removed only by the concerned Government.

- (d) 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, place the Vice- Chancellor under suspension, pending an inquiry.

- (e) In case of an institution deemed to be University managed or controlled or receiving funds more than or equal to fifty per cent. Of its annual receipt from the Central or State Government or its Agencies, the actions referred to in sub-regulations (1) to (4) shall have the approval of the appropriate Government.

(iii) Pro-Vice-Chancellor

- (1) 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 that in case of Government controlled or managed or receiving funds more than or equal to fifty per cent. of their annual receipt, the Vice-Chancellor shall seek approval of the appropriate Government before appointing Pro-Vice-Chancellor:

Provided further that where the recommendation of the Vice-Chancellor is not accepted by the Executive Council, 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 name of another Professor for re-consideration by the Executive Council.

- (2) The term of office of the Pro-Vice-Chancellor shall be such as may be decided by the Executive Council, but 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 on attaining the age of sixty-five years.

- (3) The Pro-Vice-Chancellor shall have the powers and duties as may be prescribed by the rules of the institution deemed to be University.
- (4) 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.

(iv) Registrar

- (1) The Registrar shall be a whole-time salaried officer of the institution deemed to be University and shall be appointed by the Executive Council on the recommendations of the selection committee consisting of the following:
 - a) Vice-Chancellor - Chairperson;
 - b) one nominee of the Chancellor;
 - c) two members of the Executive Council nominated by it; and
 - d) one expert not in the service of the University to be nominated by the Executive Council.
 - e) The meeting of the selection committee 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 and 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.
- (2) 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 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 University.

- (3) When the office of the Registrar is vacant or when the Registrar is, by reason of illness, absence, or any other cause, unable to perform the duties of his or her office, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.

- (4) The Registrar shall be ex-officio Secretary of the Executive Council and the Academic Council, but shall not be deemed to be a member of any of these authorities.
- (5) The Registrar shall be directly responsible to the Vice-Chancellor and work under his or her direction.
- (6) 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 of showing cause against the action proposed to be taken in regard to him or her.

- (7) An appeal shall lie to the Vice-Chancellor against any order of the Registrar imposing any of the penalties specified in sub-regulation (6).
- (8) 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.

- (9) It shall be the duty of the Registrar
 - (a) 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;
 - (b) to issue all notices convening meetings of the Executive Council, the Academic Council, and any Committees appointed by those authorities;
 - (c) to keep the minutes of all the meetings of the Executive Council, the Academic Council, and any Committees appointed by those authorities;
 - (d) to conduct the official correspondence between the Executive Council and the Academic Council;
 - (e) 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;
 - (f) to represent the institution deemed to be 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;

- (g) 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;
- (h) to enter into an agreement, sign documents, and authenticate records on behalf of the institution deemed to be University;
- (i) 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.

(v) Finance Officer

- (1) The Finance Officer shall be appointed by the Executive Council 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 University.
- (2) 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 on attaining the age of sixty-two years.
- (3) The emoluments and other terms and conditions of service of the Finance Officer shall be such as may be prescribed by the Executive Council from time to time.
- (4) When the office of the Finance Officer is vacant or when the Finance Officer is, by reason of illness, absence or any other cause, unable to perform the duties of his or her office, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.
- (5) The Finance Officer shall be ex-officio Secretary of the Finance Committee but shall not be deemed to be a member of such Committee.
- (6) The Finance Officer shall
 - (a) exercise general supervision over the funds of the institution deemed to be University and shall advise it as regards its financial policy; and
 - (b) 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.

- (7) Subject to the control of the Executive Council, the Finance Officer shall
- (a) 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;
 - (b) be responsible for the preparation of annual accounts and the budget of the institution deemed to be university and for their presentation to the Executive Council;
 - (c) keep a constant watch on the state of the cash and bank balances and on the state of investments;
 - (d) watch the progress of the collection of revenue and advice on the methods of collection employed;
 - (e) 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, centers and specialised laboratories;
 - (f) bring to the notice of the Vice-Chancellor un-authorised expenditure and other financial irregularities and suggest disciplinary action against persons at fault;
 - (g) call for from any office, department, school, faculty, centre, laboratory, etc. maintained by the institution deemed to be University any information or returns that he or she may consider necessary for the performance of his or her duties; and
 - (h) work under the direction of the Vice-Chancellor and shall be responsible to the Executive Council through the Vice-Chancellor.

(vi) Controller of Examinations

- (1) The Controller of Examinations shall be appointed by the Executive Council 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 University.
- (2) The Controller of Examinations 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 Controller of Examination:

Provided that the Controller of Examinations shall retire on attaining the age of sixty-two years.

- (3) The emoluments and other terms and conditions of service of the Controller of Examination shall be such as may be prescribed by the Executive Council from time to time.
- (4) When the office of the Controller of Examinations is vacant or when the Controller of Examinations is, by reason of illness, absence or any other cause, unable to perform the duties of his or her office, the duties of the office shall be performed by such person as the Vice-Chancellor may appoint for the purpose.
- (5) The Controller of Examination shall arrange for and superintend the examinations of the institution deemed to be University in the manner as may be prescribed by the rules of the institution deemed to be University.
- (6) The Controller of Examinations shall be a permanent invitee to the Academic Council.
- (7) The Controller of Examinations shall ensure that all the specific directions of the Executive Council, Academic Council and Vice-Chancellor in respect of examination and evaluation are complied with.

(vii) Dean of School

- (1) The Departments dealing with allied subjects may be grouped into faculties or schools, etc., and every faculty shall be headed by a Dean.
- (2) 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.
- (3) When the office of the Dean is vacant or when the Dean is, by reason of illness, absence or any other cause, unable to perform duties of his or her office, the duties of the office shall be performed by the senior-most Professor or Associate Professor, as the case may be, in the School.
- (4) The Dean shall be the Head of the school or faculty or centre and shall be 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 University.
- (5) The Dean shall have the right to present and speak at any meeting of the Board of Studies or Committees of the school or faculty or centre, as the case may be, but shall not have the right to vote there unless he is a member thereof.

(viii) Head of the Department.

- (1) There shall be a Head of the Department or chairperson of the centre for each of the department or centre in the institution deemed to be University, who shall be appointed by the Vice-Chancellor 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.

- (2) 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.
- (3) The powers and functions of the Head of the department or chairperson of the centre shall be prescribed by the rules of the institution deemed to be University.

(ix) Director (Human Resources)

- (1) There shall be a Director (Human Resources) of the University appointed from amongst the Professors of the university with suitable qualifications and eligibility or through an open advertisement nationally.
- (2) The Director (Human Resources) shall be appointed by the Vice-Chancellor with prior approval of the Chancellor and with the ratification by the Executive Council, for a period as may be specified by the university.
- (3) The Director (Human Resources) may be removed from the office by the Vice-Chancellor on the ground of misconduct, inefficiency, financial irregularity or any other reason as may be considered not in the interest of the University with prior approval of the Chancellor and ratification by the Executive Council and Sponsoring Body.
- (4) The powers, functions and duties of Director (Human Resources) subject to the approval of the Vice-Chancellor and Executive Council and ratification by Sponsoring Body for all the following items: He/She shall be responsible for (1) all matters of human resources management such as recruitment, compensation, retention, increments, promotion, welfare, training and development (2) executing best practices, regulatory changes and new technologies in human resources development for hiring and talent management (3) formulation of policies and measures to attract and retain the best talent for the teaching, non-teaching and

administrative staff (4) providing guidelines with information on acceptable norms of behavior and work schedules for adoption in effective management of staff (5) providing constructive and timely performance evaluations (6) devising the scientific methods for performance assessments for increments and promotions of teaching, non-teaching and administrative staff (7) facilitating professional development training and certification activities (8) coordinating with the Deans of Schools, Dean (Academic), Director (R&D), Directors of Centers and other Officers of the university for the HR aspects (9) assisting the university for obtaining accreditation from the NAAC and other regulatory bodies with regard to human resources development and trainings (10) assisting the University in complying with all the rules, regulations, norms etc of the Regulatory bodies and provide all assistance to such bodies whenever required and (11) performing all other duties and functions as may be delegated and assigned by the Vice-Chancellor and the Executive Council subject to ratification by Sponsoring Body. The Director (Human Resources) shall also perform such duties and functions as may be required of him/her by the Chancellor, Vice-Chancellor and Registrar of the University from time to time.

- (5) The emoluments and other terms and conditions of the service of the Director (Human Resources) shall be as decided by the Executive Council.

(x) Dean of Students Welfare

- (1) There shall be a Dean of Students Welfare of the University appointed from amongst the Professors of the University with suitable qualifications and eligibility or through an open advertisement nationally.
- (2) The Dean of Students Welfare shall be appointed by the Vice-Chancellor with prior approval of the Chancellor and with the ratification by the Executive Council and Sponsoring Body, for a period as may be specified by the University.
- (3) The Dean of Students Welfare may be removed from the office by the Vice-Chancellor on the ground of misconduct, inefficiency, financial irregularity or any other reason as may be considered not in the interest of the University with prior approval of the Chancellor and ratification by the Executive Council and Sponsoring Body.
- (4) The powers, functions and duties of Dean of Students Welfare subject to the approval of the Vice-Chancellor and the Executive Council and ratification by Sponsoring Body for all the following items : He / She shall be responsible for (1) promotion of cultural, social, literary activities for the holistic development of the students, (2) arranging boarding, studying, playing and security of the students in

the hostels (3) dealing with all issues of scholarships, fellowships and their timely reimbursement/distribution, (4) taking all measures to maintain discipline among the students in the university (5) to communicate with the parents/guardians as and when required, (6) formation of Alumni Associations and Counseling Centers (7) arranging medical and health services to the students and (8) taking steps for proper amenities in hostels, messes and canteen, (9) forming disciplinary committees, submitting reports suggesting actions on the erring student(s) to the Vice-Chancellor (10) the due observance of the provisions of the Principal Act 2018, Statutes, Ordinances, Rules and Regulations particularly for obtaining Accreditation from the NAAC and also from such other regulatory bodies connected to the student welfare activities of the University (11) assisting the University in complying with all the rules, regulations, norms etc of the Regulatory bodies and provide all assistance to such bodies whenever required and (12) performing all other duties as may be delegated and assigned by the Vice-Chancellor subject to ratification by the Executive Council and Sponsoring Body. The Dean of Students Welfare shall also perform such duties and functions as may be required of him/her by the Chancellor, Vice-Chancellor and Registrar of the University.

- (5) The emoluments and other terms and conditions of the service of the Dean of Students Welfare shall be as decided by the Executive Council and the Sponsoring Body.

(xi) Other Officers

- (1) The University may appoint such other officers as may be necessary for its functioning with prior approval of the Executive Council.
- (2) The manner of appointment of other officers of the University and their powers and functions shall be such as may be specified by the Executive Council.

15. 15-Year Detailed Strategic Vision Plan and 5-Year Rolling Implementation Plans

(a) The Academic Plan

(i) Overview

The Institution proposed to be deemed to be University (MNR-HERA) aims to establish courses in 8 schools and one Center and then plans to sustainably develop them into full-fledged institutions including UG, PG and Ph D programmes. The following salient features and Plans will make it a truly “Distinct” and “Different” from other Higher Educational Institutions/Universities.



(ii) Experiential Learning and Student READY

The DTBU shall adopt the pedagogy of experiential Learning and student READY programmes and engage the students to apply their learning practically. The students will be encouraged to go for inter-disciplinary learning, debate and discussion utilizing the facilities in other schools. For example, the students of Technology-Led Agriculture undergoing the applications of Artificial Intelligence and Drones in Agriculture shall be taking up projects in coordination with the departments of the School of Intelligence and Computing. These opportunities shall further inculcate qualities of leadership, technical competence and entrepreneurship for holistic education.

(iii) Optimal Learning Environment and Support for Students

The Academic Plan emphasizes on Updated Curriculum, Pedagogy, Continuous Assessment and Student Support which are pillars for Quality Learning. Accordingly, the curriculum and the pedagogy will be designed to ensure stimulating and engaging learning experience for all students. The Choice Based Credit System (CBSS) for choosing courses all Major, Minor, Multi-Disciplinary, Ability Enhancement, Skill and Value Added Courses will be the heart of the education system of the proposed Institution. Integration of the Academic Plans ranging from curriculum improvement and quality class room teaching with the Institutional Development Plan for the holistic development of students by creating strong internal systems in academic and social domains.

(iv) Pedagogical Approaches

All courses, curriculum and syllabus and Pedagogical approaches are oriented towards enabling students to attain the defined learning outcomes through a paradigm shift from teacher-centric to learner-centric pedagogies to achieve the global standard in quality higher education. Teaching methods include lectures, tutorials, practicals, field based learning (ex. Agricultural work experience in farmers fields for agriculture students), internships, industrial training and open-end projects etc . The reading of prescribed text books, use of e-learning resources, national and international journals and magazines, e-Journals and self-study materials will be encouraged. The academy delivery at the proposed institution shall be broadly divided into the following categories

- Class room learning and transaction.
- Experiential and Skill Learning.
- Engagement in Multi-disciplinary problem solving.
- Ability Enhancement and Value Added Courses.
- Social Commitment and Spirit of Service.

(v) Interaction with Center for Research and Innovation

As the MNR-DTBU shall establish a Center for Research and Innovation, it will provide an opportunity for inter-disciplinary research, thinking and debate across the range of disciplines available in the Campus. Particularly, the UG programmes with Research components in all Schools will be much benefitted. There will be greater synergy between the Schools for inter-disciplinary research due to the presence of the Center.

(vi) Collaborative Teaching and Research : Professor of Practice approach

Teaching and Research activities in every School will be carried out in collaboration with relevant academic and industrial partners in both Public and Private sectors. The leading academic institutions in the country and across the world will be involved in strategic alliance in teaching, research and exchange programmes. As per the UGC guidelines, some eminent “**Professors of Practice**” will be engaged by the university apart from Guest Lectures, Visiting Faculty from Industry and Academia for better collaboration with Industry to make the curriculum interesting, relevant and updated regularly to align with the latest knowledge and industry requirements to meet the specified learning objectives and outcomes.

(vii) Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) of UGC

The curriculum in the undergraduate courses offered by the MNR-HERA DTBU is designed including the cutting edge areas that are fast gaining prominence such as Artificial Intelligence, Data Science, Machine Learning, Additive Manufacturing with important applications to Computing, health care, environment, agriculture, lifestyle management and sustainable living for enhancing the employability of Youth. The new curriculum frame work has the following features

1. Selection of subjects of their interest in all disciplines.
2. Transformative initiatives of NEP 2020 for holistic and multidisciplinary undergraduate education to develop all capacities of intellectual, aesthetic, social, physical, emotional, ethical and moral and soft skills such as critical and creative thinking.
3. Flexibility to move from one discipline to another.

4. Multiple entry and exit options with UG certificate, Diploma, Degree with Honours and Research depending on the number of credits.
5. Academic Bank of Credits (ABC).
6. Major and Minor disciplines, Multi-Disciplinary courses, Ability Enhancement courses, Skill Enhancement courses, Value added courses, Summer internship, Research Project/Dissertation for enhancing skills and employability of the graduates.

(viii) First of its Kind Common Course Curriculum for the 3-Year UG and 4-Year UG (Hons) and Research under Multi-Disciplinary, Skill and Ability Enhancement, and Value Added Categories of Courses in addition to the Regular Courses in the Chosen Discipline

The Institution proposed to be Deemed to be University is geared up to implement the following structure of course curriculum common for all the UG programmes as envisioned by the UGC in its CCFUP 2022. One of the key features is introduction of the new courses across the disciplines for improving employability of the students with 21st Century Skills.

- Major Discipline
- Minor Discipline
- Multi-Disciplinary Courses
- Ability Enhancement Courses
- Skill Enhancement Courses
- Value Added Courses
- Research Ability Enhancement Courses
- Research Internships (Details given in Section 15 (d))
- Summer Internship
- Research Project/Dissertation

S No	Multi-Disciplinary Courses (Any 9 Credits)	Credits	Learning Objectives and Outcomes
1	Anthropology	2	- Graduates from all Schools will have acquired knowledge and skills on multi-disciplinary and inter-disciplinary courses. - The graduates will have attained the capacities of being intellectual, aesthetic, social, physical, emotional and moral in an integrated manner. - Their linkages with related fields of study, current developments in the areas of learning will be established. - Capabilities for undertaking self-employment initiatives and entrepreneurship for enterprise creation and improved product development will be enhanced. - Engineering students will have acquired knowledge on Sociology, Health care and Lifestyle Management, Agriculture, Management, Law, Indian Knowledge systems etc. - Agriculture, Management, Law and Health Care and Bio-Medical Sciences students will have opportunity to acquire knowledge and skills on Artificial Intelligence, Machine Learning, Data Science, Additive manufacturing. - The Graduates and Post Graduates would become Holistic and Multi-Disciplinary Individuals to meet 21st Century Requirements.
2	Bio-Technology	2	
3	Civics and Government Organisation	1	
4	Psychology	1	
5	Environmental Science	2	
6	Technology-Led Agriculture	2	
7	Land and Water Conservation	2	
8	Natural Resources Management	2	
9	Accounts Management Software	2	
10	Human Resources Management	2	
11	National Education Policy 2020	1	
12	National Water Policy	1	
13	Health Education	2	
14	Project Management and Evaluation	2	
15	Digital Marketing and Community Engagement	2	
16	Systems Engineering and Approaches		
17	Programme Planning, Monitoring and Evaluation		
18	Substance Abuse and Wellness		
19	Agri-Business Management and Entrepreneurship		
20	Forest Ecological Systems		
S No	Value Added Courses (Any 8 Credits)	Credits	Learning Objectives and Outcomes
1	Indian Rural Sociology	1	The graduates will have been enabled and have acquired the knowledge and understanding of contemporary India with its historical, social perspective, goals and policies of national development.
2	Artificial Intelligence in Health	2	
3	Artificial Intelligence in Agriculture	3	
4	Big Data Analysis	3	
5	Drone Technology	2	

6	Health and Community Wellness	2	- The graduates will have acquired knowledge, skills, attitudes and values required for environmental protection. - They will have added knowledge on climate change, pollution, effective waste management, sustainable development, Healthcare and Effective Lifestyle management. - They will have acquired knowledge on management of biological resources and urban and vertical agriculture. - The graduates will have acquired knowledge on application of cutting edge technologies such AI, ML, DS, Additive Manufacturing, Robotics-Drones in Health Care, Agriculture, Management, Environment and Sustainable Living and Lifestyle Management.
7	Biological Diversity	2	
8	Yoga and Meditation	1	
9	Environment and Human Health	3	
10	Operations Research	3	
11	Permaculture and Urban Farming	3	
12	Sustainable Development Goals	1	
13	Leadership and Team Management	2	
14	Economics and Marketing	2	
15	Vertical Agriculture and Horticulture	2	

S No	Ability Enhancement Courses (Any 8 Credits)	Credits	Learning Objectives and Outcomes
1	Communication Skills in English as a Foreign Language	2	The graduates will have achieved competency in a modern Indian language and in the English Language with special emphasis on language and communication skills.
2	Cultural and Intellectual Heritage of Telugu Language	1	
3	Academic Reports Writing and Presentation in English	2	
4	Organisation of Debates and Discussion in English/Telugu	1	- The students will have been enabled to demonstrate core linguistic skills including critical reading, expository and academic writing skills. - The graduates will have acquainted themselves with cultural and intellectual heritage of the chosen Indian Language and English.
5	Oral Communication in Hindi	2	
6	Grammatical Writing in English	2	
7	English and Telugu Literature	2	
8	English-Hindi-Telugu Speech Translations	2	The graduates will have enhanced skills for effective communication, and ability to participate and conducting discussions and debate.
9	Arabic/ Hindi/ Sanskrit/ Urdu or Equivalent Course from SWAYAM or UGC recognized others MOOC	1	

10	English Vocabulary and Use	1	- The graduates will acquired Fund Writing proposals, preparation of technical reports and Detailed Project Reports (DPR). - The students will have achieved ability to draft EoIs, RFPs for the DPR. - The graduates will have enhanced public speech skills and presentations.
11	Public Speech and Presentation	1	
12	Multi-Disciplinary and Inter-Disciplinary Project Report	1	
13	Externally Funded Projects Writing	1	
14	EoI, RFP and DPR Preparation	1	

S No	Skill Enhancement Courses (Any 9 Credits)	Credits	Learning Objectives and Outcomes
1	Manufacturing Processes	3 (2+1)	- On undergoing these courses, the skills in areas of specialization or inter-disciplinary areas of learning in a multi-disciplinary context including wide ranging practical skills will be acquired and their employability will be enhanced. - The graduates will have acquired new knowledge and skills including “ learning how to learn skills” that are necessary for pursuing learning activities throughout life. - The graduates will have been imparted practical skills, soft skills, hands-on-Training, skills in addition to their regular courses for enhanced employability. - The graduates will have acquired practical knowledge and skills to under the situations for resolution of problems.
2	Practical Crop Production (Millets)	3 (1+2)	
3	Agricultural Experiential Learning in Famers Fields	3 (1+2)	
4	Health Emergency Management	3 (2+1)	
5	Engineering Design	3 (1+2)	
6	CAD/CAM for Interior Design	3 (1+2)	
7	Field Surveying and Levelling	3 (2+1)	
8	Fluid Transport Machinery	3 (2+1)	
9	Optimization Principles and Practices	3 (2+1)	
10	Engineering Drawing and Maps	2 (1+1)	
11	Technology Integration and Community Development	2 (1+1)	For example: while simply walking in the agricultural fields, an agricultural graduate will know how much draft is approximately required to till the soil and the moisture content.
12	Networking and Relationship Building	2(1+1)	
13	Computer Programming Languages (Choice Based) and Data Structures	3 (1+2)	
14	Remote Sensing and GIS applications in Agriculture/ Environment	3(2+1)	
15	Units, Measurements, Expressions and Systems	1 (1+0)	

S No	Research Ability Enhancement Courses (Any 3 credits)	Credits	Learning Objectives and Outcomes
1	Research Methodology	1	- The graduates will have developed aptitude for research independently - The graduates will have achieved capability to carryout Research Internships and Projects in real work environment independently
2	Data Analytics	2	
3	Statistical Analysis	2	
4	Experimental Design	1	
5	Research Proposals, Scientific and Technical Reports and Publications Writing	1	

The weightage of Theory:Tutorial:Practical in each of the above subjects will be as decided by the Boards of Studies and the Academic Council.

(ix) Assessment and Evaluation Mechanism

The students will be assessed for three components of Theory, Practicals and Skill component in most of the subjects in every course. There will be Two semesters in an academic year and it will be semester system for most of the programs excepting for allied health courses. First Semester begins in July/August and the Second semester starts in January/February. The Internship, Industrial Training will normally be in the second semester. The university will conduct Mid Semester Examination and unit tests as part of formative assessment and final semester examinations as part of summative assessment.

S.No	Type of Examination	Weightage
1	Unit Tests	As decided by the Academic Council of the University after discussion in respective Boards of Studies
2	Mid-Semester Examination	
3	Final Practical Examination	
4	Viva examination in skills/practicals	
5	Semester Final Theory Examination	
6	Village Adoption Programmes	
7	Social Activities	
8	NSS/NCC	

Subject to final decision of the Academic Council, the University shall propose the following categorization of marks for award of grades in each subject in a semester.

S.No	Marks	Letter Grade	Grade Point
1	91-100	O (Outstanding)	Marks in each subject divided by 10 rounded to one digit after decimal (ex. For marks of 81.68, GP = 8.2)
2	81-90	A (Excellent)	
3	71-80	B (Good)	
4	61-70	C (Average)	
5	51-60	P (Pass)	
6	Below 50	F (Fail)	

The Semester Grade Point Average (SGPA) is computed from the grades obtained in each subject as a measure of the performance in a given semester. The marks accumulated through various exams in a subject in a semester would be used to assign grade in that subject. While the SGPA is for the current semester, the Cumulative Grade Point Average (CGPA) is based on the grades in all subjects in the course of study.

The procedure recommended by the UGC will be adopted for computation of the SGPA and the CGPA. The SGPA is the ratio of the sum of the product of the number of credits with the grade points scored by a student in all the subjects taken by a student and the sum of the number of credits of all the courses undergone by a student.

The CGPA is also calculated in the same manner taking into all account all the subjects undergone by a student overall the semesters of the Course of study. The other details will be worked by the Boards of Studies and the Academic Council.

(x) Expected Overall Learning Outcomes of the MNR-HERA Higher Education System for the Holistic and Multi-Disciplinary Education for improved Employability

1. Knowledge Competency, Scientific Temper and Intellectual Curiosity
2. Complex Problem-Solving
3. Multi-Disciplinary/Inter-Disciplinary Thinking Debate and Discussion
4. Creative and Critical Thinking
5. Effective Communication Skills
6. Research and Innovation Skills
7. Leadership Qualities, Ethics and Values
8. Digital, Technological and Cutting Edge Skills
9. Community Engagement and Spirit of Service
10. Responsibility and Accountability

Academics are the heart and soul of any academic institution. The academic scenario in the country as well as globally is changing rapidly with technology, and there is more focus on interdisciplinary education, training, and research. This plan focuses on the academic aspect of the institution, defining its mission, goals, and strategies to create a world-class center of learning and research over the next fifteen years. The following activities are contemplated considering the SWOC analysis and NEP-2020 guidelines for holistic, multidisciplinary, value-based education, and flexibility for learners.

(xi) Proposed Schools, Departments, Programmes, Annual Intake and Year of Starting (as furnished in Section-10)

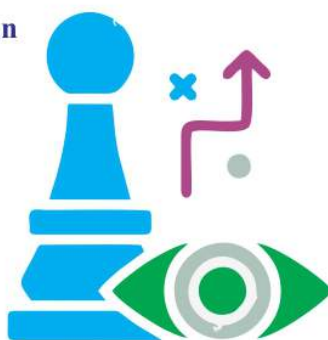
(xii) Curriculum Design:

- The curriculum development is aligned with local, regional, national, and global needs, and the revision of the curriculum also involves feedback from various stakeholders. The curriculum is dynamic, and the courses are designed based on current market and industrial needs, in accordance with NEP-2020 guidelines.
- Depending upon the curriculum pattern, the entire syllabus of the program is divided into suitable courses, which are spread evenly throughout the duration of the program, whether it follows a semester system or an annual system.
- The curriculum includes recent technologies and the opportunities existing at regional and global level with all necessary elements.
- To inculcate self-learning, students are encouraged to study some parts of the syllabus independently through assignments. This approach allows them to utilize the library, laboratory, Internet, and other related facilities.
- The University not only frames the syllabus for each course but also determines the manner of its implementation, which includes lectures, tutorials, laboratory sessions, seminars, fieldwork, projects, and other related activities.
- Depending upon its nature and level, each course will be assigned a certain number of credits/marks. These credits/marks are also indicated in the respective syllabuses. The system of credits/marks is in accordance with the guidelines of the UGC and other statutory bodies concerned.
- The syllabus for each course also indicates the scheme of evaluation or examination.
- For the semester system, the curriculum for all programmes follows the Credit-Based Semester System, Choice-Based Credit System (CBCS), Learning Outcome-based Curriculum Framework (LOCF), and the UGC Curriculum and Credit Framework for Undergraduate Programmes (CCFUP) to achieve essential and desirable course outcomes and program outcomes. It also incorporates a multidisciplinary approach and offers multiple entry and exit options. This will facilitate students in pursuing their career paths by choosing the subjects/fields of their interest.
- For the annual system, the marks, the grade points, and the GPA calculations shall be as per the respective regulatory bodies' regulations.
- However, the Grade Classification or Grade Point Computation, as may be applicable for each course/degree offered in different schools, and the Examination Pattern, etc., will be according to the guidelines of the respective National Councils, if any, or as decided by the University.

(xiii) Academic Structure:

- The programmes as a whole, as well as courses in each programme, are carefully designed to meet the requirements of the National Education Policy (NEP)-2020 guidelines. This enables the University to shape individuals and prepare them not only for a job or further learning but also for a lifetime of considerable contributions to society.
- The curriculum structure is prepared after rigorous discussions and pedagogical workshops, conducted both in-house and with external experts. Keeping in mind the national and international needs, desired graduate attributes, and guidelines such as the United Nations' sustainable development goals (UN-SDGs), a balanced structure is proposed.
- The UGC has introduced the 'Curriculum and Credit Framework for Undergraduate Programmes (CCFUP),' which incorporates multiple entry and exit options and re-entry options for Undergraduate degree programmes of either 3 or 4-year duration, with appropriate certifications at various stages, such as:
 - A UG certificate after completing 1 year (2 semesters) of study in the chosen fields of study,
 - A UG diploma after 2 years (4 semesters) of study,
 - A bachelor's degree after a 3-year (6 semesters) programme of study,
 - A 4-year bachelor's degree (honours) after eight semesters programme of study. If the student completes a rigorous research project in their major area(s) of study in the 4th year of a bachelor's degree (honours with research).
- The 4-year bachelor's degree programme is considered a preferred option since it would provide the opportunity to experience the full range of holistic and multidisciplinary education in addition to a focus on the chosen major and minors as per the choices of the student.
- The multiple entry, exit and re-entry options will be implemented in the DTBU in a phased manner after working out the eligibility criteria, norms and guidelines as decided by the Academic Council

(xiv) The 15-Year Strategic Vision Plan



Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Curriculum Design and Development - Alignment with Industry Needs - Flexibility and Choice - Incorporating interdisciplinary elements for holistic learning			
2	Research Initiatives - Establishing research clusters in emerging areas. - Encouraging faculty research grants and collaborations - Research-oriented curriculum for breakthroughs in diverse fields.			
3	Infrastructure Development - Establishing modern & technology-enabled classrooms, laboratories, and research centers - Creating a vibrant campus environment with state-of-the-art facilities			
4	Introduction of New Courses Introducing new courses focused on employability, entrepreneurship, and skill development.			
5	Technology Integration Introducing cutting-edge technologies in teaching, research, and administrative processes.			
6	Faculty Recruitment and Development - Recruiting diverse and highly qualified faculty members who are passionate about teaching and research - Providing professional development opportunities to enhance teaching methodologies and research capabilities			

7	Adherence to academic Calendar	
8	Industry Collaboration • Forging partnerships with industries to offer internship opportunities. • Collaboration with industry experts to design specialized courses and certificate programs • Collaborative projects, internships, and guest lectures by industry experts will become an integral part of the curriculum	
9	Global Engagement • Promoting international collaborations with leading universities and research institutions. • Encouraging students to participate in global exchange programs to broaden their perspectives.	
10	Accreditation and Recognition • Pursuing accreditation from recognized accrediting bodies to enhance institutional credibility. • Seeking recognition and rankings at the national and international levels.	
11	Alumni Engagement • Fostering alumni involvement through mentorship programs, guest lectures, and career guidance initiatives. • Encouraging alumni to contribute to the university's growth and development.	
12	Implementing effective Process of internal question paper setting and evaluation (effective process of question paper setting, model answers, evaluation and its compliance)	
13	Implementing effective system to ensure the questions from outcome/learning levels perspective	
14	Developing mechanism for students grievances about evaluation	
15	Student Support Services • Enhancing student support services, including academic advising, career counseling, and mental health support. • Creating a conducive environment for student clubs, extracurricular activities, and leadership development.	

16	Learning Management System • Effective teaching with the use of e-learning resources, ICT tools & Institute MOODLE, MOOCS, SWAYAM	
17	Pedagogical initiatives • real life examples • collaborative learning • ICT supported learning • interactive classrooms • e-resources & latest techniques	
18	Digital Examination and Evaluation Process	
19	Leadership Development • Creating leadership development programs to empower students with essential skills for the professional world • Offering specialized training for aspiring entrepreneurs and change-makers.	
20	Social Impact and Outreach • Extending the university's expertise and research outcomes to benefit local and global communities. • Engaging in sustainable development projects and social initiatives that address pressing challenges.	

(xv) The 5-Year Rolling Implementation Plan

First Year

- Based on the Detailed Project Report (DPR) submitted to UGC, details of programmes to be started, faculty required, infrastructure and financial planning are worked out.
- Completing all basic Academic and Infrastructural needs, recruiting the faculty and staff, for first year as per schedule.
- Appointment of the essential Officers of the University
- Constitution the Statutory Bodies namely Board of Studies (BoS), Academic Council (AC) and the Executive Council (EC) and other Committees for smooth and effective functioning of the DTBU as per UGC Regulations 2023.
- Call for students admissions
- Designing the structure of course curriculum and syllabus for the courses to be offered by the Schools, maintaining Quality and Standards in Higher Education, incorporating the Choice Based Credit System (CBCS) and UGC guidelines, and creating an optimal learning environment and support to students as per Sections 9, 11 and 12 of the NEP and obtain statutory approvals from BoS, AC and EC.
- Starting academic activities as per the Academic calendar.
- Conducting necessary Training as part of Teacher Education and Motivated, Energised and Capable Faculty as per Sections 13 and 15 of the NEP 2020.
- Establishment of Planning and Monitoring Cell.
- Conducting BoS, AC, and EC meetings to obtain approval for the commencement and next year courses.
- Facilitating multiple entry and exit options with a UG certificate after completing 1 year (2 semesters) of study in the chosen fields of study.
- Establishing centers of excellence and research facilities to promote cutting-edge research and innovation.

Second Year

- Completing all basic Academic and Infrastructural needs, recruiting the faculty and staff, for second year as per requirement.
- Establishing a mechanisms for continuous curriculum review and enhancement based on feedback from students, faculty, and industry experts.

- As per the guidelines of various regulatory bodies and the NEP- 2020, a provision has to be made for the candidates for admission into the second year (Lateral Entry) of certain UG courses.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Facilitating multiple entry and exit options with a UG diploma after 2 years (4 semesters) of study.
- Starting academic activities as per the Academic calendar.
- Digital Examination and Evaluation Process.

Third Year

- Completing all basic Academic and Infrastructural needs, recruiting the faculty and staff, for third year as per requirement.
- Establishing partnerships with industry leaders for internships, industry visits, and guest lectures to bridge the gap between academia and the professional world.
- Facilitating multiple entry and exit options with a bachelor's degree after a 3-year (6 semesters) programme of study.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Starting academic activities as per the Academic calendar.
- Focusing on quality assurance and academic excellence by introducing internal quality assurance mechanisms and processes.

Fourth Year

- Completing all basic Academic and Infrastructural needs, recruiting the faculty and staff, for fourth year as per requirement.
- Strengthening collaborations with international universities and institutions for student and faculty exchange programs.
- Starting academic activities as per the Academic calendar.
- Facilitating multiple entry and exit options with a 4-year bachelor's degree (honours) after eight semester's programme of study.
- Preparing for accreditation processes, ensuring compliance with regulatory standards and quality assurance benchmarks.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.

Fifth Year

- Establishing an alumni network to foster strong relationships with former students and involve them in the university's growth and development.
- Seeking affiliations with relevant accreditation bodies and international organizations to enhance the university's reputation and global standing.
- Regularly assess the progress of the university's academic plan and make necessary adjustments based on feedback and changing educational trends.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Introducing cutting-edge technologies in teaching, research, and administrative processes.
- Conducting a comprehensive assessment of current infrastructure and identify areas for improvement.

The Remaining 10-Year Plan

Sixth Year

- Curriculum Review and Development
 - Alignment with Industry Needs.
 - Incorporating interdisciplinary elements for holistic learning.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Strengthening Industry Collaboration.
 - Forging partnerships with industries to offer diverse internship opportunities.
 - Collaboration with industry experts to design specialized courses and certificate programs.
 - Collaborative projects, internships, and guest lectures by industry experts will become an integral part of the curriculum.
 - Launching skill-oriented courses in collaboration with industry experts.

Seventh Year

- Infrastructure Upgradation
 - Upgrading laboratories, classrooms, and research centers and technology facilities to meet modern standards.
- Creating a vibrant campus environment with state-of-the-art facilities.

- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Research Leadership and Innovation.
- Increasing the number of research publications and patents across disciplines.
- Establishing research clusters in emerging areas.
- Encouraging cross-disciplinary research and faculty collaboration.
- Research-oriented curriculum for breakthroughs in diverse fields.
- Collaboration with research institutions for joint research projects.

Eighth Year

- Global Engagement
 - Promoting international collaborations with leading universities and research institutions.
 - Encouraging students to participate in global exchange programs to broaden their perspectives.
 - Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
 - Implementing effective Process of internal question paper setting and evaluation (effective process of question paper setting, model answers, evaluation and its compliance).
 - Launching faculty development programs to enhance research capabilities and teaching skills.

Ninth Year

- Providing professional development opportunities to enhance teaching methodologies and research capabilities.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses
- Community Engagement and Societal Impact
- Initiating outreach programs addressing local community needs.
 - Establishing partnerships for community-based research and development initiatives.

Tenth Year

- Conducting a comprehensive assessment of current infrastructure and identify areas for improvement.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Establishing specialized research centers focused on emerging areas.
- Accreditation and Recognition
 - Pursuing accreditation from recognized accrediting bodies to enhance institutional credibility.
 - Seeking recognition and rankings at the national and international levels.
- Student Support Services
 - Enhancing student support services, including academic advising, career counseling, and mental health support.
 - Creating a conducive environment for student clubs, extracurricular activities, and leadership development.

Eleventh Year

- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Advanced Learning Management System
 - Enabling effective teaching through the utilization of e-learning resources, ICT tools, and Institute MOODLE, MOOCS, SWAYAM, and 360-degree learning.
- Advanced Technology Integration and Digital Transformation
 - Offering a variety of courses across diverse disciplines through online distance learning to enhance access to education.

Twelfth Year

- Alumni Engagement
 - Fostering alumni involvement through mentorship programs, guest lectures, and career guidance initiatives.
 - Encouraging alumni to contribute to the growth and development of the university.
- Innovation and Entrepreneurship Ecosystem
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Conducting faculty development programs to enhance research capabilities and teaching skills.

Thirteenth Year

- Advanced Pedagogical Techniques
 - peer and collaborative learning
 - flipped classroom techniques
 - ICT supported learning
 - interactive classrooms•
 - e-resources & latest techniques
 - real life examples
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Attracting international faculty members to diversify perspectives.

Fourteenth Year

- Conducting a comprehensive assessment of current infrastructure and identify areas for improvement.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Leadership Development
 - Creating leadership development programs to empower students with essential skills for the professional world.
 - Offering specialized training for aspiring entrepreneurs and change-makers.

Fifteenth Year

- Social Impact and Outreach
 - Extending the university's expertise and research outcomes to benefit local and global communities.
 - Engaging in sustainable development projects and social initiatives that address pressing challenges.
- Conducting BoS, AC, and EC meetings to obtain approval for the and next year courses.
- Accreditation and Recognition
 - Pursuing accreditation from recognized accrediting bodies to enhance institutional credibility.
- Strengthening the university's international reputation through strategic collaborations.

(b) Faculty Recruitment Plan

(i) Overview

The MNR-HERA proposed DTBU adopts a proactive approach towards aligning its goals and objectives with the faculty recruitment process to achieve a perfect match. Highly qualified, talented and experienced national or international faculty will be recruited to achieve quality higher education in all the Departments. The faculty positions will be created in each department initially as per the guidelines of UGC (1 Professor + 2 Associate Professors + 4 Assistant Professors) and will be further expanded subsequently with additional positions depending the number and the level of programmes offered by the departments as per the norms and guidelines of the national regulatory bodies. The MNR-HERA DTBU wishes to adopt the guidelines of the NEP 2020 and the CCFUP 2022 of the UGC to maintain quality holistic and multi-disciplinary education. The Plan is to recruit 50 % of the required total faculty in the FIRST YEAR of commencement of the academic session in the proposed DTBU for smooth and effective conductive of all academic programmes in the departments.

(ii) The 15-Year Strategic Vision Plan

The faculty recruitment plan focuses on building a diverse and talented faculty team that fosters academic excellence, encourages research innovation, and cultivates a vibrant learning environment. Over the course of 15 years, the institution aims to establish itself as a renowned center of learning and research, attracting top faculty from across the globe.

- A faculty recruitment plan should meet the requirements of the academic plan.
- The recruitment will be based on designation wise distribution of workload as defined by UGC under its regulations on minimum qualifications for appointment of teachers and other academic staff in Universities.
- Open National and International Advertisements will be issued, inviting application from Indian and Foreign experts for different teaching posts, and they will be offered salaries as per of UGC scales.
- The Minimum Qualifications and Experience for the teaching posts in different cadres shall be as prescribed by the UGC Regulations 2018 or as prescribed the relevant national regulatory bodies.
- The Constitution of the Selection Committees for different cadres of teaching posts will be as specified in the UGC Regulations 2018.
- The recommendations of the selection committees and as approved by the Executive Council shall be implemented for appointments as per Section 20 of the UGC Regulations 2023.
- Recruiting highly qualified and motivated faculty is crucial to creating a vibrant learning environment, fostering research excellence, and achieving the institution's academic goals.
- The faculty plan should strive to maintain a faculty-student ratio of at least 1:20 for undergraduate (UG) programs and 1:15 for postgraduate (PG) programs.

The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Faculty Requirements Assessment Conducting faculty requirement analysis across disciplines and research areas.			
2	Establishing a Diverse Faculty Team Building a diverse, inclusive faculty team with varied backgrounds and expertise.			
3	Industry and International Collaboration - Faculty-industry collaboration for real-world applications. - Encouraging global collaboration for diverse perspectives.			
4	Focusing on Research and Innovation Attract research-oriented faculty who are committed to driving innovation and making significant contributions to their respective fields.			
5	Academic Excellence Emphasis Prioritize hiring faculty members with exceptional academic qualifications and a track record of excellence in teaching and research.			
6	Competitive Compensation and Benefits Offering competitive salary packages and attractive benefits to attract top-notch faculty members.			
7	Faculty Development Programs Implementing faculty development programs to enhance teaching methodologies, research skills, and leadership abilities.			
8	Motivation & support to achieve higher qualification during service.			
9	State-of-the-Art Infrastructure Ensuring the availability of state-of-the-art infrastructure, research facilities, and technology to support faculty and research activities.			
10	Recognition and Awards Establishing recognition and award systems to acknowledge and appreciate faculty members' outstanding contributions.			
11	Incentives for Research and Publications Providing incentives and grants for faculty members who publish research in reputable journals and contribute to the university's research reputation.			

12	Continuous Review and Improvement Regularly review the faculty recruitment strategies and make necessary adjustments based on performance and changing needs.	
13	Monitoring and Evaluation Establishing a system for monitoring and evaluating the effectiveness of the faculty recruitment plan in achieving the university's long-term objectives.	

(iii) The 5-Year Rolling Implementation Plan

- The aim of this faculty recruitment plan is to attract and hire highly qualified, talented and experienced individuals to build a strong academic workforce. The plan ensures compliance with regulatory guidelines and the specific needs of the university.
- The meritorious, qualified and, eligible candidates shall be recruited as per the norms of the UGC.
- The faculty requirement is based on the student strength, and the proposed number of faculty members will be recruited over the next five years through a transparent, open selection process.

(iv) Proposed Faculty Strength for 5 Years (Total by the end of 5th Year)

	School	Annual Intake (Students)	Total Strength (Students)	Dean/ Director (Professor)	Professor	Assoc. Professor	Assistant Professor	Tutors	Total
1	SICO	984	3672	1	30	60	62	48	201
2	SIKS	642	1896	1	15	30	32	24	102
3	STLA	390	1510	1	11	23	47	-	82
4	SENS	210	790	1	6	12	13	11	43
5	SCWL	140	470	1	4	7	8	6	26
6	SAHS	696	2892	1	22	43	44	37	147
7	SMLW	345	1215	1	10	20	21	18	70
8	SHBM	230	830	1	7	14	14	11	47
9	CRIN	30	70	1	2	4	4	4	15
	Total	3667	13345	9	107	213	245	159	733

- The recruitment will be based on designation wise distribution of workload as defined by UGC under its regulations on minimum qualifications for appointment of teachers and other academic staff in Universities. UGC pay will be offered to all the deserving candidates. Even higher pay will be offered to more deserving candidates in order to attract qualified and eminent Faculty.

SICO	:	School of Intelligence and Computing
SIKS	:	School of Indian Knowledge Systems
STLA	:	School of Technology-Led Agriculture
SENS	:	School of Energy Studies
SCWL	:	School of Community Wellness and Lifestyle Management
SAHS	:	School of Allied Health Sciences
SMLW	:	School of Management and Law
SHBM	:	School of Health and Biomedical Sciences
CRIN	:	Center for Research and Innovation

First Year

- Conducting a comprehensive analysis of academic departments and programs to determine the initial faculty requirements.
- Developing job descriptions and qualification criteria for faculty positions.
- Advertising and initiating the recruitment process for open positions nationally and internationally, targeting renowned academic institutions and relevant platforms.
- Establishing a transparent and efficient recruitment process that includes screening, interviews, and evaluations.
- Recruiting faculty members who are not only experts in their fields but also aligned with the institution's vision.

Second Year

- Assessing the progress and effectiveness of the faculty recruited during the first year
- Analyzing any potential gaps or areas requiring additional faculty resources.
- Expanding recruitment efforts to additional disciplines that are essential for the university's growth.
- Introducing a tenure-track system to attract and retain high-quality faculty members.

- Advertising new positions in accordance with the identified needs, ensuring a diverse range of academic disciplines.
- Initiating faculty orientation programs to integrate new faculty into the university's culture.

Third Year

- Evaluating the faculty composition and identify any departments or disciplines that require further strengthening.
- Focusing on recruiting faculty with research and industry experience to bridge the academia-industry gap.
- Advertising new positions strategically, targeting specialized journals, conferences, and other relevant platforms.
- Building collaborations with renowned universities and research institutions to attract highly qualified candidates.
- Implementing faculty development programs to enhance teaching methodologies and research capabilities.
- Encouraging interdisciplinary faculty appointments to promote cross-disciplinary collaboration.

Fourth Year

- Conducting a comprehensive review of the faculty composition to assess its alignment with the university's vision and academic objectives.
- Advertising remaining positions, focusing on areas that require additional expertise or specific research domains.
- Prioritizing hiring faculty members with a strong record of research publications and grants.
- Establishing collaborations with renowned universities and research institutions to attract experienced faculty.
- Enhancing the recruitment process by using digital platforms and networks to reach a wider pool of candidates.

Fifth Year

- Developing partnerships with international institutions for faculty exchange programs.
- Implementing faculty performance evaluation mechanisms to ensure continuous improvement.

- Implementing a faculty excellence recognition program to acknowledge and celebrate faculty achievements in teaching, research, and service. Recognize outstanding contributions through awards, honors, and public recognition.
- Developing a sustainability plan to ensure the continued growth and success of the university's faculty community.
- Recruiting faculty members with a commitment to innovation and incorporating modern teaching techniques.

The Remaining 10-Year Plan

Sixth Year

- Focusing on hiring faculty members with a global perspective who can contribute to the university's internationalization efforts.
- Strengthening the recruitment of faculty members from underrepresented groups to promote diversity and inclusivity.

Seventh Year

- Introducing recruitment policies that emphasize collaboration, teamwork, and interdisciplinary research.
- Establishing endowed professorships and chairs to attract distinguished scholars and researchers.
- Ensuring transparent and standardized recruitment processes that align with UGC guidelines.

Eighth Year

- Implementing faculty mentorship programs to support the professional growth of junior faculty members.
- Creating an advanced faculty recruitment portal on the university's website to streamline the application process.

Ninth Year

- Prioritizing hiring faculty members with expertise in emerging fields and technologies.
- Developing a faculty recruitment marketing strategy to enhance the institution's reputation.
- Collaborating with industry partners to recruit adjunct faculty members who can provide real-world insights.

Tenth Year

- Focusing on recruiting faculty members with a track record of successful grant applications and research projects.
- Establishing collaborative agreements with government agencies to attract faculty members engaged in policy research.

Eleventh Year

- Expanding recruitment efforts to attract renowned international faculty members as visiting professors.
- Strengthening the integration of faculty members into the university's research centers and labs.

Twelfth Year

- Implementing innovative recruitment strategies, such as virtual faculty job fairs and webinars.
- Introducing faculty retention programs to ensure long-term commitments and career growth.

Thirteenth Year

- Integrating faculty recruitment with the university's strategic goals and academic plan.
- Establishing recruitment committees with diverse representation to ensure fair and unbiased selection.

Fourteenth Year

- Evaluating the effectiveness of the faculty recruitment process through feedback and data analysis.
- Implementing mentorship and onboarding programs to support the integration of new faculty members.

Fifteenth Year

- Continuing to recruit faculty members who align with the institution's evolving research and academic priorities.
- Promoting the university's success stories in faculty recruitment to enhance its reputation in academic circles.

(c) Students Admission Plan

(i) Overview

The DTBU strongly believes that a well conceived admission plan plays a critical role in shaping the university's future by bringing in a well-rounded and motivated student body that aligns with the institution's values, contributes to its academic community, and prepares graduates to succeed in their future endeavors. The DTBU adopts a uniform transparent and sustained admission plan for admissions based on merit without any discrimination and open to all persons of either region, religion, sex, caste, creed, race or class maintaining inclusion and equity. The University maintains an All- India character and provides merit based admissions in a fair and transparent manner. Admissions to various courses shall be open to Indian citizens, Non-Resident Indians, Persons of Indian Origin. The University shall also admit foreign students as per the Government of India and State Government guidelines. The DTBU is committed to provide quality higher education with global standards with scope for improvement on a constant basis. It shall implement all the relevant provisions and guidelines of the National Education Policy (NEP) 2020 for quality higher multi-disciplinary education like the multiple entry, multiple exit and dual degrees for the benefit of the students

- To provide a uniform, transparent and sustained admission policy for the benefit of all stakeholders and for maintaining inclusion and equity. The admissions are done in a transparent manner and on merit basis only.
- MNR University is committed to provide quality higher education with global standards with scope for improvement on a constant basis.
- To create enabling environment for joint research projects and Memorandums of Understanding (MoUs) for exchange of students and staff with international universities. • To implement all the relevant provisions and guidelines of the National Education Policy (NEP) 2020 for Quality Higher Education in general and the provisions of “Equity and Inclusion in Higher Education” and “Optimal Learning Environment and Support for Students”.
- The admissions policy applies to all admissions under MNR University and is subject to review annually.

(ii) Selection and Admission of Students

- The system proposed to be followed for selecting students for admission to the programmes of study of the University is based on the process explained below.
- Student Application process (online / offline)

- Admission of students shall be strictly based on merit in the entrance exam conducted by a Government National Testing Agency or the Institution deemed to be University and as prescribed by the appropriate statutory authority, wherever applicable and in case of no entrance examination, the admission of students to the Institution deemed to be University shall be made in the manner specified in the Prospectus.
- Criteria of selecting students, programme wise selection process to be resolved and notified
- Centralized student services including counseling for admission, career development and placement.
- Reservation for various categories will be implemented as per the regulations, in accordance with the provisions of the Constitution of India and any Act of Parliament.
- Scholarship schemes

(iii) Fee Structure

- The rules and regulations regarding the fee structure, issued by the concerned statutory bodies, namely UGC, AICTE, NMC, etc., shall be applicable from time to time.
- The university may provide fee concessions, scholarships, or allocate seats to meritorious students belonging to socially and economically deprived groups of society.
- By following this 15-year strategic student admission plan, the University will be well-positioned to become a renowned institution, attracting the best students, faculty, and partnerships, and contributing significantly to the field of education and research.

(iv) The 15- Year Strategic Vision Plan

This plan aligns with the institution's vision, mission, and academic objectives. The first step is to identify the academic disciplines and programs the university has to offer, considering the emerging demands of various industries and society. Understanding the local and global job markets and educational trends will help tailor the programs to meet the needs of both students and employers. The admission plan emphasizes the importance of extracurricular activities, co-curricular achievements, and leadership qualities. These aspects can offer a holistic view of a student's capabilities beyond academic achievements alone. By attracting talented students, fostering academic growth, forging strategic partnerships, nurturing research and innovation, and engaging with alumni, the university can emerge as a beacon of knowledge and a driving force in shaping the future of education.

The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Investing in modern infrastructure fosters a conducive learning environment			
2	Strategic faculty recruitment for excellence			
3	Designing diverse programs for emerging fields and industry relevance			
4	Securing accreditation from reputable educational bodies enables collaborations with other esteemed universities			
5	Implementing targeted student outreach programmes			
6	Offering scholarships and financial aid options fosters inclusivity, allowing deserving students from all backgrounds to access quality education			
7	International collaborations and student exchange programs			
8	Collaborating with industries and organizations to provide real-world experiences and opportunities for students strengthens their skill sets and employability			
9	Continuous enhancement of campus facilities to accommodate the growing student population is necessary to provide a comfortable and conducive learning environment.			
10	Establishing specialized centers of excellence and encouraging faculty and students to engage in research with dedicated resources and incentives			
11	continuously introducing new academic programmes			
12	Global recognition and rankings through academic achievements, impactful research, and societal contributions.			
13	Regular assessments and feedback			

(v) The 5-Year Rolling Implementation Plan

First Year

- Understand and adhere to the regulatory guidelines and requirements set forth by the appropriate governing body
- Developing clear and transparent admission policy that encompasses eligibility criteria, reservation policies, and selection procedures.
- Creating an online admission portal to streamline the application process, ensuring ease of access and transparency.
- Conducting awareness campaigns to inform prospective students about the university's offerings, faculty, facilities, and academic programs.
- Establishing collaborations with schools, colleges, and educational institutions to build a strong network and promote the university as an ideal higher education destination.
- Set up an admissions committee to review and approve applications.

Second Year

- Evaluating the effectiveness of the admission process implemented in the first year and make necessary improvements based on feedback received from students and staff.
- Enhancing the university's brand presence through digital marketing, social media, and targeted advertisements to reach a wider pool of prospective students.
- Implementing a robust system for evaluating and assessing applicants based on their academic records, entrance examinations, interviews, and other relevant criteria.
- Establishing a transparent and unbiased selection committee comprising experienced faculty members to ensure fair evaluation and selection.
- Strengthen the university's scholarship and financial aid programs to attract and support meritorious students from diverse backgrounds.

Third Year

- Conducting regular reviews of the admission process, analyzing trends and making necessary adjustments to improve efficiency and effectiveness.
- Expanding outreach efforts by participating in education fairs, organizing information sessions, and conducting workshops in various regions to engage with potential students
- Diversify the range of academic programs and disciplines offered to cater to a broader spectrum of student interests and aspirations.
- Developing partnerships with industry leaders and organizations to offer internships, co-op programs, and placement opportunities for students.
- Implementing a comprehensive orientation program for admitted students, providing them with information about the university, campus life, and support services available.
- Expanding online presence through social media and relevant platforms.

Fourth Year

- Continuously monitor and evaluate the success of the admission plan, making necessary adjustments to align with changing regulatory guidelines and industry requirements.
- Explore international collaborations and student exchange programs to attract a global student community and promote cultural diversity on campus.
- Implementing a robust student grievance redressal mechanism to address any concerns or complaints related to the admission process.
- Maintain open lines of communication with admitted students, providing them with timely updates and information regarding enrollment, course selection, and academic requirements.
- Foster a supportive environment by providing comprehensive counseling and extracurricular activities to facilitate overall student development.
- Hosting admission fairs and open house events.
- Enhance the admissions website with comprehensive information.

Fifth Year

- Implementing an alumni referral program to encourage alumni to refer prospective students.
- Regularly assess the effectiveness of the admission plan and make necessary adjustments based on data and feedback.
- Continuously improve the admission process to enhance efficiency and student satisfaction.
- Developing partnerships with international schools for global admissions.
- Implementing a streamlined application review process.

The Remaining 10-Year Plan

Sixth Year

- Utilizing predictive analytics for targeted student recruitment.
- Launching an ambassador program with current students for outreach.
- Implementing centralized admission helpline for queries.

Seventh Year

- Collaborating with student associations for peer-to-peer promotion.
- Conducting webinars and workshops for prospective students.
- Expanding partnerships with NGOs for underprivileged student admissions.

Eighth Year

- Exploring opportunities for admissions through industry partnerships.
- Implementing an admissions dashboard for real-time updates.
- Enhancing the admissions process for diversity and inclusivity.

Ninth Year

- Evaluating and refining admission processes based on feedback.
- Strengthening collaborations with government agencies for scholarships.
- Implementing personalized communication strategies for admitted students.

Tenth Year

- Initiating a mentorship program for admitted students.
- Leveraging virtual reality for campus tours during the admission process.
- Introducing gamified elements to engage potential students.

Eleventh Year

- Implementing an early admissions option for exceptional students.
- Collaborating with industry for co-branded scholarship programs .
- Enhancing the use of chatbots for immediate response to inquiries.

Twelfth Year

- Expanding digital marketing efforts to reach a wider audience.
- Developing a mobile application for a seamless application process.
- Implementing admissions workshops in various cities.

Thirteenth Year

- Launching a referral program for faculty and staff to recommend candidates.
- Hosting virtual campus tours for international applicants.
- Implementing an online interview process for remote candidates .

Fourteenth Year

- Continuing alumni involvement in the admission process.
- Establishing partnerships with companies for sponsored admissions.
- Leveraging AI for personalized admission recommendations.

Fifteenth Year

- Reviewing and updating admission policies as per changing trends.
- Fostering collaborations with research institutions for doctoral admissions.

(vi) Proposed Schools, Departments, Programmes, Annual Intake and Year of Starting (as furnished in Section-10)

(d) Research Plan & Policy

(i) Overview

The MNR-HERA DTBU adopts a well-structured and forward-thinking approach to foster academic excellence, research, innovation and societal impact. The Research and Innovation activities will be undertaken at all levels of UG and PG education. The aim of the DTBU is to become a Multi-Disciplinary Education and Research University with teaching and research activities right from UG level in all Schools with UG (Hons) with Research as per the provisions of NEP 2020 and CCFUP 2022 of the UGC coordinated by the Center for Research and Innovation to be established by the DTBU. The research plan outlines the vision, mission, and key initiatives that will drive the institution's transformation into a center of research and academic distinction. With a focus on interdisciplinary collaboration, cutting-edge facilities, and a commitment to societal relevance, the plan aims to propel the institution into becoming a globally recognized leader in education and research.

Research and innovation are essential drivers of a dynamic economy, an informed society, and a vibrant culture. The university aims to create centers of excellence for research and development in all specialized fields of education provided in the university. Additionally, it seeks to create a supportive and strategic framework that enables researchers to conduct high-quality, impactful research, contributing to the academic, economic, and social development of the institution and society as a whole. This approach would allow the development of new ideas and extend beyond the academic sector to industry.

These focus areas encompass a wide spectrum of disciplines, ranging from engineering and technology to health sciences, social sciences, and sustainable development. Emphasis will be placed on multidisciplinary research, encouraging cross-pollination of ideas to address complex real-world problems. Through strategic partnerships with industries, government agencies, and international research institutions, the university aims to undertake research that leads to tangible solutions and innovations. The plan also includes provisions for incentivizing faculty members to engage in high-impact research activities and secure external funding for research projects.

(ii) Research Policy and the Center for Research and Innovation

The MNR-HERA proposed DTBU is committed to promote research culture among the faculty and students of all the schools coordinated by the Center for Research and Innovation by adopting a Research Policy. The Center for Research and Innovation is established exclusively for undertaking, guiding and monitoring the multi-disciplinary and inter-disciplinary research across the disciplines and for encouraging critical thinking, proper debate and discussion leading to innovative research in the university among the UG, PG and Ph D students and research staff of various disciplines as envisioned in the NEP 2020. The proposed DTBU strongly believes that basic long-term research provides the University for future development of these Schools. The Research Policy aims to develop and promote scientific temper and research aptitude of all learners; to realize the vision and mission of the Institution and to identify research areas of academic, practical and socially relevant significance thus fulfilling the strategic needs and contributing to the economic development of the country. It also aims at ensuring that the research activities of the Schools of the

University conforms to all applicable rules, regulations and contemporaneous researchable issues outlined by the national regulatory bodies as well as to establish the standards and norms relating to safe and ethical conduct of research. The Research Policy provides a broad frame work to the research activities with the following objectives

- To provide a proper coordination of all research activities of the Schools and aligning these to the aims, goals and objectives of the university
- To identify and inform researchers about the appropriate research opportunities announced by different academic, research, industry or Government organizations.
- To promote multi-disciplinary and interdisciplinary research and establish modalities for preparing and undertaking joint research projects covering more than one knowledge domain as well as policies or involving external agencies/experts in such projects.
- To create an awareness about Patents and Intellectual Property Rights and motivate them to apply for Patents.
- To take initiative for granting study leave, sabbatical leave, duty leave, seed money, reduction in workload, etc. to deserving faculty members for advanced research.
- To identify and establish linkages including MOU's for long term relationships with National and International research organizations for widening the scope of research opportunities and funding options available to the Faculty and Students of the School.
- To promote collaborations with International and National Academic Institutions of Higher Learning and promote linkage with Industry.
- To encourage & facilitate the publication of the research works in reputed academic International / National journals and also to facilitate the presentation of the research work through academic events such as workshops / seminars / conferences.
- To create an ecosystem for innovations including Incubation Center and other initiatives for creation and transfer of knowledge.
- To facilitate community oriented research initiatives and to transfer the research findings for the social and economic development of the community. To ensure the quality of all research activities of the Schools of the University and to observe the highest standards of ethics and integrity in the conduct of their research.
- Code of Ethics for Research

All Students & Staff pursuing research in the Schools of the University are expected to maintain high standards of integrity, honesty and professionalism in respect of all the work undertaken by them. Regarding paper publications, each student can avail the facility in the University Campus to check for plagiarism whenever a paper is to be published in Peer Reviewed Journals, the Journal will normally have a Committee to check the originality in the content.

An Ethics Sub-Committee shall be constituted and a Standard Operating Procedures (SOP) shall be adopted for monitoring research activities of the Schools of the University. The objective of this SOP is to contribute to the effective functioning of the University of by ensuring a qualitative and consistent ethical review mechanism.

Aims of the Research Policy

1. To provide a transparent, sustained and encouraging policy providing an enabling environment for research by staff and students.
2. To identify and prioritize the thrust areas for research to be conducted by the proposed MNR-HERA DTBU
3. To provide essential infrastructure support for the research work.
4. To establish rational, transparent, merit based decision-making systems for evaluation and monitoring of the research projects.
5. To provide the financial and other support for research.
6. To promote the quality research and motivate the faculty members.
7. To Integrate UG (Hons) Research, PG and Ph.D Research into the main stream research systems and provide necessary facilities.
8. To provide general guidelines for publishing the research outputs.

The Center for Research and Innovation

The Center for Research and Innovation will be responsible to organise, execute and monitor the Research Internships of all the programmes and research projects of inter disciplinary and multi-disciplinary nature by all departments.

The Center for Research and Innovation shall implement the research policy approved by the Academic Council to promote the research, thus motivating the faculty members and students of each School under the University to undertake the research activities by adopting the guidelines of this policy.

(iii) Research Funding and Seed Money

The proposed DTBU University shall grant some seed money to enable researcher(s) to carry out preliminary research work. The data and results obtained from this preliminary work could be utilized for attracting extramural research funds from funding agencies such as DBT, DST, ICMR, ICAR, AICTE, BGF, MGF etc. or any other national and foreign funding agencies.

- 1 Seed money will be provided by the University on approval by the competent authority to principal investigators who desire to undertake research. The duration for the project will be about 1 year.
- 2 Amount of seed money will be as decided by the DTBU depending on merit of the project; however it can be increased or decreased depending on decision of screening committee in order to ensure the quality of project.

- 3 In order to encourage full time research scholars for the Ph.D. or for the post-doctoral research work, the University will provide fellowships as may be decided by the University
- 4 The seed money can be availed through the Center for Research and Innovation
- 5 The norms and standards for submission of Research proposals will be specified by the Center for Research and Innovation

(iv) Research Incentives

The MNR Educational Trust has been encouraging its teaching staff and research scientists to take up innovative research on contemporaneous research gaps and needs. It has been granting incentives to the faculty for their research achievements every year from its own funds. The incentives granted in the last four years are given below.

Incentives granted to the Faculty in the last 4 years (Amount in Rupees)

S. No	Name of the College	2019-20		2020-21		2021-22		2022-23	
		No. of Faculty	Total Amount	No. of Faculty	Total Amount	No. of Faculty	Total Amount	No. of Faculty	Total Amount
1	MNR Medical College and Hospital	6	68000	3	55500	6	114000	4	104000
2	MNR Dental College and Hospital	16	180000	5	40000	21	602700	19	575656
3	MNR Homoeopathic Medical College and Hospital	2	25000	2	20000	16	147900	18	360000
4	MNR College of Pharmacy	14	245000	7	110000	17	459000	14	369999
5	MNR Sanjeevani College of Physiotherapy	1	15000	0	0	0	0	2	15000
6	MNR School of Nursing	0	0	1	5000	2	35000	1	45000
7	MNR College of Engineering & Technology	1	15000	0	0	2	35000	3	50000
8	MNR Rural PG College and Education	3	45000	2	20000	2	40000	3	75000
	Total	43	593000	20	250500	66	1433600	64	1594655

Since the main aim of the proposed DTBU is to focus on unique teaching and research programmes to meet the 21st century requirements nationally and globally, the MNR-HERA, through the Center for Research and Innovation wishes to continue the legacy and proposes to award incentives to teachers and research scientists of all the departments under the university for various academic and research achievements. The modalities for grant of incentives for the DTBU will be framed by the Academic Council later

(v) Focus on Unique Research Topics to meet 21st Century Requirements

In line with the spirit of NEP 2020, that the Knowledge creation and Research are critical in growing and sustaining a large and vibrant economy, uplifting society and for making India to even rise to greater heights, the MNR-HERA proposed to be DTBU aims to lay focus on teaching and

research in the proposed 73 unique UG, PG and Ph D programmes in 28 Departments dedicated to skilled manpower development in unique disciplines in India with applications of prominent cutting-edge technologies addressing the strategic needs, skilled manpower development, economic development, preservation of environment, promotion of Indian knowledge systems, arts and cultural heritage of the country and also contributing to the SDGs of the UN. The proposed DTBU with proper ambiance of holistic and multi-disciplinary Education in single campus at Sangareddy will have an added advantage for inter-disciplinary thinking, research, debate, discussion and innovation across the proposed Departments to develop individuals with 21st Century capabilities. It has accordingly proposed the research component in UG, PG and Ph D programmes and individual research by faculty and scientists. The following unique research topics are proposed to be taken up by the students and faculty of different departments in the proposed DTBU which will be coordinated by the Center for Research and Innovation

1. Research on Cutting-Edge Technologies and their Applications

The fields of Artificial Intelligence and Machine Learning (AIML), Data Science, Mechatronics, and Additive Manufacturing serve as cornerstones of innovation and advancement in the constantly changing world of modern science and technology. These cutting-edge technologies have broken through barriers and redefined how we view and engage with the world. We delve into the profound ramifications and countless applications that these disciplines have as we set out on this path of research and understanding. The dynamic combo of artificial intelligence and machine learning has emerged as the leader in transforming our digital environment. Combining data and algorithms enables machines to mimic human cognition by learning, adapting, and making defensible decisions. Our lives are now safer, more effective, and more interconnected than ever because to the transformative uses of AIML, which cut across industries and range from autonomous vehicles to predictive analytics in healthcare. The "new oil" of the digital age, known as data science, uses the power of data to reveal insights and patterns that were previously imperceptible to the human eye. Data science has an impact on a variety of industries, including banking, marketing, climate research, and personalized treatment.

The field of mechatronics, which combines mechanical engineering, electronics, computer science, and control engineering, has produced intelligent machines that smoothly combine several fields of study. It is thanks to these intelligent systems that manufacturing procedures, precise medical equipment, and even humanoid robots that can move around our homes and workplaces have all been automated. Industries are changing quickly, and our daily lives are being improved, thanks to mechatronics. The traditional way of design, develop, and produce items have been changed by additive manufacturing, sometimes known as 3D printing. This ground-breaking technology is the pinnacle of invention since it enables us to build complex structures precisely and layer by layer. Additive manufacturing is changing the norms of production and design, ushering in a new era of innovation and efficiency. It is producing anything from bespoke prosthetics to aerospace components. These innovative technologies are not only the result of scientific research; rather, they

constitute the cornerstone of a dynamic, interconnected society, where the only restrictions are those imposed by human imagination. The goal of this research project is to explore the virtually endless possibilities and uses that these technologies open up for humankind. The School of Intelligence and Computing of the proposed DTBU in coordination with the Center for Research and Innovation contemplates to carryout advanced research on the following cutting edge technologies

1. Smart Manufacturing Systems: Explore how mechatronics can be applied to optimize manufacturing processes, such as integrating sensors, actuators, and control systems to create agile and adaptable production lines that respond to changing demands and improve energy efficiency.
2. AI in Natural Language Processing: Investigate cutting-edge methods for deciphering and producing human language using AI in NLP. This might entail enhancing the functionality of AI chatbots, creating improved machine translation tools, or even pushing the boundaries of sentiment analysis and emotion identification.
3. AI for Climate Change and Sustainability: Look at the use of AI and ML to solve environmental problems like climate modeling, renewable energy optimization, resource management, and carbon footprint reduction. In recent years, this field has grown significantly in importance.
4. Ethical AI and Bias Mitigation: Focus on developing methods to identify and mitigate biases in AI and ML models, particularly those that impact underrepresented groups. Research could involve creating fairness-aware algorithms, addressing algorithmic bias, and ensuring responsible AI deployment.
5. Agricultural Automation: Study the application of mechatronics in precision agriculture, including the design of autonomous farming equipment, drones, and sensor networks to enhance crop monitoring, yield prediction, and resource management.
6. Humanoid Robot Control: Investigate advanced control algorithms and artificial intelligence techniques for the precise and lifelike control of humanoid robots. This could involve improving walking stability, natural language processing, and human-robot interaction.
7. Data Privacy and Security: With increasing concerns about data breaches and privacy violations, there's a need for research into robust data encryption, privacy-preserving machine learning, and secure multi-party computation.
8. Ethical and Fair AI: Explore methods and techniques for ensuring AI models are fair and unbiased. This research area aims to mitigate biases in training data and algorithms to prevent discrimination and promote fairness in AI applications.

9. **Meta-Learning and Few-Shot Learning:** Investigate how to design machine learning models that can learn new tasks with minimal data and few examples. This is particularly relevant for applications where collecting extensive training data is impractical.
10. **Topology Optimization for Additive Manufacturing:** Investigate how to design and optimize components specifically for additive manufacturing. This research topic involves developing algorithms and software tools to create structures that maximize the benefits of 3D printing, such as reduced material usage, improved strength-to-weight ratios, and enhanced performance.
11. **Sustainability and Environmental Impact:** Examine the environmental impact of additive manufacturing processes, including the energy consumption, waste generation, and carbon footprint. Research in this area could explore eco-friendly materials, recycling and upcycling of printed parts, and energy-efficient printing methods.
12. **Bioprinting and Medical Applications:** Explore the use of additive manufacturing in the field of bioprinting for tissue engineering and regenerative medicine. Research can focus on developing new bio-inks, improving printing precision, and advancing techniques for creating functional organs and tissues.

2. Research on Indian Knowledge Systems

In line with the NEP 2020 and the UGC's decisions, the proposed DTBU believes that the knowledge from ancient India and its contributions to modern India must be part of the courses curriculum of the programmes in Indian Knowledge Systems. Accordingly the curriculum of the programmes is proposed at UG and PG level to equip the students with deep understanding of Indian traditions, culture and way of living including methods of teaching and research such a Tantra Yukti and innovative pedagogy. The departments of the School of Indian Knowledge Systems in collaboration with the Center for Research and Innovation will promote inter-disciplinary research and all aspects of knowledge systems and preserve and disseminate the same for further research and societal applications

1. Scientific study of the impact of Community Based Natural Farming (Zero Budget) using Jeevamrita and Beejamrita (Cow Urine and Dung) on soil health and quality crop products
2. Analysis of heart beat of mother as music therapy to the Foetus in mother's womb in relation to the Indian Music
3. Science behind Indian Vaastu in orientation of residential buildings and Temples and their impact on health aspects

4. Development of mechanism for the ancient wooden toys of “Kondapally” by additive manufacturing
5. Synthesis of Vaastusastra, Agamasastra, environmental planning in the modernization of Yadagiri Sri Lakshmi Narasimha Temple
6. Analysis of Feel-Good and Happinex Index on production of Oxytocin in human beings
7. Development of Mobile Apps on AYUSH based wellness technology
8. Exploring scientific basis for “Vyavasaya Panchamgam” (Farmers Almanac) for weather and agricultural prices forecast
9. Relevance of Shaastric studies and Research in Law
10. Analysis, Development and application of environmentally friendly natural colours for making of Ganesh idols.
11. Analysis of Political concepts in the Mahabharatha and the Ramayana for Sovereignty, People welfare, Diplomacy and War
12. Science of Indian Dance Systems and their impact on mental, physical health and wellness

3. Research on Technology-led Agriculture

With the recent advances/trends in agricultural sciences there has been a ground-breaking and comprehensive exploration cutting-edge technologies and emerging trends that have shaped the course of modern agriculture. In recent years, there has been realization of transformative potential of millets, shedding light on their nutritional significance and their ability to revolutionize global food security and sustainability. Understanding the critical role in cultivating resilient and high-yielding crops capable of withstanding the challenges posed by changing climates and environmental stresses, is the need of the hour. Exploiting the power of precision agriculture that employs innovative tools like remote sensing, GPS, and artificial intelligence to optimize resource usage, increase productivity, and reduce environmental impact. Another important area is the exploration of abiotic and biotic stresses which pose persistent threat to agricultural productivity worldwide. Through the integrated crop, disease and pest management and other novel strategies/approaches, it is possible to mitigate the damaging effects of diseases, pests, and invasive species on crop yields and food security. Realizing the intricate relationship between agriculture and climate change, developing adaptive strategies and sustainable practices to build resilience in the face of environmental shifts is the need of the hour. In order to address these issues, a paradigm shift is called for in human resources development, research, technology generation and dissemination and commercialization. In this endeavour, the conventional research approaches need to be

supplemented by the cutting edge technologies requiring multi-disciplinary and multi-institutional inputs. The following listed research areas would enable in exploring the ways and means to sustain productivity in Indian agriculture in the current scenario.

1. Research on Conservation Agriculture: Technology-led climate resilient innovative farming practices
2. Exploration of Sustainable agriculture through integrated crop, disease and pest management
3. Morpho-physiological, biochemical and molecular adaptation of millets to abiotic stresses
4. Seaweed extract bio-stimulants in mitigating drought stress in rainfed crops
5. Effect of Integrated Nutrient Management on nutrient concentration and crop production in specific cropping sequence in rainfed farming
6. Microbial groups in the rhizosphere and their effects on plant growth, stress tolerance and soil health under climate change scenario
7. Research studies on small millets improvement using molecular breeding approaches
8. Automated Drip irrigation and fertigation strategies in enhancing crop production in vegetables
9. Land suitability for major crops in watershed programmes in Telangana state using RS and GIS
10. Use of Mechatronics (drones) in spraying insecticides and fertilizers for increasing the efficiencies in agricultural crop production
11. Application of Drone technology in agriculture for soil and crop health monitoring
12. Digital innovations for sustainable and climate resilient agricultural system
13. Extent of awareness and adoption of climate resilient crop production practises among farmers in Telangana State
14. Empowering women in climate-resilient farming through technology-led Sustainable Agriculture
15. Impact Analysis of Information and Communication Technology on Women in Agriculture

16. Application of robotics in cultivation of row crops agriculture minimizing human labour requirement and for increasing productivity and profitability

4. Research on Community Wellness and Lifestyle Management

In an era marked by the constant evolution of societal norms, increased access to information, and the fast-paced nature of modern life, the pursuit of well-being and a balanced lifestyle has become an ever-more pressing concern. As individuals, communities, and societies as a whole leverage with the challenges of maintaining optimal health and overall quality of life, it is imperative that commencement on research initiatives to understand, adapt, and enhance the well-being of communities. This sets the stage for an in-depth exploration into the domain of community wellness and lifestyle management. It is driven by the recognition that a healthy and harmonious lifestyle, in both the physical and mental dimensions, plays a pivotal role in the holistic development of communities. Therefore, initiating on research with the following key objectives:

1. To understand the current state of community wellness
2. To investigate lifestyle patterns and determinants
3. To develop effective intervention strategies
4. To promote community engagement and awareness
5. To contribute to the body of knowledge

Instituting on this research journey, guided by the belief that healthier, happier communities have the potential to create a positive ripple effect, impacting not only the lives of individuals but also the social fabric and economic prosperity of society. With a commitment to evidence-based practices and a deep-rooted dedication to the well-being of all, our commitment to strive and pave the way for a brighter, healthier future.

This lays the foundation for a comprehensive exploration of community wellness and lifestyle management, look forward to the insights, solutions, and progress that this research endeavour on the following topics will undoubtedly bring.

1. Artificial Intelligence in Wellness and Lifestyle Management
2. Substance Abuse Prevention: Investigate community-based strategies to prevent and treat substance abuse, including programs for addiction recovery and harm reduction.
3. Aging in Place: Study how communities can be adapted to support healthy aging, with a focus on services, housing, and accessibility for elderly residents.
4. Health Disparities: Analyse health disparities within a community, focusing on factors such as income, race, gender, and access to healthcare, and develop strategies to address these inequities.

5. Technology and Wellness: Investigate the role of technology, such as health apps, wearable's, and Tele-health, in promoting wellness and lifestyle management within communities.
6. Workplace Wellness Programs: Study the implementation and effectiveness of workplace wellness programs in promoting healthy lifestyles among employees and their families.
7. Environmental Sustainability and Health: Examine the links between environmental sustainability initiatives (e.g., clean energy, green spaces) and community health.
8. Chronic Disease Management Programs: Assess the effectiveness of community-based programs for managing and preventing chronic diseases such as diabetes, hypertension, and obesity.
9. Interdisciplinary Approaches to Wellness: Investigate the impact of interdisciplinary collaborations among healthcare professionals, urban planners, educators, and social workers on community wellness.
10. The impact of climate change on community wellness: The impacts of climate change on community wellness are disproportionately affecting vulnerable populations, such as low-income communities, communities of colour, and indigenous communities. People living in communities that experienced extreme heat waves were more likely to die from heart disease and stroke.
11. Health Equity Initiatives: Analyse efforts to reduce health disparities and improve health equity within communities, focusing on access to healthcare, healthcare quality, and social determinants.
12. Impact of Community Green Spaces on Mental Health: Explore the mental health benefits of parks, greenways, and recreational areas within communities and their potential in reducing stress and promoting well-being.
13. Public-Private Partnerships for Wellness: Research the potential benefits and challenges of collaboration between public and private sectors to promote community wellness and lifestyle management.

5. Research on Green Energy and Sustainable Environment

Recognizing the critical need to address the global challenges posed by climate change and environmental degradation, and understanding the profound implications of sustainable energy solutions for the 21st century, it is imperative to undertake focused research endeavors in the realm of Green Energy and Sustainable Environmental practices. With an aim to foster a holistic understanding of the intricate interplay between technological innovation, environmental stewardship, and socio-economic development, the following discourse endeavors to outline the

pivotal significance of research in these domains. By elucidating the potential implications and far-reaching benefits of advancing sustainable energy and environmental initiatives, this preamble seeks to underscore the urgency and importance of robust research efforts in meeting the multifaceted requirements of the contemporary era.

1. Innovations in bioenergy production and their potential for sustainable development.
2. Assessment of the effectiveness of solar energy technologies in reducing carbon emissions.
3. Environmental and economic implications of transitioning to electric vehicles and sustainable transportation systems.
4. Enhancing the efficiency and affordability of solar energy technologies for widespread adoption.
5. Impact assessment of green buildings and sustainable architecture on energy conservation and environmental well-being.
6. Evaluation of the potential of geothermal energy as a reliable and sustainable power source.
7. Policy frameworks for incentivizing green energy adoption and sustainable environmental practices at the national and international levels.
8. Development of sustainable waste management strategies to reduce environmental pollution and promote resource efficiency.
9. Application of IoT in 3E (Efficiency, Economy and Environment) factor based energy management as a smart strategy
10. Transitions in Green House technology for energy saving using AI and ML technologies
11. Assessment of wind power accommodation capability for multi-energy micro-grids
12. Modelling and optimization of sustainable energy transitions
13. Use of bio-mass derived bio-char materials as sustainable energy sources for electrochemical energy storage devices
14. Studies of coconut biomass pyrolysis for sustainable energy generation
15. Application of solar powered photo-voltaic systems to boost sustainable energy and use in agriculture
16. Development of ocean renewable energy for applications in different fields in coastal India

17. Energy Management in green house gases mitigation
18. Solar water heating systems for vapour absorption in refrigeration systems

6. Research on Health and Bio-Medical Sciences

Biomedical and Health research endures to have a foremost favorable impact on human health and well-being. This multidisciplinary approach fetches together researchers from bioengineering, public health, life sciences, and clinical and primary care medicine apart from basic and applied sciences. Biomedical research puts excellent enlightenment in the health and biomedical sciences, suited for careers in health and biomedical science professions, research, and education. Since Biomedical health research focuses on providing benefits only to communities. A lot of leads have been undertaken to address some of the major health issues faced by society and to bridge the gaps between the innovator and the end-users. Biomedical Health Research will help to prepare students for many different career opportunities in translational and clinical research field. Some Research Topics in this area are as follows:

1. Development of novel anti-bacterial therapeutic approaches.
2. Development of novel multiplex rapid, point of care affordable diagnostic tests for detection of Typhoid Fever.
3. Investigating microbes for human health.
4. Exploring the Existing and Emerging Point-of-Care Testing Technologies for Health Care.
5. Exploring Nanostructured materials for biological sensing and medical devices.
6. Designing and development of Microfluidic Devices for Biological Applications.
7. Investigating the studies on the viability and beneficial properties of probiotics, synbiotics, and prebiotics.
8. Detection of novel diagnostics devices for antimicrobial susceptibility testing for surveillance and clinical purposes.
9. Developing a Comprehensive genetic analysis and mutational disease modeling for corneal erosion dystrophies in Indian patients.
10. Different approaches for nanoparticle synthesis and their potential applications.
11. Exploring advanced technologies for the development of oral cancer screening.
12. Microfluidic Paper-Based Analytical Devices for Biological Applications.
13. Developing novel biosensor chips for early cancer diagnosis.

14. Exploring different biochemical markers as a novel diagnostic tool.
15. Investigating and development of new diagnostic techniques and approaches for infectious diseases.

7. Research on New-age Management and Law

In the pursuit of academic excellence, the proposed DTBU welcomes aspiring scholars to embark on a transformative journey of intellectual exploration and scholarly achievement through PG and Ph D programmes. Rooted in a commitment to advancing knowledge, fostering innovation, and cultivating leaders in the fields of management and law, the research programmes will be a beacon of academic rigor, creativity, and societal impact.

The PG and Ph D programmes are envisioned as torchbearers of cutting-edge research, contributing not only to the theoretical foundations of management and law but also to the practical solutions that shape the contemporary global landscape. They are dedicated to nurturing a community of scholars who are driven by curiosity, inspired by challenges, and committed to making a meaningful difference in the world. The research areas align with the expertise and interests of faculty, the needs of the country, industry, and the broader societal context. The following are some potential research areas that candidates in such a program might explore.

1. Research on Strategic Management: A study corporate strategy and competitiveness in the emerging telecommunication sector.
2. A study on Strategic Synergies: Unravelling the dynamics of mergers and acquisitions in contemporary business strategy.
3. Exploring beyond Barriers: Fostering diversity and inclusion in the modern workplace
4. Cultivating Change: Exploring the dynamics of organizational culture and adaptation in building future organizations
5. Elevating Leadership: A comprehensive study on managerial skill development strategies in the Country.
6. Ethical Horizons: A study on corporate governance, accountability, and the imperative of social responsibility in Indian Business
7. Tech for Good: Navigating the Landscape of Social Responsibility and Sustainable Practices in the global IT Sector
8. Embracing Legal Tech: An In-depth Exploration of Technology Adoption and

Diffusion in the Indian Legal Sphere

9. Revolutionizing Healthcare: Exploring innovation and technology adoption in the Indian rural healthcare landscape
10. Navigating Global Challenges: A Comprehensive Analysis of Indian Policy Perspectives in Managing International Affairs
11. Managing the Virtual Realm: An analysis on Intellectual Property Challenges in the Digital Age for the emerging business.
12. Research studies on integrating rural innovation with the mainstream business channels

(vi) **Research Internships**

The proposed MNR-HERA DTBU envisages institutionalization of Research Internships at all levels in general and the UG level in particular since it is expected to play a key role in catalyzing inter-disciplinary/multi-disciplinary/trans-disciplinary and translational research culture as envisioned in NEP 2020. Under CCFUP 2022 of the UGC, the summer internships for UG students are envisaged under all the newly introduced course structures (Section 15 (a)). While designing the research internships programmes, the DTBU aims to develop individuals with strong knowledge, skills, values and research oriented vibrant higher education system for contributing to the sustainable development and societal needs of the country. The internships shall be so arranged as to benefit both research-intern and the internship providing organization.

The research internships will be organized by the DTBU with the premier academic and research organizations with a view to (1) enhance the employability of the students and (2) to develop research aptitude for the students to enable them to carryout advanced research independently. The 3-year and 4-year UG (Hons) programmes will be conducted adhering to the NEP guidelines. Some specific courses namely the Research Ability Enhancement Courses (RAEC) in research methodology, data analytical tools and techniques will be offered to the 4-year UG (Hons) (Research) students during the third year. A minimum academic credits of 20 out of about 160 credits for 4-Year UG programme will be allotted for the research internships at the end of first and second years of the programmes to facilitate multiple entry and exit options for the students. This process is going to greatly benefit the students who wish to go for Ph D in their chosen field of specialization after completion of the UG (Hons) (Research) as per the Policy. Internship guidelines issued by the UGC or AICTE or ICAR or any other national regulatory bodies, as the case may be, shall be followed. The minimum academic credits, distribution of credits, duration and slots in curriculum will be as specified by the CCFUP/UGC. The structure of course curriculum of the RAEC will be decided by the Academic Council. Opportunities for the students of all the proposed programmes to gain research internship experience will be provided by the DTBU (having locational advantage of being in proximity to Hyderabad) for working with teachers and scientists of

other HEIs, IIT-H, ISB, CCMB, ICAR, CSIR, NIN, NIPER, JNTU, OU, HCU, JNAFAU, NRSA, other Nationally reputed organizations, Bio-Tech companies, Pharmacy companies, Telugu University or eminent persons distinguished in specific fields of Indian knowledge Systems to build-up competence and confidence in the students to start their research work. The research internship programmes and all activities of induction, resources requirements, guidance, feed back and evaluation will be fully organized, executed and monitored by the Center for Research and Innovation established by the DTBU exclusively for the purpose of integrating Research, Innovation and Technology Development towards achieving Atma-Nirbhar Bharat.

(vii) The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Developing a research vision and mission aligned with university goals and societal needs			
2	Establishing a Research Committee with eminent scholars for strategic guidance and oversight			
3	Investing in modern research facilities and equipment for high-quality interdisciplinary research			
4	Establishing research centres of excellence			
5	Providing research grant money to faculty for innovative research			
6	Strategic partnerships for applied research and technology transfer with industries, government agencies, and NGOs			
7	Implementing ethical guidelines for research integrity and adherence to principles			
8	Integrating research into curriculum for student-led learning			
9	Support for Innovative Students projects			
10	Establishing internal funding for pilot studies and early-stage research			
11	Facilitating faculty's research development and fostering a research-driven culture			
12	Development of Incubation Centre			
13	Establishing focused research centers for impactful studies			
14	Identifying research domains aligned with priorities and strengths			
15	Promoting collaborations with international institutions for global research			
16	Focusing on publications for global recognition and rankings			
17	Encouraging faculty in national and international research activities			
18	Offering global research scholarships for exceptional talent			
19	Developing intellectual property policy for research innovations			
20	Collaboration with Students and Postdoctoral Fellows			

(viii) The 5-Year Rolling Implementation Plan

First Year

- **Assessment of Research Needs and Creation of Research Infrastructure:** Establishment of Centre for Research and Innovation and interdisciplinary and multi-disciplinary research laboratories and state-of-the-art equipment and facilities aligned with the proposed DTBU's focus unique research areas. Ensuring safety protocols and standards for safe working environment.
- **Faculty Orientation and Seed Funding:** Recruitment and Orientation of faculty members towards the research needs, focus areas and priorities. Allocation of Budgetary resources and initial seed funding for faculty research projects and pilot studies.
- **Research Policy:** Formulation of research policy to provide to provide a transparent, encouraging and sustained for creating enabling environment for research by faculty and students. It also envisages ethics, guidelines and procedures for grant applications, project management, and grant of research incentives and publication of research results.
- **Research Advisory Board:** Formation of research advisory board comprising of eminent persons with high academic and research achievements nationally and internationally for offering guidance to the research teams in the departments and to the Center for Research and Innovation.
- **Collaborations:** Initiation of collaborations with industry partners, research institutions, universities and other HEIs.
- **Research Internships:** Institutionalisation and execution of research internships at all levels on regular basis in the programmes as envisaged in NEP 2020.

Second Year

- **Formation of Research Clusters:** Formalize research clusters in the unique research areas to encourage interdisciplinary, multi-disciplinary and trans-disciplinary research among the departments across the disciplines and also to guide UG (Research), PG and Ph.D. students on regular basis.
- **External Funding and Research Incentives:** Develop strategies to encourage faculty for securing external research grants from government agencies and industry partners. Granting research incentives every year to the staff for securing external funding and for their research achievements.
- **Organisation of Research Conferences and Workshops:** Showcasing to ongoing research and development of strategic alliances to attract potential collaborators. Presenting research finding and exchanging ideas with experts to enhance research skills and to gain exposure to diverse perspectives.

Third Year

- **Presentation and Publication of Research Results:** Encourage faculty to publish in high-impact national and international journals and conferences relevant to their fields and to receive feedback from the research community.
- **Doctoral Research (Ph.D.) work:** Commencement of Ph.D. programs in the departments to create a pipeline of research scholars and contribute to advanced research in the focus areas.
- **Research for Societal Needs:** Engage in community outreach by conducting research that addresses local challenges and contributes to social development.
- **National and International Collaborations:** Establish national international research collaborations to enhance the institution's national and global research network.

Fourth Year

- **Patents, Innovations and Intellectual Property Rights:** Encourage faculty and students to develop innovative solutions through research and to achieve patents and intellectual property rights.
- **Technology Transfer:** Create mechanisms to manage intellectual property for transferring technology to the industry for practical applications and commercialisation.
- **International Conferences:** Promotion of international research collaboration by organising international conferences and seminars to exchange research ideas on contemporaneous and future researchable issues globally.
- **Research Impact Assessment and contribution to Strategic Needs of the Country**
Assessment of the impact of research projects and results on society, industries, and policy-making and contributing to the economic development and the strategic needs of the country towards achieving “Atma-Nirbhar Bharat”.

Fifth Year

- **Centres of Research Excellence:** Elevation of select research clusters as Centres of Excellence in every School/Department to attracting substantial funding and recognition from governmental, non-governmental and private organisations.
- **Research Endowment Fund:** Establishment of an endowment fund to support and sustain long-term research projects financially and also providing financial support to PG and Ph.D. students.
- **Collaborative Research Projects:** Encouraging faculty and students to prepare and submit proposals on collaborative research projects with industry and international partners on a regular basis.

- **Evaluation and Future Planning:** Evaluation of the Research Plans and Policy and the achievements and challenges of the first five-year plan and develop a strategic research plan for the next years..

The Remaining 10-Year Plan

Sixth Year

- Launching a mentorship program for early-career researchers.
- Implementing interdisciplinary research initiatives.
- Establishing partnerships with research-focused NGOs

Seventh Year

- Enhancing research infrastructure and facilities.
- Increasing research engagement among students.
- Conducting faculty development programs for research

Eighth Year

- Collaborating with other institutions for joint research projects.
- Hosting research competitions to foster innovation.
- Introducing research fellowships for outstanding researchers.

Ninth Year

- Strengthening connections with renowned researchers.
- Establishing a research journal showcasing university research.
- Implementing measures for research impact assessment.

Tenth Year

- Developing strategies for technology transfer and commercialization.
- Introducing a research ethics and integrity program.
- Establishing a patent and intellectual property cell.

Eleventh Year

- Expanding international research partnerships.
 - Implementing a research dissemination strategy.
 - Launching an industry-sponsored research program.

Twelfth Year

- Developing a research innovation hub.
- Introducing advanced research-focused degrees and programs.
- Hosting international research conferences.

Thirteenth Year

- Fostering research collaborations with government bodies.
- Enhancing support for interdisciplinary research.
- Establishing a research incubation center for startups.

Fourteenth Year

- Encouraging faculty to pursue collaborative research grants.
- Implementing measures for research quality assurance.
- Hosting an annual research showcase event.

Fifteenth Year

- Reviewing and refining the research plan based on outcomes.
- Celebrating research achievements and milestones..

(e) Campus ICT Plan

(i) Overview

In the current digital epoch, Information and Communication Technology (ICT) plays a crucial role in transforming educational institutions and empowering students, faculty, and staff with cutting-edge tools and resources. This 15-year strategic campus ICT plan outlines a vision of the university that utilizes the full potential of technology to create a dynamic and future-ready learning environment. With a focus on innovation, accessibility, and sustainability, the plan aims to build a technology-enabled ecosystem that fosters seamless collaboration, enhances academic excellence, and prepares graduates to succeed in the global digital landscape.

ICT will promote the adoption of digital learning resources, open educational resources, and e-books to provide students with accessible and up-to-date study materials. Additionally, the university will introduce e-assessment methods, virtual labs, and online examinations to enhance evaluation processes and ensure academic rigor. It places a strong emphasis on digital skill development. Faculty and students will receive regular training on utilizing technology in teaching, research, and administrative tasks. To facilitate seamless communication, ICT envisions a campus-wide Wi-Fi network with high-speed internet connectivity. The availability of robust wireless connectivity will empower students and faculty to access online resources, participate in virtual classrooms, and engage in real-time collaboration.

To enhance research capabilities, ICT plan will establish virtual labs and research platforms in various disciplines. These virtual labs will provide researchers with access to advanced equipment and simulation tools, enabling them to conduct experiments and research remotely. The integration of big data analytics and artificial intelligence will further expedite research processes and expand the frontiers of knowledge. Implementing online admission processes, e-payments, digital libraries, attendance tracking and digital student record management will enhance operational efficiency and reduce paperwork to create a seamless and user-friendly campus experience.

By implementing this plan, the institution can create a technologically advanced and digitally integrated campus environment that fosters innovation, enhances teaching and research, and improves administrative efficiency.

(ii) The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Aligning the plan with the university's mission and goals			
2	Infrastructure Development and Connectivity - Developing a robust campus-wide Wi-Fi network with high-speed internet - Investing in advanced ICT infrastructure and software - Ensuring seamless connectivity for students, faculty, and staff			
3	Academic Transformation through ICT - Promoting the adoption of digital learning resources and e-books - Integrating e-assessment methods and virtual labs for enhanced evaluation - Fostering interdisciplinary studies through ICT initiatives			
4	Technological Innovation and Research - Creating a technology-enabled ecosystem to enhance research capabilities - Exploring opportunities for Artificial intelligence (AI) and Internet of Things (IoT) integration in research			
5	Administrative Efficiency and Digitalization - Implementing online admission processes and e-payments - Digitizing administrative tasks for streamlined operations - Enhancing resource management through digital solutions			
6	Sustainable ICT Practices and Green Initiatives - Adopting eco-friendly ICT practices to reduce the university's carbon footprint - Implementing energy-efficient solutions and green technologies - Promoting sustainability through ICT initiatives			
7	Resource Allocation and Funding - Identifying the required resources for successful implementation - Allocating budget and securing funding for ICT projects - Optimizing resource utilization for maximum impact			
8	Faculty and Student Empowerment through Digital Skills - Organizing regular training programs for faculty on effective technology utilization - Enhancing digital literacy and skills for students through workshops and courses			

(iii) The 5-Year Rolling Implementation Plan

First Year

- Developing a strong foundation for the university's ICT infrastructure. This includes upgrading the network infrastructure, installing high-speed internet connectivity.
- Integrate academic technology solutions, such as Learning Management Systems (LMS), virtual classrooms, and multimedia resources, to enhance the teaching and learning experience.
- Providing training and support for faculty to effectively use these technologies in their courses.

Second Year

- Investing in digital library resources and e-books to provide students and faculty with easy access to a vast collection of academic materials.
- Implementing a cloud-based infrastructure that supports greater scalability and flexibility.
- Developing an online assessment and grading system that provides students with real-time feedback and progress tracking.
- Implementing digital signage and kiosks around campus that provide real-time information on events, schedules, and university news.

Third Year

- Expanding the use of virtual labs and simulations to provide students with hands-on experience in engineering and science courses.
- Developing and launch an online course catalog that enables students to browse and register for courses online. The online course catalog would provide students with up-to-date information on course offerings, schedules, prerequisites, and other relevant information.
- Developing a mobile application that enables students to access course materials, schedules, and other university resources from their mobile devices.
- Enhancing cybersecurity measures across the campus network.

Fourth Year

- Exploring the use of artificial intelligence (AI) and machine learning (ML) to improve teaching and learning outcomes.
- Establishing a central data center for storage and processing.
- Expanding the use of augmented and virtual reality (AR/VR) technologies in engineering and science courses.

- Implementing a data analytics program that enables faculty and students to extract insights from large data sets generated by research projects, experiments, and other academic activities.

Fifth Year

- Implementing a chatbot or virtual assistant that can answer student inquiries and provide assistance 24/7, without the need for human intervention.
- Expanding the use of virtual collaboration tools, such as video conferencing and virtual whiteboards, to enable remote collaboration among students and faculty members across different locations and time zones.
- Implementing green ICT initiatives, such as virtualization and energy-efficient computing solutions.
- Initiating a digital library with e-resources.

The Remaining 10-Year Plan

Sixth Year

- Implementing Internet of Things (IoT) solutions for campus management.
- Launching an online assessment and examination platform.
- Introducing virtual reality for immersive learning experiences.

Seventh Year

- Establishing partnerships with ICT companies for industry collaborations.
- Providing training for faculty on advanced ICT tools.
- Developing a research computing infrastructure.

Eighth Year

- Upgrading classroom facilities for hybrid and remote learning.
- Launching advanced student portal for academic progress tracking.
- Adopting eco-friendly ICT practices to reduce the university's carbon footprint.
- Organizing regular training programs for faculty on effective technology utilization.

Ninth Year

- Implementing campus-wide digital signage and information kiosks.
- Developing a mobile app for campus navigation and other services.
- Enhancing campus surveillance and security systems using ICT.

Tenth Year

- Upgrading ICT infrastructure to support emerging technologies.
- Establishing a Center of Excellence in ICT research.
- Launching a virtual reality lab for research and education.
- Enhancing digital literacy and skills for students through workshops and courses.

Eleventh Year

- Implementing a comprehensive Learning Management System (LMS)
- Developing a student feedback system using ICT tools.
- Expanding online course offerings and blended learning options.

Twelfth Year

- Implementing smart campus solutions for energy efficiency and sustainability.
- Enhancing ICT support services for faculty, staff, and students.
- Introducing block chain for secure academic record management.

Thirteenth Year

- Implementing a campus-wide analytics and data-driven decision-making system.
- Developing a virtual campus tour using augmented reality.
- Launching a mobile app for alumni engagement.

Fourteenth Year

- Establishing strategic partnerships with global ICT institutions.
- Implementing IoT for campus resource management.
- Launching a digital repository for research publications.

Fifteenth Year

- Reviewing and updating the ICT plan based on outcomes and technological advancements.
- Establishing the university as a leader in ICT-enabled education and research.

(f) Infrastructure Development Plan and Master Plan

(i) Overview

The Institution proposed to be Deemed to be University has formulated the infrastructure development plan which outlines a comprehensive strategy for creating a state-of-the-art campus that fosters innovation, collaboration, and excellence. With a vision to become a center of academic distinction and a hub for cutting-edge research, the plan envisions a technologically advanced and sustainable campus that caters to the evolving needs of the university community. By investing in modern classrooms, research laboratories, advanced technology centers, expansive libraries, and comfortable student accommodations, the strategic plan aims to create an inclusive and conducive environment for learning and growth.

This strategic infrastructure development plan will be implemented in several phases, each designed to meet specific goals and milestones. The initial phase will focus on essential infrastructure, including constructing the main administrative building, lecture halls, and basic amenities such as a hostel, cafeteria, health center, and sports facilities. The plan will also prioritize the establishment of research laboratories, library facilities, and faculty accommodations to support academic and research initiatives from the outset.

In subsequent phases, the plan will concentrate on expanding the campus to accommodate a growing student and faculty population. New academic blocks, research centers, and technology-driven classrooms will be constructed to meet the evolving academic requirements. The proposed deemed to be university will adopt eco-friendly construction practices, ensuring that buildings are energy-efficient and adhere to green building standards. Furthermore, the plan includes provisions for green spaces, landscaped gardens, and tree planting to create a serene and eco-friendly campus environment.

A key aspect of the infrastructure plan is the integration of information technology to create a smart campus. High-speed internet connectivity and campus-wide Wi-Fi will facilitate seamless communication and digital learning experiences. The proposed deemed to be university will implement smart classroom technologies, interactive whiteboards, and e-learning platforms to support modern teaching methods. Amenities such as a well-equipped gymnasium, recreational areas, and cultural centers will be provided to enhance the overall student experience.

(ii) The Master Plan for an area of 46.95 acres

A land of 46.95 acres out of the total land owned by the MNRET at Fasalwadi, Sangareddy has been specially earmarked for the purpose of all buildings and infrastructural facilities of the proposed MNR-HERA Deemed to be University. The Master Plan for the Infrastructure Development for the Institution in the specified area including the following buildings and facilities is prepared with sufficient built-up area for the students and staff as per the educational standards of the national regulating agencies (Fig 15.1)

1. Administrative Block
2. Central Library
3. Auditorium
4. International Guest House
5. Student Hostels (Gents)
6. Student Hostels (Ladies)
7. Faculty Residential Quarters
8. Academic Blocks for all the eight (8) Schools and one Center for Research and Innovation including Class rooms, Seminar halls, Laboratories, Computer centers

Infrastructure and Investment Plan by the start of the First Academic Year

The following infrastructure and investment plan is proposed to be executed by the beginning of the first academic year to commence the academic and students activities smoothly and effectively from the very beginning. The academic buildings and the hostel buildings will be constructed and kept ready as detailed below for the immediate occupation and use by the students admitted to the proposed MNR-HERA Deemed to be University.

- An investment of Funds of Rs 500 crores will be made in the first 5 Years
- Academic and Administrative Buildings and Students Hostels to the extent of 50 % of the total requirement will be made available
- Faculty Residential Quarters will be made available for 100 staff members
- Student Hostels will be made available for at least 1000 students (600 Girls and 400 Boys)
- 50 % of the accommodation requirements in the Guest Houses for the Visiting Faculty and the Examiners will be kept ready

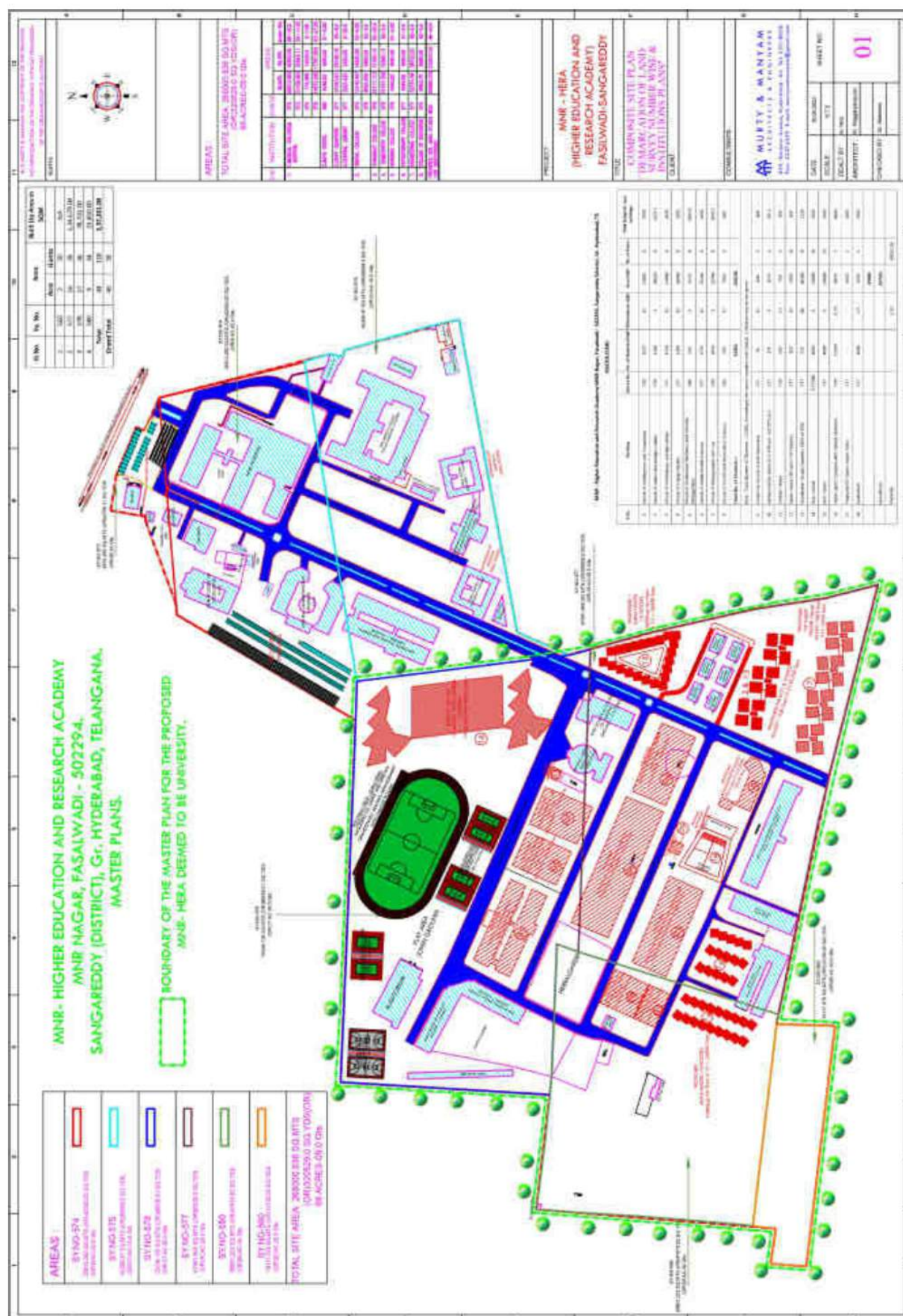


Fig. 15.1 Master Plan

(iii) **The Road Map for the Creation of Infrastructural Facilities over a period of 5 years is given below**

Creation of Infrastructural Facilities (Road Map based on the Years of Starting of Programmes)

Item	Details	Total Required	I Year	II Year	III Year	IV Year	V Year
A	Academic Facilities						
1	Class Rooms	245	35	67	75	49	19
2	Laboratories	121	79	38	4	0	0
3	Library	1	1				
4	Auditorium	1	1				
5	Examination Rooms	36	20	16			
6	Cutting-Edge Technologies Demonstration Rooms	15	5	5	5		
7	Dean/Director Rooms	9	9				
8	Placement Cell	1	1				
9	Non-Teaching Staff Rooms	9	9				
10	Staff Rooms with Toilets	60	25	15	10	8	2
11	Boys Common Rooms	77	15	20	22	15	5
12	Girls Common Rooms	78	15	20	23	15	5
13	R&D and Innovation Labs	9	9				
B	Administrative Facilities						
1	Executive Council Meeting Hall	1	1				
2	Academic Council Meeting Hall	1	1				
3	Mini Meeting Hall	1	1				
4	Office of Chancellor	1	1				
5	Office of Vice-Chancellor	1	1				
6	Office of Pro-Vice-Chancellor	1	1				
7	Office of Registrar	1	1				
8	Office of Finance Officer	1	1				
9	Office of Controller of Examination	1	1				
10	Human Resource Office	1	1				
11	Admissions Office	1	1				
12	IT/Computer Section	1	1				
13	PRO and Reception Office	1	1				
14	Purchase Section	1	1				
15	Store Room	1	1				
16	Academic Office	1	1				
17	Student Affairs Office	1	1				

C	Student and Staff Amenities						
1	Faculty Quarters	150 Flats	75 Flats	50 Flats	25 Flats		
2	Guest House	1	1				
3	VIP Guest House	1		1			
4	Boys Hostel (4000 Students)	1	50%	75%	100%		
5	Girls Hostel (4000 Students)	1	50%	75%	100%		
6	Auditorium with Central Cafeteria	1	1				
7	Books and Stationary, etc.	1	1				
8	Health Center	1	1				
D	Campus Services						
1	Generator Room	1	1				
2	UPS Room/Electrical Rooms	1	1				
3	Computer Network Switching Room/Server Room	1	1				
4	Civil Office/Estate Office	1	1				
5	ATM	1	1				
6	Post Office	1	1				
7	Security Office	1	1				
8	Vehicle Stand	1	1				

(iv) The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Campus Master Planning - Conducting a thorough analysis of the existing campus and its facilities - Identifying areas for expansion and development based on projected growth and needs - Creating a comprehensive master plan for the campus infrastructure			
2	Academic and Research Facilities - Assessing the needs for specialized academic and research facilities - Developing plans for modern classrooms, laboratories, and research centers - Ensuring compliance with UGC standards and best practices			
3	Information Technology Infrastructure - Developing plans for a robust campus-wide Wi-Fi network and high-speed internet connectivity - Integrating smart technology for campus management			
4	Library and Learning Spaces - Developing plans for a modern and well-equipped library with digital resources - Creating versatile learning spaces to support collaborative and innovative learning			
5	Student Housing and Campus Amenities - Identifying the need for student housing and residential facilities - Developing plans for student hostels and recreational spaces - Ensuring a conducive and enriching campus environment for students			
6	Administrative and Support Facilities - Evaluating the requirements for administrative offices and support services - Developing plans for efficient administrative buildings and staff facilities			
7	Health and Wellness Infrastructure - Developing plans for medical centers, counseling services, and sports facilities - Promoting a healthy and active lifestyle within the campus community			
8	Environmental Sustainability and Green Infrastructure - Developing plans for eco-friendly and energy-efficient buildings - Integrating green spaces and promoting biodiversity within the campus - Implementing waste management and recycling initiatives			

(v) The 5-Year Rolling Implementation Plan

First Year

- Conducting a detailed analysis of available land and existing infrastructure to create a comprehensive campus master plan.
- Identifying areas for new construction, expansion, and renovation to accommodate academic, research, and student support facilities.
- Creating a comprehensive master plan for the campus infrastructure.
- Begin construction of academic buildings with modern classrooms, lecture halls, library and laboratories with incorporating the latest educational technology.
- Ensuring compliance with UGC standards and best practices.
- Upgrading a central library with a diverse collection of books, journals, and digital resources to support academic research.
- Developing specialized research laboratories and facilities to support various disciplines and promote cutting-edge research.
- Continuing the construction of academic and administrative buildings, student hostels, and staff residential quarters.
- Developing plans for medical centers, counseling services, and sports facilities.

Second Year

- Developing sports complexes, gyms, and recreation centers to promote a healthy and active campus lifestyle.
- Build a robust IT infrastructure with high-speed internet connectivity and Wi-Fi coverage across the campus.
- Upgrading basic amenities like water supply, sanitation, and electricity.
- Developing a landscaping plan for a visually appealing campus environment.
- Continuing the construction of academic and administrative buildings, student hostels, and staff residential quarters.
- Integrating smart technology for campus management.

Third Year

- Establishing a comprehensive health and wellness center to provide medical services and counseling support to students and staff.

- Implement sustainable and eco-friendly practices throughout the campus, including energy-efficient buildings and waste management systems.
- Establishing dedicated research labs and facilities.
- Developing a modern sports complex and recreational facilities.
- Continuing the construction of academic and administrative buildings, student hostels, and staff residential quarters.

Fourth Year

- Continue to develop specialized research facilities and centers of excellence in specific fields of study.
- Collaborating with industry partners and research institutions to expand research capabilities.
- Continuing the construction of academic and administrative buildings, student hostels, and staff residential quarters.
- Enhancing campus security infrastructure.

Fifth Year

- Regularly evaluate and upgrade existing infrastructure to meet evolving needs and technological advancements.
- Establishing a maintenance schedule to ensure the longevity and efficiency of all facilities
- Completing the construction of academic and administrative buildings.
- Developing student hostels and staff residential facilities.

The Remaining 10-Year Plan

Sixth Year

- Focusing on eco-friendly initiatives, such as solar panels and rainwater harvesting.
- Establishing a modern cafeteria and food court.
- Enhancing transportation and parking facilities.
- Developing student hostels and staff residential facilities.

Seventh Year

- Continuing the construction of a dedicated research and innovation center.
- Developing student hostels and staff residential facilities.

- Upgrading technology infrastructure across the campus.
- Promoting a healthy and active lifestyle within the campus community.

Eighth Year

- Expanding existing facilities and infrastructure to accommodate growing student numbers.
- Developing a modern health and wellness center for students and staff.
- Introducing smart building management systems for energy efficiency.
- Developing staff residential facilities.

Ninth Year

- Upgrading and expanding library facilities, including digital resources.
- Developing student hostels and staff residential facilities.
- Focusing on sustainable and green architecture for new constructions.
- Upgrading the existing auditorium.

Tenth Year

- Upgrading smart classrooms with advanced audiovisual technology.
- Developing outdoor sports facilities like courts and tracks.
- Enhancing campus connectivity with Wi-Fi and networking .
- Developing student hostels and staff residential facilities.

Eleventh Year

- Developing a state-of-the-art innovation and entrepreneurship center.
- Upgrading existing laboratories with advanced equipment.
- Developing student hostels and staff residential facilities.
- Developing plans for eco-friendly and energy-efficient buildings.

Twelfth Year

- Establishing an incubation center for startups and innovation projects.
- Developing specialized facilities for vocational and skill-based training.
- Developing student hostels and staff residential facilities.
- Upgrading and modernizing the campus IT infrastructure.

Thirteenth Year

- Focusing on beautification and aesthetic improvements across the campus.
- Developing a sustainable transportation system within the campus.
- Developing student hostels and staff residential facilities.
- Upgrading and expanding central administrative building.

Fourteenth Year

- Developing outdoor recreational spaces and gardens.
- Introducing energy-efficient lighting and waste management systems.
- Developing student hostels and staff residential facilities.
- Integrating green spaces and promoting biodiversity within the campus
- Implementing waste management and recycling initiatives

Fifteenth Year

- Reviewing and updating the infrastructure plan based on outcomes and future needs.
- Ensuring all facilities are fully functional and cater to the diverse needs of the campus community.

(g) Finance Plan

(i) Overview

The MNR Educational Trust has been serving the education sector through many of its educational institutions in India and abroad for the last five decades firmly believing that if there are two essential factors that enrich the lives of people, they have to be Education and Health only. Now the Trust wishes to take on the platform of an Institution deemed to be University bringing in enhanced quality in multi-disciplinary higher skill education involving teaching, research and innovation by creating world-class infrastructure and by employing the highly competent teachers to prepare professionals in cutting edge areas that are fast gaining prominence such as Artificial Intelligence, Machine Learning, Big Data Analysis applied to Health, Energy and Environment, Indian Knowledge Systems, Agriculture, Engineering and Technology, Management and Law, Community Wellness and Lifestyle Management. The Trust is committed to the welfare and quality education with full disclosure and transparency. The Fee is so fixed that it would not impede student's education and at the same time it takes care of the Institution's smooth functioning and operation while imparting quality education in the professional courses with high global academic standards

The MNR Educational Trust has taken a decision to spend about Rs 100 crores from its own funds for initial investments and infrastructure and an amount of about Rs 400 crores would be raised through bank loans, donations from individuals/corporates, contributions from illustrious alumni of the MNR Institutions, interests from the corpus fund of Rs 25.00 crores over a period of five years and would become financially sustainable gradually. The following vision plan is envisaged. An overview of the Projected Expenditure and Projected Revenue is presented at the end of the Section.

The MNR-HERA DTBU undertakes careful financial planning to ensure sustainability, effective resource allocation, and long-term growth. This 15-year strategic finance plan outlines a comprehensive roadmap to secure and manage financial resources effectively, fostering academic excellence, research innovation, and infrastructural development. By promoting diversified revenue streams and optimizing resource allocation, the plan aims to establish a financially robust institution that can withstand economic fluctuations and emerge as a global leader in higher education.

This plan will establish strategic collaborations with industries, research institutions, and international organizations to attract research grants and sponsorships. It will allocate resources strategically, focusing on academic excellence, research infrastructure, and student welfare. To maintain financial stability, the strategic finance plan emphasizes continuous monitoring and reporting of financial performance. Regular financial audits, performance assessments, and risk analysis will be conducted to identify potential areas of improvement and address financial challenges proactively.

(ii) Financial Stability and Sustainability

The MNR Educational Trust has been a successful organization not only as an education provider but also in terms of financial stability and future sustainability. The Trust is a non-profit organization with social commitment and it has invested surplus funds for further growth and expansion of educational activities only in India as evident from the continuous growth of institutions in the last 49 years. In view of its financial stability as is evident from the ever rising growth in annual turnover from Rs 0.21 crores to Rs 182.00 crores in the last 20 years (Section 2 (a)), it possesses all the required risk absorption capacity under any situation. It has all the capacity to generate and sustain the revenue and expenditure if MNR-HERA is granted the Deemed to be University status by UGC and it will comply with all the rules and regulations as prescribed by UGC.

(iii) **The 15-Year Strategic Vision Plan**

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Finance Committee - Constitution of the Committee as per the provisions in section 18 of the UGC Notification - Commencement of the maintenance, management and operation of the Funds, Accounts, Audit and Annual Report Resource Planning and Allocation - Identifying the financial requirements for operating the university - Allocating financial resources effectively to support various academic and administrative functions - Ensuring prudent financial management for long-term sustainability			
2	Budget Planning and Financial Forecasting - Developing a comprehensive budget plan for the next 15 years - Projecting financial needs and revenue streams based on enrollment growth and other factors - Conducting sensitivity analysis to assess potential financial risks and uncertainties			
3	Education and Fee Structure - Evaluating the education and fee structure to strike a balance between affordability and quality education - Exploring financial aid and scholarship programs to support students' access to education - Ensuring transparency in education and fee policies			
4	Investment and Endowment Management - Developing an investment policy and guidelines for managing the university's endowment fund - Diversifying investment portfolios to manage risk and achieve sustainable returns			
5	Financial Reporting and Accountability - Implementing robust financial reporting mechanisms for transparency and accountability - Establishing a finance committee to monitor financial performance and governance - Complying with relevant financial regulations and reporting standards			
6	Cost Optimization and Efficiency - Conducting cost-benefit analysis for major capital projects and investments - Identifying opportunities for cost optimization and efficiency in academic and administrative operations - Adopting technology and automation to streamline financial processes			

(iv) The 5-Year Rolling Implementation Plan

First Year

- Conducting a detailed financial feasibility study to assess the initial funding requirements and projected income streams.
- Constitution of the Finance Committee as per the provisions in section 18 of the UGC Notification.
- Commencement of the maintenance, management and operation of the Funds, Accounts, Audit and Annual Report.
- Developing a comprehensive budget, allocating funds for key areas such as infrastructure development, faculty recruitment, and administrative setup.
- Prioritize spending based on the university's immediate needs and long-term goals.
- Beginning the process of securing grants and sponsorships for research projects.

Second Year

- Reviewing and refining the budget based on First Year actual expenditures and income.
- Maintenance, management and operation of the Funds, Accounts, Audit and Annual Report
- Continuously review and optimize operational costs to ensure efficient resource utilization.
- Identifying areas where cost-saving measures can be implemented without compromising on quality.
- Allocating funds for faculty development and student support services.
- Seeking partnerships with local industries for funding and collaborative projects.

Third Year

- Expanding budget allocation for academic program development and enhancements.
- Maintenance, management and operation of the Funds, Accounts, Audit and Annual Report. Invest in technology infrastructure for online learning and communication.
- Invest in technology infrastructure for online learning and communication.
- Encouraging faculty members to apply for research grants and external funding to support research projects and initiative.
- Collaborating with government agencies and industry partners to access research grants and funding opportunities.

Fourth Year

- Allocating funds for ongoing infrastructure development and maintenance.
- Maintenance, management and operation of the Funds, Accounts, Audit and Annual Report
- Enhancing scholarship programs to attract and retain talented students.
- Explore new revenue streams beyond tuition fees, such as hosting conferences, renting facilities, and offering executive education programs.
- Developing strategies to increase enrollment and attract international students.
- Allocating funds for accreditation and quality assurance processes.

Fifth Year

- Reviewing and adjusting budget based on the institution's growth and changing needs.
- Maintenance, management and operation of the Funds, Accounts, Audit and Annual Report
- Allocating funds for faculty research grants and conference participation.
- Investing in modern library resources and digital learning platforms.
- Developing a long-term financial plan that outlines the university's financial goals and strategies for the next decade and beyond.

The Remaining 10-Year Plan

Sixth Year

- Increasing budget allocation for faculty and staff professional development.
- Creating a contingency fund for unforeseen expenses.
- Exploring partnerships with international organizations for funding and collaboration.

Seventh Year

- Allocating funds for the development of research centers and innovation labs
- Expanding budget for community engagement and outreach programs.
- Focusing on upgrading and maintaining IT infrastructure and equipment.

Eighth Year

- Reviewing and optimizing the budget to reflect increased enrollment and activities.
- Allocating funds for the enhancement of sports and recreational facilities.
- Seeking funding for sustainability initiatives and eco-friendly campus projects.

Ninth Year

- Investing in student support services, including counseling and career guidance.
- Allocating funds for accreditation and quality assurance processes.
- Creating a fund for alumni engagement and networking events.

Tenth Year

- Reviewing and refining the budget to accommodate the evolving needs of the institution.
- Allocating funds for faculty recruitment, retention, and promotions.
- Focusing on capital expenditure for major infrastructure improvements.

Eleventh Year

- Allocating funds for advanced technology integration in classrooms and labs.
- Establishing a fund for innovation and entrepreneurship initiatives.
- Increasing investment in faculty and student research projects.

Twelfth Year

- Allocating funds for the establishment of a dedicated health and wellness center.
- Investing in improving administrative efficiency through technology solutions.
- Seeking funding for academic conferences, seminars, and workshops.

Thirteenth Year

- Reviewing and adjusting the budget to align with the institution's long-term goals.
- Allocating funds for cultural and arts events that enrich campus life.
- Creating a fund for community development projects in collaboration with local stakeholders.

Fourteenth Year

- Allocating funds for faculty-led academic initiatives and interdisciplinary projects.
- Enhancing financial support for students from marginalized backgrounds.
- Investing in upgrading laboratory equipment and research facilities.
- Allocating funds for accreditation and quality assurance processes.

Fifteenth Year

- Reviewing the budget to ensure financial sustainability and responsible growth.
- Allocating funds for celebrating the institution's achievements and milestones.
- Establishing a legacy fund to support future generations of students and initiatives.

(v) Proposed Faculty Strength for 5 Years (Total by the end of 5th Year)

	School	Annual Intake (Students)	Total Strength (Students)	Dean/ Director (Professor)	Professor	Assoc. Professor	Assistant Professor	Tutors	Total
1	SICO	984	3672	1	30	60	62	48	201
2	SIKS	642	1896	1	15	30	32	24	102
3	STLA	390	1510	1	11	23	47	-	82
4	SENS	210	790	1	6	12	13	11	43
5	SCWL	140	470	1	4	7	8	6	26
6	SAHS	696	2892	1	22	43	44	37	147
7	SMLW	345	1215	1	10	20	21	18	70
8	SHBM	230	830	1	7	14	14	11	47
9	CRIN	30	70	1	2	4	4	4	15
	Total	3667	13345	9	107	213	245	159	733

- The recruitment will be based on designation wise distribution of workload as defined by UGC under its regulations on minimum qualifications for appointment of teachers and other academic staff in Universities. UGC pay will be offered to all the deserving candidates. Even higher pay will be offered to more deserving candidates in order to attract qualified and eminent Faculty.

SICO : School of Intelligence and Computing

SIKS : School of Indian Knowledge Systems

STLA : School of Technology-Led Agriculture

SENS : School of Energy Studies

SCWL : School of Community Wellness and Lifestyle Management

SAHS : School of Allied Health Sciences

SMLW : School of Management and Law

SHBM : School of Health and Biomedical Sciences

CRIN : Center for Research and Innovation

(vi) 15-Year Fund Flow Statement (Projected Expenditure and Revenue)

Projections for the	All schools consolidated									
ITEM	Expenditure in Financial Year (RS IN CRORES)									
	1	2	3	4	5	6	7	8	9	10
PROJECTED EXPENDITURE										
Buildings	166.66	166.67	83.33	33.33	70.83	95.84	112.50	104.36		
Library books		1.66	2.53	2.76	2.30	0.98	0.24	2.29	3.02	3.02
Equipments & Instruments	33.33	31.67	14.14	3.91	11.87	18.19	22.26	18.58	0.00	0.00
Faculty salaries		22.90	55.82	116.25	181.08	220.71	256.83	290.64	319.70	351.68
Non teaching staff salaries		1.94	5.31	8.71	11.56	12.75	13.03	13.23	13.23	13.23
Recurring expenditure		50.02	114.07	175.37	236.38	279.72	317.31	352.12	469.83	507.52
Miscellaneous expenditure	0.00	0.00	0.00	0.00						
Total	200.00	274.87	275.20	340.32	514.02	628.18	722.17	781.21	805.78	875.44
PROJECTED REVENUE					-	-	-	-	-	-
Tuition fee	0.00	58.51	153.18	292.80	451.16	552.32	640.40	732.08	805.29	885.82
Other fee	0.00	14.95	36.93	60.78	78.70	98.40	116.04	127.97	131.75	131.75
Total		73.46	190.10	353.57	529.85	650.71	756.45	860.05	937.03	1017.56
Surplus / (Deficit)	-200.00	-201.41	-85.09	13.25	15.84	22.53	34.28	78.84	131.26	142.12

Projections for the	All schools consolidated					
ITEM	Expenditure in Financial Year (RS IN CRORES)					TOTAL
	11	12	13	14	15	
PROJECTED EXPENDITURE						
Buildings						833.53
Library books	3.32	3.65	4.02	4.42	4.86	39.07
Equipments & Instruments	0.00	0.00	0.00	0.00	0.00	153.95
Faculty salaries	386.84	425.53	468.08	514.89	566.38	4177.32
Non teaching staff salaries	13.23	13.23	13.23	13.23	13.23	159.12
Recurring expenditure	549.06	595.13	646.18	704.14	770.49	5767.31
Miscellaneous expenditure						-
Total	952.45	1037.53	1131.51	1236.67	1354.95	11130.30
PROJECTED REVENUE	-	-	-	-	-	-
Tuition fee	974.40	1071.84	1179.02	1296.92	1426.62	10520.34
Other fee	131.75	131.75	131.75	131.75	131.75	1456.00
Total	1106.14	1203.58	1310.77	1428.67	1558.36	11976.34
Surplus / (Deficit)	153.70	166.05	179.26	192.00	203.41	846.04

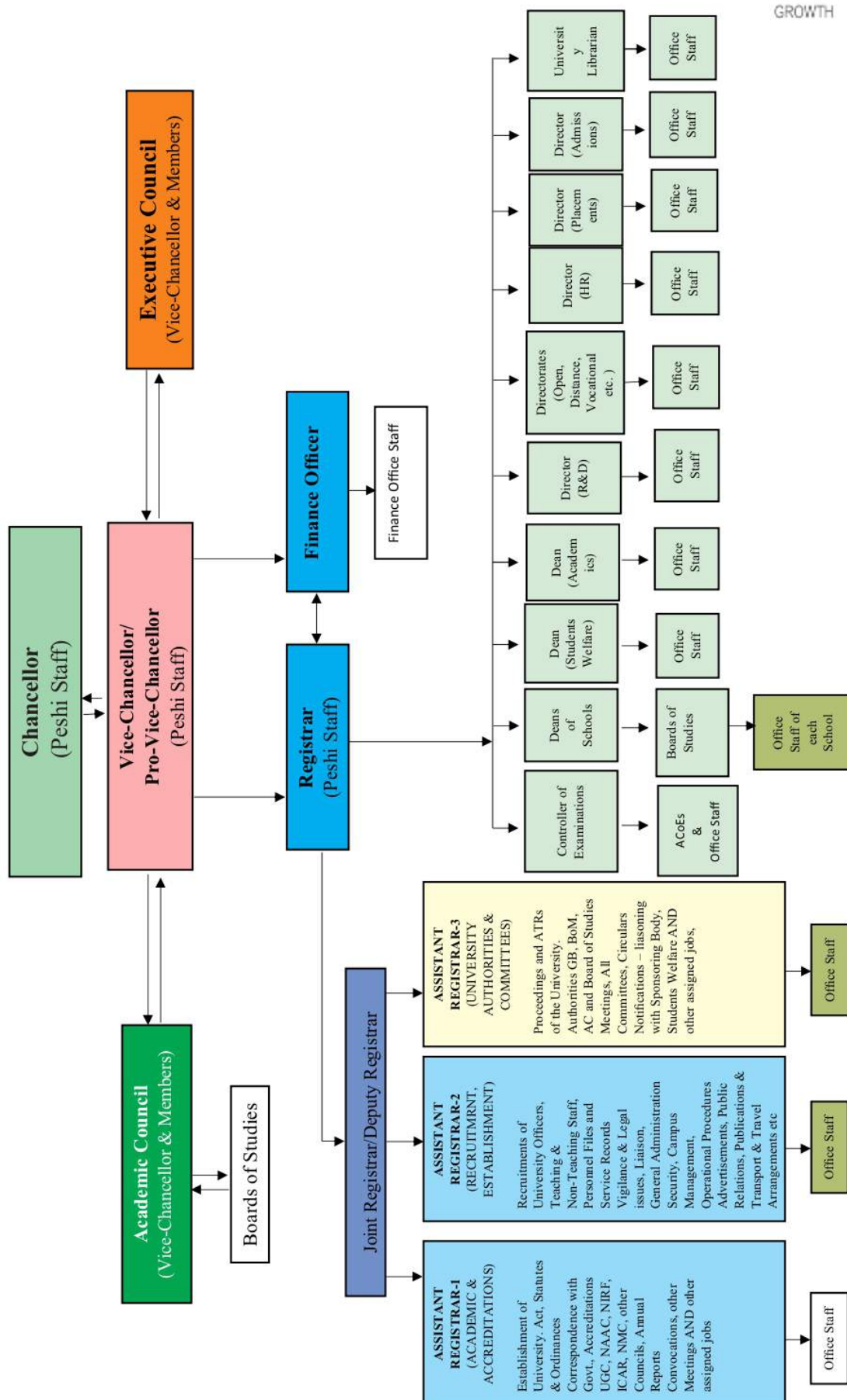
(h) Administrative Plan

(i) The 15- Year Strategic Vision Plan

Based on its own administrative experience in the MNRET for the last 5 decades, the Institution envisions a well-structured administrative plan to ensure smooth operations, effective governance, a strong administrative foundation, and sustainable growth. This Administrative Plan outlines a comprehensive strategy to strengthen the administrative framework of the institution over the next fifteen years, enabling it to achieve its goals and objectives efficiently. Through effective administrative practices, the institution can focus on its core mission of providing quality education and contributing positively to society.

The process of systems administration is centered on a basic philosophy of administration, leadership styles and techniques, and the mission of the institution. It emphasizes that the institution will accomplish organizational goals by utilizing basic planning assumptions, objectives, and goals, implementing processes, evaluating feedback, and incorporating modification or revision processes when necessary. The ultimate responsibility for ensuring that the institution is in compliance with the rules, laws, and regulations of the various statutory bodies under discussion rests with the Vice-Chancellor.

(ii) MNR HERA (Institution proposed to be Deemed to be University)
(Organisational Structure)



Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Organizational Structure and Governance - Presenting the current organizational structure and governance model - Discussing potential enhancements or restructuring for administrative efficiency - Defining the administrative structure, roles, and responsibilities of key personnel, including Chancellor, Vice-Chancellor, Pro-Vice-Chancellor, Registrar, Finance Officer and other officers - Appointment of Vice-Chancellor, Pro-Vice-Chancellor, Registrar, Finance Officer, and other officers is to be done as per the provisions in Section 23 of the UGC notification 2023			
2	Administrative Process Optimization - Conducting an audit of existing administrative processes and workflows - Identifying bottlenecks and inefficiencies for process improvement - Implementing streamlined and standardized administrative procedures			
3	Resource Planning and Allocation - Identifying the resource requirements for the university's growth and development - Allocating resources effectively to support various administrative functions - Ensuring optimal utilization of financial, human, and physical resources			
4	Institutional Restructuring and Consolidation as per the provisions in Section 10 of NEP 2020. - Curriculum Restructuring and Skill-based Education - Promoting Multilingualism and Regional Languages - Leveraging Technology in Education - Ensuring Inclusivity and Equal Opportunities			
5	Optimal Learning Environments and Support for Students as per the provisions in Section 12 of NEP 2020. - Leveraging Technology for Learning: - Support for Children with Disabilities - Promoting Extracurricular Activities - Enhancing Teacher-Student Interactions - Monitoring and Evaluation Mechanisms			

6	Motivated, Energized, and Capable Faculty as per the provisions in Section 13 of NEP 2020. • Continuous Professional Development • Research and Scholarly Activities	
	• Faculty Recognition and Appreciation • Faculty-Community Engagement	
7	Teacher Education as per the provisions in Section 15 of NEP 2020. • Integrating Technology in Teacher Education • Emphasizing Pedagogy and Practical Training • Teacher Mentoring Programs • Promoting Research and Innovation in Education	
8	Digital Transformation and Technology Adoption • Discussing the role of information technology in administrative processes • Implementing digital solutions for administrative tasks, such as e-payments and e-recruitment • Emphasizing data security and privacy in the digital transformation process	
9	Sustainability and Green Initiatives • Integrating sustainability principles into administrative practices • Implementing green initiatives to reduce the university's environmental impact • Promoting a culture of environmental consciousness among administrative staff	
10	Performance Evaluation and Accountability • Defining key performance indicators for administrative functions • Establishing a system for regular performance evaluation and feedback • Ensuring accountability and transparency in administrative processes	

(iii) The 5-Year Rolling Implementation Plan

First Year

- Defining the administrative structure, roles, and responsibilities of key personnel, including Chancellor, Vice-Chancellor, Pro-Vice-Chancellor, Registrar, Finance Officer and other officers.
- Appointment of Vice-Chancellor, Pro-Vice-Chancellor, Registrar, Finance Officer, and other officers is to be done as per the provisions in Section 23 of the UGC notification 2023.

- Developing and implementing administrative policies and procedures for various functions such as Finance, Human Resources, Research, Alumni, and student affairs.
- Identifying the infrastructure and facilities required to support administrative functions, academic programs, research, and student services.
- Allocating resources for the construction and development of administrative buildings and facilities.
- Creating an administrative manual outlining processes and protocols.
- Conducting an audit of existing administrative processes and work flows
- Institutional Restructuring and Consolidation as per the provisions in Section 10 of NEP 2020.
- Creating Optimal Learning Environments and Support for Students as per the provisions in Section 12 of NEP 2020.

Second Year

- Reviewing and refining administrative processes based on first year experience.
- Implementing robust information technology infrastructure to support administrative processes, data management, and communication.
- Adopting and integrating management information systems for efficient record-keeping and decision-making.
- Developing a comprehensive human resources policy to attract, hire, and retain qualified administrative staff.
- Providing training and professional development opportunities to enhance administrative skills.
- Establishing a sound financial management system to ensure transparency, accountability, and optimal resource allocation.
- Developing a budgeting and financial reporting framework to monitor and control expenses.
- Implementing streamlined and standardized administrative procedures.

Third Year

- Strengthening administrative efficiency through technology solutions.
- Set up a quality assurance cell to monitor administrative processes and ensure adherence to quality standards.

- Preparing for accreditation and certification by recognized accreditation bodies to enhance institutional credibility.
- Identifying opportunities for collaborations and partnerships with other institutions, industry, and government bodies to enhance administrative efficiency and resource-sharing.
- Ensuring optimal utilization of financial, human, and physical resources

Fourth Year

- Strengthen administrative support services, including campus security, transportation, health services, and accommodation facilities for students and staff.
- Reviewing and optimizing administrative processes to reflect growth and changes.
- Enhancing student support services, including counselling and career guidance.
- Developing a comprehensive crisis management plan to address emergencies and ensure the safety and well-being of the university community.

Fifth Year

- Assess the effectiveness of the administrative plan and identify areas for improvement.
- Establishing a dedicated office for alumni engagement and networking.
- Implementing a transparent financial management system with regular audits.

The Remaining 10-Year Plan

Sixth Year

- Reviewing and refining administrative policies based on the evolving needs.
- Strengthening international collaborations and partnerships with other institutions.
- Developing an office for innovation and entrepreneurship to support student startups.

Seventh Year

- Establishing an administrative dashboard for data-driven decision-making.
- Enhancing faculty and staff development programs and training.
- Strengthening administrative support for research activities and grant applications.

Eighth Year

- Reviewing and optimizing administrative processes for scalability.
- Developing a sustainability plan for campus operations and initiatives.

Ninth Year

- Strengthening administrative support for accreditation processes.
- Implementing an advanced learning management system for online courses.
- Enhancing administrative transparency and communication with stakeholders.

Tenth Year

- Reviewing and refining administrative policies to align with institutional goals.
- Establishing a dedicated office for social impact and community engagement.
- Developing a robust cybersecurity and data protection strategy.

Eleventh Year

- Strengthening administrative support for faculty-led interdisciplinary projects.
- Implementing an integrated campus facilities management system.
- Developing a strategic communication plan for alumni engagement.

Twelfth Year

- Reviewing and optimizing administrative processes to ensure efficiency.
- Establishing a dedicated office for international student affairs and exchange programs.
- Enhancing administrative support for diversity and inclusion initiatives.

Thirteenth Year

- Developing an office for advanced pedagogical techniques and teaching excellence.
- Strengthening administrative support for technology-driven research initiatives.
- Integrating sustainability principles into administrative practices.

Fourteenth Year

- Reviewing and refining administrative policies to ensure responsiveness.
- Developing a strategic administrative plan for the institution's legacy and future.
- Implementing green initiatives to reduce the university's environmental impact.
- Promoting a culture of environmental consciousness among administrative staff.

Fifteenth Year

- Strengthening administrative support for strategic partnerships and collaborations.
- Reviewing and optimizing administrative processes for sustainability and growth.
- Developing a comprehensive plan for administrative succession and continuity.

(i) Governance Plan

(i) Overview

The proposed DTBU strongly believes that, as provided in NEP 2020, the effective governance and leadership enable the creation of a culture of excellence and innovations in Quality higher education. The governing bodies shall be responsible and accountable to the stakeholders and the UGC through transparent self-disclosures of all relevant records, rules and regulations for meeting all regulatory guidelines. All leadership positions in administration, academics, student welfare, research, human resources development and management, training and placements will be offered to persons with high academic qualifications and demonstrated administrative, teaching and research capabilities along with capabilities to manage complex situations. The following are the salient features of the governance system of the MNR Educational Trust which is the sponsoring body of the University.

- The MNRET is exclusively established as a not-for-profit Trust for running the educational institutions and no other activities are being carried.
- The sponsoring body shall make available the necessary infrastructure for operation the DTBU without any rental or other charges.
- All moveable and immovable assets of the DTBU shall be used for the purpose of conducting academic activities, promotion of research and related administrative requirements of the DTBU.
- The following are the authorities of the DTBU whose constitution and powers and functions, as provided in Section 11 of UGC Notification 2023, have been furnished in preceding sections of the DPR.
 - (1) Executive Council
 - (2) Academic Council
 - (3) Finance Committee
 - (4) Boards of Studies
- The Executive Council shall be the highest governing body of the DTBU headed by the Vice-Chancellor.

- All leaders of the DTBU shall demonstrate strong alignment to constitutional values along with attributes such as strong social commitment, belief in team work, pluralism, ability to work with diverse people and a positive outlook. They shall be selected by the Executive Council.

(ii) The 15-Year Strategic Vision Plan

An effective governance structure is indispensable to steer the university towards its goals, ensuring transparency, accountability, and efficient decision-making processes. The aim of a governance plan is to create a structured, accountable, and transparent governance framework that supports the institution's mission, vision, and values. It serves as a roadmap for organizing and managing the university's affairs, providing clarity on roles, responsibilities, and authority among various governing bodies, administrators, and stakeholders. It fosters an environment of excellence, collaboration, and ethical conduct, ultimately contributing to the university's success and positive impact on its students, faculty, staff, and society at large.

The University shall use state-of-the-art processes and technologies for the governance and management of teaching, learning, assessment, research, and the organization and creation of socioeconomic wealth for individuals, society, and the country. Mechanisms will be put in place for continuous evaluation in all processes to nurture creativity and innovation. Various statutory bodies will be set up to comply with the UGC and the Government regulations for the smooth functioning and coordination among the Sponsoring Body and the University functionaries.

The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Developing a clear Vision and Mission statement aligned with the university's core values and long-term objectives			
2	Establishing a robust Governance Structure comprising experts from academia, industry, and public representatives			
3	Defining autonomy and decision-making processes to promote transparent and efficient governance			
4	Conducting regular meetings of Executive Council, Academic Council, Finance Committee and Boards of Studies			
5	Providing administrative assistance in curriculum development, quality assurance, faculty recruitment, research, and student welfare, etc.			
6	Emphasizing Faculty Development Programs to enhance teaching skills and research capabilities			
7	Strategic Partnerships with industries, research institutions, and international universities			
8	Student Feedback for continuous program enhancement			
9	Establish a Research and Development Committee to oversee research initiatives			
10	Continuous Infrastructure Up gradation for evolving needs			
11	Effective Implementation and Monitoring of Development Plan			
12	Implementation of e-governance in Administration, Finance, Planning, Examination, and Student Admissions			
13	Effective Budget Allocation, Utilization, and Public Accounting at Institute level			
14	Implementing Sustainability Practices to foster environmental consciousness and sustainable growth			
15	Conducting meetings of Internal Quality Assurance Cell (IQAC).			
16	Conducting an Audit in every Academic Year			
17	Students grievances redressal system			
18	Prevention of sexual harassment and ragging			

(iii) The 5-Year Rolling Implementation Plan

First Year

- Establishing the governance structure, including the Executive Council, Academic Council, Board of Studies, and other statutory bodies, and clearly outline the roles, responsibilities, and authority of each statutory body.
- Appointing qualified individuals to serve on the Executive Council, Academic Council, Board of Studies, and other Statutory Bodies.
- Ensuring compliance with relevant laws, regulations, and guidelines governing educational institutions.
- Developing policies and procedures for decision-making, accountability, and transparency.
- Formulating a code of ethics and conduct for all members of the university community.

Second Year

- Developing and implementing policies that address various aspects of the university's operations, including academic affairs, finance, human resources, and student affairs.
- Ensuring policies align with the university's mission and support its strategic objectives.
- Implementing mechanisms for holding accountable those responsible for key decisions and outcomes.
- Reviewing and refining the governance structure based on first year experience.

Third Year

- Developing a strategic plan that outlines the university's long-term goals, priorities, and action plans.
- Strengthening the governance framework through technology solutions and platforms.
- Establishing a system for regular review and assessment of the governance structure.
- Aligning governance decisions with the strategic direction of the institution.

Fourth Year

- Establishing external advisory boards comprising experts and industry leaders to provide guidance and insights on strategic matters.
- Conducting a comprehensive review of the governance structure, policies, and practices to identify areas for improvement.
- Implementing changes and adjustments based on the review findings and evolving needs.
- Reviewing and optimizing the governance structure to adapt to growth and changes.

Fifth Year

- Developing a succession plan for key governance positions to ensure a smooth transition of leadership.
- Implementing mechanisms for governance review and external evaluations.
- Establishing a dedicated office for legal and compliance matters.

The Remaining 10-Year Plan

Sixth Year

- Reviewing and refining governance policies based on evolving institutional needs.
- Strengthening mechanisms for community engagement in governance decisions.
- Developing guidelines for assessing and improving the effectiveness of governance processes.

Seventh Year

- Establishing an automated governance dashboard for data-driven decision-making.
- Enhancing mechanisms for faculty and staff representation in decision-making.
- Developing guidelines for governance of interdisciplinary and collaborative initiatives.

Eighth Year

- Reviewing and optimizing governance mechanisms for scalability and efficiency.
- Establishing mechanisms for governance oversight of international collaborations.
- Developing guidelines for governance support of innovation and entrepreneurship initiatives.

Ninth Year

- Implementing mechanisms for monitoring and ensuring compliance with regulatory standards.
- Strengthening mechanisms for governance support of accreditation processes.
- Developing guidelines for governance of student exchange and internationalization.

Tenth Year

- Reviewing and refining governance policies to align with strategic goals.
- Establishing mechanisms for governance oversight of research ethics and integrity.
- Developing guidelines for governance of technology-driven initiatives and initiatives.

Eleventh Year

- Strengthening mechanisms for governance oversight of strategic partnerships.
- Implementing mechanisms for governance review of diversity and inclusion initiatives.
- Developing guidelines for governance of social impact and community engagement.

Twelfth Year

- Reviewing and optimizing governance mechanisms to ensure responsiveness.
- Developing guidelines for governance of legacy planning and future sustainability.
- Establishing mechanisms for governance oversight of leadership development.

Thirteenth Year

- Strengthening mechanisms for governance support of faculty development.
- Developing guidelines for governance of advanced pedagogical techniques.

Fourteenth Year

- Reviewing and refining governance policies for long-term sustainability.
- Establishing mechanisms for governance oversight of fundraising and development.
- Developing guidelines for governance of administrative and operational continuity.

Fifteenth Year

- Strengthening mechanisms for governance oversight of strategic planning.
- Reviewing and optimizing governance mechanisms to ensure adaptability.
- Developing guidelines for governance of the university's long-term legacy and impact.

(j) Institutional Development Plan

(i) Overview

The proposed Institution deemed to be University (MNR-HERA) strongly believes that Higher Education is the process of learning and the acquisition of knowledge, skills, values, morals, and beliefs to unlock human potential fully. It is widely acknowledged as the most influential tool for both individual and social development, contributing to the attainment of social justice and equity within society. Education embodies a mission, and its success hinges on the active participation of all stakeholders. The imperative of the National Education Policy (NEP) for holistic education is underscored by the present circumstances.

The Formulation of an Institutional Development Plan (IDP) constitutes one of the initial steps toward the implementation of the New Education Policy (NEP) 2020. The Institutional

Development Plan lays down the roadmap of various provisions of NEP in a time-bound manner, detailing the institution's needs, constraints, targets, and timelines. Additionally, the IDP serves as a structured framework through which an institution can establish its own indicators, set attainable targets, prioritize actions, assess financial requirements, and overcome constraints during the NEP's implementation.

The vision of the MNR-HERA is to enlighten, empower, and enrich the learners, ensuring their qualitative improvement. The institution is committed to providing students with ample opportunities for learning, reading, and recreation. Therefore, the foremost priority is the development of essential infrastructure, including well-equipped ICT classrooms, a Computer Centre, playgrounds, an auditorium, a spacious library, state-of-the-art laboratories, separate hostels for girls and boys, canteen, a campus designed to accommodate differently-abled individuals, and proper sanitation and drinking water facilities.

(ii) Objectives and Goals

The Institutional Development Plan (IDP) for the MNR-HERA, aims to strategically guide the institution's growth and development in alignment with the institution vision, mission, and the dynamic landscape of higher education. The plan outlines a set of comprehensive objectives and goals that will be pursued over a defined timeframe to ensure the institution's continuous enhancement and progress.

The following are the key objectives and corresponding goals to be achieved by the IDP:

S.No	Objective	Goal
1	To create a modern and conducive learning environment	Upgrading classrooms, laboratories, libraries, and technology infrastructure to facilitate effective teaching, learning, and research.
2	To offer relevant and innovative academic programs.	Developing interdisciplinary courses, integrate industry-oriented skills, and introduce innovative teaching methodologies to enhance the learning experience.
3	To promote research culture and contribute to knowledge creation.	Establishing research centers, facilitate collaborative research projects, and encourage faculty and students to publish in reputable journals.
4	To maintain and improve quality standards in Higher Education.	Achieving accreditation from recognized bodies, implement feedback mechanisms for continuous improvement, and ensure compliance with best practices.
5	To nurture an entrepreneurial mindset and promote innovation.	Establishing innovation hubs, support student startups, and facilitate technology transfer and commercialization of research.
6	To ensure transparent and efficient institutional operations.	Streamlining administrative processes, adopt digital solutions, and enhance decision-making mechanisms.

(iii) The 15- Year Strategic Vision Plan

The following 15-Year Strategic Institutional Development Plan (IDP) lays the foundation for establishing the MNR-HERA that embodies excellence, innovation, and holistic growth. This comprehensive plan outlines the strategic trajectory for nurturing an institution that is not only academically distinguished but also socially impactful. By focusing on various facets of institutional development, this plan aims to shape a university that prepares future leaders, drives research breakthroughs, and contributes positively to society.

The 15-Year Strategic Vision Plan

Item	Years			Remarks
	1-5 Years	6-10 Years	11-15 Years	
1	Enhancing the Quality of Education - To develop academic master plan. - To provide enhanced resources for student academic support. - To accelerate in the areas of teaching excellence and intellectual discovery. - To examine the courses to determine the best strategy for improving course outcomes, achieving success and providing access to appropriate academic support			
2	Infrastructure Blueprint Creating a modern infrastructure blueprint with advanced classrooms, research labs, libraries, and campus facilities for an enriching learning environment			
3	Academic Program Diversification Offering a range of undergraduate, postgraduate, and doctoral programs across diverse disciplines to meet evolving educational needs.			
4	Holistic and Multidisciplinary Education - To Providing high-quality multidisciplinary and cross-disciplinary teaching and research across fields - To assure the holistic education serve among all students. - To facilitate academic autonomy among faculty			
5	Governance Framework Establishment Formulating an effective governance structure, defining roles, responsibilities, and decision-making processes to ensure transparency and accountability.			
6	Academic Bank of Credit (ABC) - To develop Imaginative and flexible curricular structures and integrate CBCS in all disciplines. - To develop and implement credit based course uniformly across the discipline - To facilitate multiple exit options for learners.			

7	Research and Innovation Ecosystem Establishing research centers, innovation hubs, and interdisciplinary platforms to foster groundbreaking research, creativity, and collaboration.	
8	Faculty and Staff Recruitment Strategy Implementing a rigorous recruitment strategy to attract distinguished faculty members, administrators, and staff who align with the university's ethos.	
9	Technological Integration Implementing cutting-edge technologies in teaching, learning, and research to enhance the quality of education and research outcomes.	
10	Centers of Excellence Developing specialized centers of excellence to become hubs of advanced research, innovation, and knowledge dissemination.	
11	Alumni Engagement and Networking Establishing a strong alumni network that fosters lifelong relationships, knowledge sharing, and contributions to the university's growth.	
12	Sustainable Practices Integrating sustainability initiatives into operations, incorporating eco-friendly practices and promoting social responsibility.	
13	Industry and Community Engagement Forge partnerships with industries, non-profit organizations, and local communities to enhance practical learning experiences and address real-world challenges.	

(iv) The 5 - Year Rolling Implementation Plan

This 5-year Institutional Development Plan (IDP) outlines a strategic roadmap for establishing MNR-HERA, thriving on academic excellence, research prowess, and societal impact. Through a holistic approach encompassing infrastructure, faculty, curriculum, and community engagement, the university will position itself as a beacon of transformative education and innovation.

First Year

- Developing a comprehensive vision and mission statement that encapsulates the university's purpose, values, and long-term aspirations.
- Developing the initial organizational structure and key leadership roles.
- Identifying key academic disciplines and programs aligned with emerging societal and industry needs.
- Establishing a dedicated committee composed of representatives from academic, administrative, and student bodies to oversee the IDP's implementation, including academic planning, infrastructure development, faculty recruitment, and student affairs.
- Initiating necessary improvements in infrastructure, including modern classrooms, laboratories, and campus facilities, to create an ideal learning environment.

- Conducting faculty training programs to enhance teaching skills and align instructors with the university's core values.
- Offering a range of undergraduate, postgraduate, and doctoral programs across diverse disciplines to meet evolving educational needs.
- Providing high-quality multidisciplinary and cross-disciplinary teaching and research across fields.
- Ensuring the provision of holistic education to all students.
- Academic Bank of Credit (ABC)
 - To develop Imaginative and flexible curricular structures and integrate CBCS in all disciplines.
 - To develop and implement credit based course uniformly across the discipline.
 - To facilitate multiple exit options for learners.

Second Year

- Revising existing programs and introduce new ones, reflecting emerging trends and aligning with industry needs.
- Establishing interdisciplinary research teams and allocate resources to initiate research projects aligned with the university's focus areas.
- Implementing technology-driven learning tools and platforms to enhance teaching methods and student engagement.
- Developing a modern campus infrastructure plan, encompassing state-of-the-art classrooms, research facilities, libraries, and student amenities.
- Initiating collaborations with industry partners for hands-on training, internships, and research projects.
- Strengthening student support services, including counseling and career guidance, to ensure a holistic learning experience.
 - Implementing cutting-edge technologies in teaching, learning, and research to enhance the quality of education and research outcomes.

Third Year

- Establishing specialized research centers to intensify research efforts and foster innovation in key domains.
- Encouraging faculty to publish in reputable journals, present at conferences, and secure research grants.
- Deepen industry partnerships for internships, joint research, and real-world project opportunities for students and faculty.
- Launch student exchange programs and international collaborations to foster global perspectives and cross-cultural learning.

- Initiating efforts to build an active alumni network that contributes to the university's growth and supports students' career development.
- Developing a curriculum that integrates interdisciplinary learning and practical experiences.

Fourth Year

- Establishing an innovation hub to incubate student-led startups and entrepreneurial ventures.
- Pursuing accreditation from relevant national and international accrediting bodies to ensure academic quality and recognition.
- Enhancing research output by focusing on high-impact publications, patents, and collaborative projects with renowned institutions.
- Evaluating the effectiveness of the governance structure and make necessary adjustments to streamline decision-making processes.
- Allocating dedicated time and resources for faculty members to engage in advanced research projects.
- Strengthening the institution's brand and identity through marketing and outreach.
- Establishing a strong alumni network that fosters lifelong relationships, knowledge sharing, and contributions to the university's growth.

Fifth Year

- Implementing sustainable practices across campus operations, focusing on energy efficiency, waste reduction, and green initiatives.
- Evaluating the success of existing programs and explore opportunities to expand into emerging fields and new academic disciplines.
- Showcase the university's achievements through international conferences, awards, and collaborations to elevate its global profile.
- Introduce continuing education programs for alumni and professionals to ensure their skills remain relevant and up-to-date.
- Achieving full enrollment capacity and maintain academic quality.
- Conducting a comprehensive review of the entire 5-year implementation journey, celebrating successes and identifying areas for further enhancement.

The Remaining 10-Year Plan

Sixth Year

- Strengthening alumni engagement and involvement in institution-building.
- Strengthening the institution's commitment to social responsibility and community engagement.
- Introducing specialized graduate and postgraduate programs.

- Implementing technology-enabled learning solution.
- Evaluating and enhancing the effectiveness of the existing curriculum.

Seventh Year

- Focusing on research and innovation, promoting interdisciplinary collaboration.
- Enhancing the quality of teaching through faculty training and development.
- Establishing an internationalization strategy for student and faculty exchange.
- Developing mechanisms for continuous feedback and improvement.

Eighth Year

- Expanding campus infrastructure to accommodate growing needs.
- Establishing a comprehensive student assessment and feedback system.
- Fostering industry-academia partnerships for research and internships.

Ninth Year

- Strengthening the institution's reputation through participation in national and international rankings.
- Establishing mechanisms for faculty recognition and research funding.
- Initiating collaborations with global institutions for research and exchange programs.
- Launching initiatives for entrepreneurship and innovation.

Tenth Year

- Developing a robust system for monitoring and evaluation of academic quality.
- Strengthening the institution's commitment to sustainability and environmental responsibility.
- Reviewing and updating the institutional policies and regulations.
- Establishing centers of excellence in key research areas.

Eleventh Year

- Expanding collaborations with industry partners for specialized training and skill development.
- Strengthening connections with the alumni network for mentorship and support.
- Establishing a framework for lifelong learning and continuing education.
- Enhancing the campus facilities and amenities for students and staff.

Twelfth Year

- Focusing on faculty research and publications in reputable journals.
- Developing strategies for enhancing diversity and inclusion on campus.
- Enhancing the institution's financial sustainability through effective resource management.

Thirteenth Year

- Launching specialized doctoral programs and advancing research initiatives.
- Strengthening governance and decision-making processes.
- Implementing a comprehensive career services program for students.
- Engaging with policymakers and contribute to educational reforms.

Fourteenth Year

- Expanding international collaborations for joint research and academic programs.
- Establishing an institute-wide quality assurance framework.
- Evaluating and updating the institution's long-term strategic plan.
- Integrating sustainability initiatives into operations, incorporating eco-friendly practices and promoting social responsibility.

Fifteenth Year

- Focusing on the institution's long-term impact and legacy.
- Establishing mechanisms for sustaining institutional values and culture.
- Strengthening the institution's financial position.
- Reviewing and reflecting on the institution's achievements and plans for future growth.

16. Identifiable Outputs and Outcomes of the proposed programmes by MNR-HERA (proposed DTBU)

Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Intelligence and Computing Department of Intelligence and Computing - B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Machine Learning) - B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Data Science) - M.Tech/M.S - CSE (Artificial Intelligence and Machine Learning) - M.Tech/M.S - CSE (Artificial Intelligence and Data Science) Department of Mechatronics Engineering - B.Tech/B.S (Hons) - Mechanical (Mechatronics) - M.Tech/M.S - Mechanical (Mechatronics)	<i>Cutting-Edge Technologists in AI & ML & DS will have been prepared for the 4th Industrial Revolution</i> <i>The students will become 21st Century holistic AI&ML&DS graduates and post-graduates having specialized in the chosen area and minors in other cutting-edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>The graduates will have acquired Ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer based systems and modifications for applications in these cutting edge technologies</i> <i>Ability to design software systems based on interpreting available data in all societal and engineering domains and analyse their performance</i> <i>Ability to analyse the problem, subdivide into smaller tasks with well-defined interface for interaction among</i>	<i>NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals</i> *The programmes enable an individual to study one or more specialized areas of interest at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence. <i>Strategic Needs of the Country fulfilled</i> <i>Country needs graduates and post-graduates for application of Cutting-Edge Technologies in every field for 4th Industrial Revolution:</i> In India, the era of Artificial Intelligence, Machine Learning and Data Science has started and all future scientific and

- Ph.D in Mechatronics Engineering Department of Additive Manufacturing - B.Tech/B.S (Hons) - Mechanical (Additive Manufacturing) - M.Tech/M.S - Mechanical (Additive Manufacturing) Department of Computer Science and Engineering - B.Tech/B.S (Hons) - Computer Science and Engineering (CSE) - M.Tech/M.S - Computer Science and Engineering (CSE) - Ph.D in Computer Science and Engineering Department of Electronics and Communication Engineering - B.Tech/B.S (Hons) - ECE (Internet of Things) - M.Tech/M.S - ECE (Internet of Things) - Ph.D in Electronics and Communication Engineering	<i>components, and complete within the specified time frame and domain constraints</i> <i>•Ability to propose original ideas and solutions, culminating into a modern, easy to use tool, by a larger section of the society with longevity</i> <i>•Ability to design, implement, and evaluate secure hardware and integrate with software assuring quality and efficiency.</i> <i>•Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science and engineering practices.</i> <i>•Ability to modularize the problem statement, allocate to individuals and function effectively as an individual and a team player</i> <i>•Ability to communicate effectively the engineering solution to customers/users or peers by means of sufficient and necessary documentation</i> <i>•Ability to demonstrate knowledge and understanding of computer science and engineering principles and apply these to individual's and team work</i> <i>•Ability to understand contemporary issues and to get engaged in lifelong learning by independently and continually expanding knowledge and abilities.</i> <i>•Ability to design and develop effective solutions based on state-of-the-art hardware and efficient software with a blend of creativity and performance.</i> <i>•Ability to pursue higher studies in a multidisciplinary perspective leading to Masters and Research degrees.</i> <i>•Ability to apply these cutting edge technologies in different fields of Engineering, Health care, Agriculture, Finance, Business Management</i>	technological explorations will revolve around these cutting edge technologies in the fields of Intelligence and Computing that are fast gaining prominence in the Country. The “Make in India” programs in all sectors of Industry, Science and Technology, Space Research needs experts in Intelligence and Computing, Mechatronics, AI, ML, 3-D Manufacturing. After two happening decades of Google, social media and massive smartphone penetration; AI is going to be the <i>next Big Thing</i> in technological revolution. We are already seeing its flourishing buds across industries from self-driving cars to advanced IBM Watson in healthcare. These cutting edge technologies cause a disruptive shift in many areas of industry, academia and research. From revolutionizing the automotive and manufacturing sectors with cutting-edge technology to creating 3D bio-printed tissues in the medical fields that require transferable skills and the ability to bring broad-minded, creative ideas to meet client specifications. and is economically viable what the country needs today. These opportunities and challenges make these programs an interesting career option also by the students. India needs applications of these cutting edge technologies in the fields of Medical and Health, Technology-led Agriculture, Green Energy, Environment and Sustainability, Bio-Technology, Lifestyle Management, Community Wellness, Aero Space Research, Information Security, Banking, Authentication of the business transactions through block chain, Natural
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	and Legal aspects culminating in successful careers and entrepreneurs with a focus on societal problem solving. IoT, Mechatronics &AM <i>*The students will become 21st Century graduates in IoT and Additive Manufacturing having minors in other cutting edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>*The Graduates will have achieved core competence in fundamentals of basic sciences required to identify, analyse, formulate, review research literature and solve interdisciplinary Engineering problems.</i> <i>*The graduates will have acquired knowledge and skills in core areas of Electronics with Internet Technology, Telecommunication, Sensors, Cloud Computing and Data Analytics to provide efficient futuristic solutions.</i> <i>*The Graduates will be enabled to effectively use Internet of Things (IOT) technology to solve real life multi-disciplinary problems that caters to the need of society and is economically viable</i> *Engineering knowledge: Apply the knowledge of mathematics, basic, natural and social sciences, engineering fundamentals, and an	Disasters Management, Coastal Resources Research. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-economic and societal issues and contribute to the country's sustainable growth, resilience, and techno-economic global leadership. Space Research: India with the recent grand success of Chandrayan-3 and the launch of Aditya is poised to make further space explorations. The importance of Artificial Intelligence and the Mechatronics has been well known by now AI technology has significantly enhanced satellite navigation and control systems, enabling more accurate and efficient operations. The programmes are well designed to equip the students with the advanced knowledge and skills on these technologies and rise to the country's needs. Environment and sustainability: Knowledge of AI, ML and DS will make individuals better understand the environmental issues and problems and demonstrate knowledge and skills to provide technically feasible, environmentally friendly and economically viable intelligence solutions in societal and environmental contexts particularly for sensor monitored solutions to the problems in Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian context Technology-Led Agriculture: Indian Agriculture presently new set of issues such as global warming, natural resources depletion and
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	engineering specialization to the solution of complex engineering problems. *Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences. *Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations. *Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions. *Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations. *The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. *Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development. *Ethics: Apply ethical principles and commit to	degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. Original research on non-destructive Sensing, Mechatronics (Drones) in Agriculture, Artificial Intelligence for Smart agriculture-food systems, Market Intelligence for forecast of agricultural products prices, optical imaging for on-line grading of agricultural and horticultural produce, computer vision and robotics (Drones) for speciality crop management, phenotyping and AI in confined production systems, image processing and analysis, Uberisation of Farm Machines for farmers using AI and ML for cost effective and timely farming operations for increased crop yields for the benefit of farmers Ethics: Application of these cutting edge technologies will contribute to professional ethics and responsibilities and norms of the engineering practice and minimize human interventions Design/development of new-age solutions: These unique courses in Artificial Intelligence, Machine Learning, Data Science and Additive Manufacturing and Mechatronics with important applications to Health, Environment, Green Energy Environment, Lifestyle Management will make graduates to achieve core competence in fundamentals of basic sciences required to formulate, analyze and solve interdisciplinary complex Engineering problems in core areas of Electronics with Internet Technology,
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	<i>professional ethics and responsibilities and norms of the engineering practice.</i> *Individual and team work: <i>Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.</i> *Communication: <i>Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.</i> *Project management and finance: <i>Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.</i> *Life-long learning: <i>Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.</i> *Design and develop components and systems for applications related to Electronics & Communication, Embedded systems, Sensors & Data Acquisition Systems, Cloud Computing and Information security in the context of Internet of things. *Solve interdisciplinary problems in the fields such as Smart Agriculture, Telemetry, Health, Transportation, Energy, automation and others. *Apply modern engineering tools to solve complex Electronics & Communication Engineering problems pertaining to Internet of things and sensors.	Telecommunication, Sensors, Cloud Computing and Data Analytics to provide efficient futuristic solutions. The MNR HERA creates ambience for multidisciplinary and interdisciplinary thinking, discussion, debate to meet the specified needs with appropriate consideration for the public health and safety, agriculture and the cultural, societal, and environmental considerations. The Intelligence and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice. Economic Development of the Country Good and academically bright national and international students will be attracted to new-age programmes involving cutting edge technologies of artificial intelligence, IoT, machine learning, Mechatronics and their applications in almost all fields. Additionally, the value added and skill enhancement courses for achieving 21st century capabilities are also involved in the programmes for enhancing the employability of the graduates. After having been imparted knowledge and skills in cutting edge technologies and retained in Academia and Industry in India for research and innovations, the graduates will be contributing to the overall economic development of the Country SDGs of the UN accomplished The educational programmes offered by the School will not only develop individuals capable of meeting the challenges faced by the society in
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		tackling the scientific and technological issues, but also contribute to the SDGs of Quality Education (4), Industry Innovation and Infrastructure (9), Climate Action (13), Reduced inequalities (10), Life on Land (15), Affordable and Clean Energy (7).
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Indian Knowledge Systems Department of Cultural Heritage • B.Sc/B.S (Vastu) • B.A (Cultural Heritage) • B.A (Vedic Science & Philosophy) • Diploma in Vastu Department of Indian Music and Cultural Studies • B.A (Carnatic Music) • B.A (Hindustani Music) • B.A (Instrumental Music) • B.A (Indian Classical Dances) • Diploma in Hindustani Music • M.Sc/MA (Indian Classical Dances) • Ph.D in Indian Classical Dances Department of Sankrit and Indian Languages	Promoters of Indology will have been developed <i>*The students will become 21st Century holistic Indian Knowledge Science graduates having minors in the cutting-edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>*The graduates will have gained profound insight into diverse aspects of Indian philosophy, Indian numerical system in advancement of science and technology, arts, sciences and social principles fostering critical thinking and analytical skills and be enabled to appreciate the depth of Indian traditional wisdom and its relevance in contemporary contexts</i> <i>*They will act as the Ambassadors for country's deep rooted traditions, spiritual insights and social practices for instilling a sense of pride, social harmony, mutual</i>	NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals <i>*The programmes enable an individual to study one or more specialized areas of interest at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence.</i> Strategic Needs of the Country fulfilled Education in Indian Knowledge Systems: The India now envisions holistic and multi-disciplinary learning in universities. The “scientific fields”, “professional fields”,

• B.A (Sanskrit) • MA (Sanskrit) Department of Yoga and Naturopathy • B.A (Yoga & Meditation) • B.Sc/B.S (Yogic Sciences) • Diploma in Yoga and Meditation • M.Sc/MA (Yogic Sciences) • Ph.D in Yogic Sciences	<i>respect and unity among the citizens</i> <i>*They will have developed familiarity with Science, Engineering and Technology heritage of ancient and medieval India.</i> <i>*They shall have been provided a unique and interdisciplinary nature and framework of the programmes, equipped themselves with the knowledge and skills to apply these traditional sciences in conjunction with modern AI and DS techniques to create harmonious and data-informed living and working environments.</i> *Foundational Vastu Knowledge: Graduates will have a strong foundational understanding of Vastu Shastra principles, concepts, and history. *Practical Vastu Application: Students will learn to apply Vastu principles to assess and design residential and commercial spaces. *AI and DS Integration: Graduates will integrate AI and DS concepts into Vastu practices, leveraging technology to enhance Vastu analysis and design. *Vastu Site Analysis: Students will gain expertise in conducting comprehensive site analyses to evaluate the Vastu compatibility of a location. *Traditional Building Practices: Graduates will understand traditional architectural practices and construction techniques aligned with Vastu guidelines. *Interdisciplinary Perspective: Students will foster an interdisciplinary approach by combining traditional Vastu knowledge with	“vocational fields” and “Arts and Humanities” and their integration in a multi-disciplinary education system are the need of higher education system. MNR-HERA proposes these programs for inter-disciplinary debate and discussion with the students of other professional Schools proposed as included in the DPR. The programmes contribute to ethical values and sustainable living. Multi-disciplinary and Stimulating Indian Education: To fulfill this strategic need, MNR-HERA will move towards holistic and multi-disciplinary education to lead the country into 21st Century. The programs have included courses of Artificial Intelligence, Mechatronics and Computer applications offered by other Departments like Intelligence and Computing, Mechatronics, Community Wellness and Lifestyle Management, Health and Bio-Medical Sciences in the proposed DTBU in Indian Music, Dance and Modern Indian Languages. In other words, the students of these programs will aim to learn more sciences, cutting edge technologies, agriculture, health care, management and law in one Campus. Viswa Guru: These programs contribute to collective wisdom of ancient India, rooted in spirituality, philosophy, sciences, arts, performing arts, music, Yoga, Vastu, Vedic sciences and social principles. From spiritual and philosophical insights to scientific discoveries, traditional medicine, arts, and social sciences, the programs under Indian Knowledge Systems encompass a wide range of disciplines that reflect the depth of human understanding and exploration. The
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	<i>modern AI and DS methodologies.</i> *Energy Flow Understanding: <i>Students will explore the flow of energy (prana) within living and working spaces and its impact on occupants.</i> *Vastu Remedies: <i>Students will learn about Vastu remedies and adjustments to harmonize imbalances in spaces.</i> *AI and DS Applications: <i>Graduates will apply AI and DS techniques to analyze spatial data, environmental factors, and energy flows within Vastu spaces.</i> *Cultural and Philosophical Context: <i>Students will understand the cultural, philosophical, and spiritual significance of Vastu in different cultures.</i> *Vastu Consultancy: <i>Graduates will develop skills to provide Vastu consultancy services to clients seeking Vastu-compliant designs.</i> *Vastu and Sustainability: <i>Students will explore the integration of Vastu principles with sustainable and eco-friendly architectural practices.</i> *History of Architecture: <i>Students will gain insights into the history and evolution of architecture in relation to Vastu.</i> *Data-Driven Vastu: <i>Graduates will utilize data-driven insights to optimize Vastu designs for better harmony, health, and well-being.</i> *Vastu and Interior Design: <i>Students will understand how Vastu principles can be incorporated into interior design and décor.</i> *Communication Skills: <i>Students will enhance communication skills for effective interaction with clients, architects, and builders.</i> *Vastu and Modern Architecture: <i>Graduates will explore the relevance of Vastu in</i>	programs enable the students to undertake a wide array of activities in diverse areas so that India can meet its future aspiration of positioning itself as “Vishwa Guru”, with particular emphasis on education, health, and the environment. These knowledge systems continue to inspire and shape various aspects of contemporary life and are a testament to the profound intellectual achievements of India's ancient civilizations. Preserving and promoting these invaluable traditions is essential not only for the preservation of cultural heritage but also for finding holistic solutions to the challenges faced by humanity in the modern world. Cultural Heritage: These programs will enable the students for better understanding and embracing cultural heritage is vital for national cohesion and fostering cross-cultural understanding, contributing to social harmony and mutual respect. In a rapidly evolving global landscape, India's ancient wisdom and cultural heritage offer valuable insights that can shape the nation's progress and empower its citizens to navigate complex challenges with innovative and holistic approaches. These programs serve as a custodian of the country's deep-rooted traditions, spiritual insights, and social practices, instilling a sense of pride and unity among citizens. In a world marked by rapid advancements and interconnectivity, the IKS course acts as a bridge between traditional wisdom and modern advancements. By integrating ancient knowledge with contemporary disciplines, students gain a unique advantage of a well-rounded education that
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	<i>contemporary architecture and design.</i> *Professional Ethics: Graduates will adhere to ethical standards when providing Vastu consultancy services. *Legal Compliance: Graduates will be aware of legal and regulatory aspects related to Vastu in architectural practices. *Project Management: Students will learn project management skills for Vastu assessment and design projects. *Professional Development: Graduates will stay updated with the latest developments and trends in the field of Vastu. *Foundational Yogic Knowledge: Graduates will develop a strong foundation in the philosophy, history, and principles of yoga. *Yogic Breathing Techniques: Students will explore various pranayama (breathing) techniques for improving respiratory health and emotional balance. *Meditation and Mindfulness: Students will gain proficiency in meditation and mindfulness practices to promote mental clarity and inner peace. *Yogic Asanas: Students will learn and master a wide range of yoga asanas (postures) for physical well-being and flexibility. *Anatomy and Physiology: Graduates will understand the anatomical and physiological aspects of the human body as they relate to yoga practice. *Yoga Philosophy: Graduates will study and contemplate yogic philosophy, including the Yoga Sutras and Bhagavad Gita. *Teaching Skills: Graduates will develop the skills necessary to effectively teach yoga to individuals and groups.	embraces both the past and the present. This interdisciplinary approach equips them with a holistic understanding of complex issues, facilitating well-informed decision-making and fostering creative thinking. Health, Wellness, Cultural and Yoga Education: The programmes offered by the School contain components related to Health, Wellness, Culture, Yoga and Meditation to promote an optimal state of physical, emotional, intellectual, social, spiritual well-being of a person. The programmes on Yoga, Meditation, Music and Cultural Heritage prepare the students physically and mentally for critical thinking, self-discipline, self-control, stress management to learn to handle oneself well in all life situations in true spirits of NEP 2020. AYUSH vision: The demand for traditional expertise, such as Ayurveda, yoga, and classical arts, is on the rise both within the country and internationally. These programs prepare individuals to preserve, modernize, and meet this growing demand. By nurturing experts in these fields, India's soft power is further enhanced and economic growth is bolstered through the promotion of traditional practices. Value Based Education: These programs contribute to value-based education, which is a strategic need of the Country, for development of humanistic, ethical, constitutional and universal human values of Truth (Satya), Righteous Conduct (Dharma), (Shanti), Non-Violence (Ahimsa), scientific, temper, social commitment
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	*Yoga for Special Populations: Graduates will learn how to adapt yoga practices for individuals with different abilities, ages, and health conditions. *Yogic Diet and Nutrition: Students will explore the principles of a yogic diet and nutrition for overall well-being. *Ayurveda Basics: Students will understand the basics of Ayurveda and its connection to yoga for holistic health. *Yoga Therapy: Graduates will familiarize themselves with yoga therapy techniques for addressing specific health issues. *Yogic Lifestyle: Graduates will embrace and practice a yogic lifestyle, incorporating principles of simplicity, self-discipline, and non-violence. *Cultural Sensitivity: Graduates will develop cultural sensitivity and respect for the origins and diversity of yoga traditions. *Research Skills: Graduates will cultivate research skills to explore and contribute to the field of yoga studies. *Ethical and Professional Conduct: Students will adhere to ethical standards and professional conduct in yoga teaching and practice. *Community Engagement: Students will engage in community yoga outreach and service to promote yoga's benefits. *Personal Transformation: Graduates will experience personal growth and transformation through the consistent practice of yoga. *Self-Reflection: Graduates will encourage self-reflection and self-awareness through yoga and meditation practices.	and spirit of service. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle cultural, socio-economic issues and contribute to the country's sustainable growth, resilience economic global leadership. <i>Economic Development of the Country</i> With the introduction of new-age programmes involving cutting edge technologies, skill enhancement courses, 21st century capabilities for enhanced employability, Good and academically bright national and international students will be attracted and retained in higher education sector in India and thus contributing to the economic development of the Country <i>Contribution to the SDG's of the UN</i> All the programs offered by the School of Indian Knowledge Systems course align with various Sustainable Development Goals, promoting cultural preservation, sustainable practices, well-being, social equity, and responsible citizenship. By integrating traditional wisdom with contemporary challenges, the programmes play a significant role in contributing to a more sustainable and inclusive world. The graduates will contribute to the UN's sustainable development goals of Good Health and Well-being (3), Quality Education (4), Gender Equality (5), Affordable and Clean Energy (7), Decent Work and Economic Growth (8), Sustainable
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		Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life on Land (15), and Partnerships for the Goals (17). By integrating Indian Knowledge Systems with the SDGs, the course not only contributes to national development but also prepares individuals to play a vital role in achieving the UN's sustainable development agenda on a global scale.
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Technology-Led Agriculture Department of Technology-led Agriculture • B.Sc/B.S (Hons) Agriculture: (Major) with Computer Applications and Artificial Intelligence in Agriculture (Minor)) • B.Sc/B.S (Hons) Agriculture Computer Applications and Artificial Intelligence with Research Department of Crop Production Technologies • M.Sc/M.S (Ag.) Artificial	<i>Agri-Tech Graduates capable of critical thinking for Doubling the Farmers Income with reduced cost of cultivation will have been prepared for serving Indian Agriculture</i> <i>*The students will become 21st Century holistic Technology-led Agricultural graduates having minors in the cutting-edge technologies namely Artificial Intelligence and Mechatronics with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>*The graduates will have acquired knowledge about the technological interventions using cutting-edge</i>	<i>NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals</i> <i>*The programmes enable an individual to study one or more specialized areas of interest at deep level in Tech-led Agriculture and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence.</i> <i>Strategic Needs of the Country</i> <i>India needs Technology-led Agriculture:</i> <i>The Indian agricultural scenario has been</i>

Intelligence and Computer Applications in Crop Production • Ph.D in Crop Production Technologies Department of Crop Protection Technologies • M.Sc/M.S (Ag.) Artificial Intelligence and Computer Applications in Crop Protection • Ph.D in Crop Protection Technologies Department of Agricultural Sciences and Farmers Welfare • Diploma in Agricultural Technology (Cereals and Pulses) • Diploma in Agricultural Technology (Millets) • B.Sc/B.S (Hons) Agriculture	<i>technologies in Agriculture to make the present day agriculture more productive and profitable to farmers</i> <i>*The students will have learnt the importance of Technology-Led Agriculture to meet the requirements of increased food production for increasing population with reduced cost of cultivation</i> <i>*With their basic knowledge on agronomical, soil science, plant physiological, entomological pathological aspects and engineering interventions in agricultural and horticultural crops, they will be taught where Artificial Intelligence, Machine Learning and Robotics can be applied for doubling the income to the Farmers with reduced dependency on Farm Labour.</i> <i>*With use of cutting-edge technologies, the crop period will also be reduced by few days which will have tremendous effect on increase in yields and reduction of harvest losses</i> <i>*The graduates will have capability to use Mechatronics (Drones) for agricultural applications reducing the labour requirements and cost of cultivation</i> <i>*The students will get familiarized with the application of Artificial Intelligence,</i>	witnessing a tremendous change during the recent areas. An entirely new set of issues such as global warming, natural resources depletion and degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. In other words, agriculture has become more challenged with balancing sustainability, productivity and profitability. In order to address these issues, a paradigm shift is called for in human resources development, research, technology generation and dissemination and commercialization. In this endeavour, the conventional research approaches need to be supplemented by the cutting edge technologies requiring multi-disciplinary and multi-institutional inputs and accordingly these programs are formulated. Intelligence in Agriculture: The programs have included courses of Artificial Intelligence and Computer applications in agriculture to provide real time solutions to pest and disease problems for their control on time and at reduced costs. Original research on non-destructive sensing, automation/robotics, Artificial Intelligence for smart agriculture-food systems, optical imaging for on-line grading of agricultural and horticultural produce, computer vision and Robotics, Uberisation of Farm Machinery like Harvesters for speciality crop management, phenotyping and AI in confined production systems, image processing and analysis. Market Intelligence aspects have
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	<i>Mechatronics and Data Science in detecting the plant diseases and insects at the appropriate time for effective control measures</i> <i>*The students will understand the basic concepts of engineering principles applied to agriculture to reduce the cost of cultivation</i> <i>*The knowledge of the Principles of Remote Sensing and GIS applications will enable the students to assess the crop irrigation water requirements and irrigation performance assessment for increasing water productivity</i> <i>*The students will have gained knowledge and skills for application of Machine Vision in agricultural mechanization including Uberisation of farm machinery and implements for the benefit of farmers</i> <i>*The graduates will have acquired knowledge to apply Artificial Intelligence in Irrigation Water Management for water productivity</i> <i>*IoT, Big Data and AI in agricultural food application</i> <i>*The students will be able to identify, categorise and predict droughts in changing climate situation through statistical and</i>	been included to enable them to impart training to farmers to grow crops based on the predicted prices of the crops at the end of the crop season and also the MSP given GoI for the crops to achieve higher profits. The programs will enable the students to acquire knowledge in the following areas. • Robotics and AI in Row Crop Agriculture and Vertical Agriculture • Application of Machine Vision in agricultural mechanization • Application of UAVs (Drones) for timely pest and disease control with less cost • AI controlled Soil Moisture Sensor based crop irrigation water scheduling • AI applications in irrigation and drainage water management • Machine Learning Approaches for Climate Smart Agriculture • Advancements in Robotic Crop and Fruit Harvesting Technologies • IoT and Big Data Analytics in Agricultural Food Processing applications Doubling the Farmers' Income: These unique programs in technology-led agriculture make the students to acquire knowledge and skills to interact with farmers which boosts farmers' ability to understand and adopt the scientific recommendations. Thus agricultural education enable them to make better use of available information to overcome solutions and limitations in enhancing production by meeting the finance and marketing challenges. Application of Mechatronics (UAVs or Drones) and Robotics, Operation of farm machinery and equipment
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	<i>machine learning approaches</i> <i>*The students will know the advancements in Robotic crop and fruit harvesting technologies</i> <i>*The students will be capable to apply Mechatronics (Drones), Robotics and AI in Row Crop Agriculture which may ultimately lead to development of "Agricultural Robots" in the coming years.</i> <i>*The students will have attained the capability to use Market Intelligence to predict the prices of agricultural products for the benefit of Farmers</i> <i>*With more emphasis on value added courses on practical crop production and skill enhancement courses in the curriculum, the students will be able to make agriculture as a business enterprise</i> <i>*They will be able to conduct independent collaborative research under multi-disciplinary environments and communicate research results to farmers, general public and through high quality peer reviewed publications.</i>	using AI , ML will contribute cost effective and timely farming operations for increased crop yields for the benefit of farmers. Farmers Welfare Orientation: So far in Indian agricultural higher education, welfare aspect has not been given due importance. Value added courses common to all UG courses (Section 15 (a) Academic Plan of the DPR) on Humanities, Rural Sociology, Anthropology, Community Development and Psychology included in these programs and multi-disciplinary courses will make the students understand the socio-economic aspects of farmers particularly those at the bottom of the socio-economic pyramid. The programs will enable the students to understand the farmers and their social behavior, society and the nation. are specially designed to enable the students to gain communications skills with farmers Natural Resources Management: These programs with applications from artificial intelligence, machine learning, mechatronics provide knowledge and skills in the areas of controlled environment in agriculture, smart systems for production agriculture, optimization of irrigation scheduling using a wide range of state-of-the-art technologies such as soil moisture sensors, infrared thermometers, leaf water potential sensors, evapotranspiration sensors, machine learning models for irrigation and drainage which contribute to efficient natural resources management. The programs make the graduates competent to deal with the soil and water conservation, reclamation of waste and saline affected lands and conjunctive use of surface and ground waters for achieving higher land and water productivity Environment and sustainability:
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		Knowledge on technological interventions into Agriculture (optimum use of fertilizers and pesticides using Drones, land and water management will make individuals better understand the land, water and environmental issues and problems and demonstrate knowledge and skills to provide technically feasible, environmentally friendly and economically viable intelligence solutions in societal and environmental contexts particularly for AI-based sensor monitored solutions to the problems in Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian context MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-agro-economic and societal issues and contribute to the country's sustainable growth, resilience, and techno-agro-economic global leadership. <i>Economic Development of the Country</i> With the introduction of new-age programmes in Agriculture involving cutting edge technologies, skill enhancement courses, 21st century capabilities for enhanced employability, Good and academically bright national and international students will be attracted and retained in higher education sector in India for research and innovations and thus contributing to the economic
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		development of the Country. This will also meet the objectives of ICAR's programme "Attracting and Retaining Rural Youth in Agriculture" (ARYA) for sustained agricultural development in the Country Contribution to SDGs of the UN The protection of natural resources, environment, global ecosystems and improvement in quality of human life have been made an integral part of the course curriculum of Technology-led Agriculture programmes. The recommendations of the Indian Council of Agricultural Research (ICAR)-Deans Committee are considered while formulating the course curriculum of these programs which contribute the listed Sustainable Development Goals (SDGs)-2015 of UN to be achieved by 2030 such as Zero Hunger; Quality Education; Decent Work and Economic Growth; Responsible Consumption and Production; Life on Land; Life under Water; by accomplishing higher productivity and profitability, Technology-led Agricultural Education, sustainable agriculture and living as was provided in the contents of course curriculum of these programs
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Energy Studies Department of Environment and Sustainable Development B.Sc/B.S (Hons)- Environment and Sustainable Development	<i>Renewable and Green Energy Promoters of the Nation and the World will be available</i> <i>*The students will become 21st Century graduates in Green Energy and Environment having minors in cutting-edge technologies with multi-disciplinary education reinforced by value</i>	<i>NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals</i> <i>*The programmes enable an individual to study one or more specialized areas of interest in Energy and Environment aspects at deep level and to develop character, ethical and constitutional</i>

• M.Tech/M.S - Environmental Science and Engineering Department of Environmental Health and Ecology • Diploma in Environmental Protection • M.Sc/M.S - Environmental Health Sciences and Management Department of Green Energy Engineering • B.Tech/B.S (Hons)- Green Energy and Environmental Engineering - (Major) Sustainable Development (Minor) • Ph.D in Green Energy and Environmental Engineering	<i>added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>*Graduates will be well-prepared to address complex energy and environmental challenges while promoting sustainable development practices in the Society</i> *Foundational Knowledge in Energy and Environmental Engineering: <i>Graduates will have a strong foundation in energy systems, environmental science, and sustainable engineering practices.</i> *Expertise in Sustainable Development: <i>Students will gain in-depth knowledge of sustainable development principles, including social, economic, and environmental sustainability.</i> *Design Sustainable Energy Systems: <i>The graduates will design and implement sustainable energy systems that reduce environmental impact and promote resource efficiency.</i> *Interdisciplinary Understanding: <i>Students will understand how energy and environmental engineering intersect with sustainable development, considering the global impact of engineering decisions.</i> *Problem-Solving Skills: <i>Graduates will develop strong problem-solving skills, enabling them to design and implement sustainable</i>	values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence. Strategic Needs of the Country fulfilled Green Energy in Economic Development: Future Economic development faces several challenges of the growing population, depletion of natural resources, environmental degradation and global climate change. The challenge of reconciling economic growth, social development, and preservation of the natural environment is widely recognized as the single greatest issue facing the global community. Sustainable development requires active and knowledgeable citizens, as well as caring and informed decision-makers capable of making the right choices regarding the complex and interrelated economic, social, and environmental issues that human society is currently facing. The programmes under the School of Energy Studies offers educational and research programmes in a multi-disciplinary and inter-disciplinary mode with interactions with Schools of Intelligence and Computing, Technology-led Agriculture, Health and Bio-Medical Sciences, Community Wellness and Life style Management which will address the issues of
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	<i>solutions for complex energy and environmental challenges.</i> *Environmental Impact Assessment: Graduates will be proficient in conducting environmental impact assessments and evaluating the sustainability of engineering projects. *Renewable Energy Technologies: Graduates will have knowledge of various renewable energy technologies, such as solar, wind, and hydroelectric, and their applications. *Energy Efficiency: Graduates will master the principles of energy efficiency and sustainable energy management in engineering. *Resource Management: Graduates will manage resources efficiently in engineering projects, including energy, water, and materials. *Climate Change Mitigation: Graduates will address climate change challenges through engineering solutions that reduce carbon emissions and environmental impact. *Sustainable Infrastructure Design: Graduates will be skilled in designing sustainable infrastructure, considering factors like resource efficiency and ecological impact. *Project Management: Graduates will learn project management skills to plan, execute, and deliver sustainable engineering projects effectively.	Green Energy and Environmental Sustainability for overall economic development of the country. Environment and Sustainability Challenges. India needs trained graduates and post graduates who will be able to tackle the environmental and green energy initiatives of public and private organizations, environmental consultancies, academic and research organisations, industries, distilleries, fertilizer plants, NGOs, pollution control boards, Industries and Firms and many others. The School of Energy Studies fosters curriculum, research, and collaborations of the highest standards, and with a global perspective, through faculty drawn from around the world. The school provides interdisciplinary environment and sustainable development education through innovative teaching, impact-driven research, and practice-based engagement. The aim is to allow students to widen their horizon and develop skills required for solving the complex environment and sustainability challenges of the present and future times. Application of Cutting Edge Technologies in Energy and Environment Fields: India needs applications of the cutting edge technologies in the fields of Medical and Health, Technology-led Agriculture, Green Energy, Environment and Sustainability, Lifestyle Management, Community Wellness. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-economic and societal issues and contribute to the country's sustainable
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	*Environmental Regulations: <i>Students will understand and adhere to environmental regulations and compliance standards in engineering practice.</i> *Environmental Remediation: <i>Graduates will develop skills in environmental remediation and pollution control techniques.</i> *Ethical and Social Responsibility: <i>Graduates will apply ethical principles and consider social responsibility in engineering decisions, promoting equitable and sustainable development.</i>	growth, resilience, and techno-economic global leadership. Environment and sustainability: The programs on Green Energy Engineering and Environmental Health and Sustainability with applications of AI, ML and DS will make individuals better understand the environmental issues and problems and demonstrate knowledge and skills to provide technically feasible, environmentally friendly and economically viable and socially acceptable intelligence solutions in societal and environmental contexts particularly for pollution related solutions to the problems in Environmental Pollution, Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian conditions. Agro-Energy: : Indian Agriculture presently faces a new set of issues such as global warming, natural resources depletion and degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. Animal Energy is replaced by Bio-Energy and other Renewable Energy Resources for applications in Agriculture. Efficient management of Agro-Energy is the need of the Day. The course curriculum of these programmes is equipped with all these requirements in Agriculture Sector Design/development of new-age solutions: By introducing these programmes in Energy studies, the MNR HERA creates ambience for multidisciplinary and interdisciplinary discussion,
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		debate to meet the specified needs with appropriate consideration for finding the socially acceptable solutions in the fields of environmental health, public health and safety, agriculture and the cultural heritage. <i>Economic Development of the Country</i> With the introduction of new-age programmes in Green Energy and Environmental Sustainability involving cutting edge technologies, skill enhancement courses, 21st century capabilities for enhanced employability, Good and academically bright national and international students will be attracted and retained in higher education sector in India for research and innovations and thus contributing to the economic development of the Country <i>Contribution to the SDG's of the UN</i> The protection of the environment is considered to be an important goal at all stages of education as envisaged by environmental education for making SDGs a success. It is responsible for conserving natural resources and protecting global ecosystems. These programmes will lead to improvement of the quality of human life without harming ecosystems and to adopt green energy and environmental practices that improve and cleanse our ecosystem. This involves analyzing the energy and resources in our day-to-day lives. The educational programmes offered by the Departments will not only develop individuals capable of meeting the challenges faced by the society in tackling the environmental issues, but also contribute to the UN's sustainable development goals of Clean Water and Sanitation (6), Affordable and Clean Energy (7), Sustainable
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		Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life Below Water (14), and Life on Land (15).
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Community Wellness and Lifestyle Management Department of Artificial Intelligence in Lifestyle Management - B.Sc/B.S (Hons) (Community Wellness and Lifestyle Management)- (Major) - Artificial Intelligence in Lifestyle Management (Minor) Department of Community Resources Management - M.Sc/M.S (Community Health and Wellness) Department of Wellness and Life Style Management - B.Sc/B.S (Community Wellness and Lifestyle Management) - Ph.D in Community Wellness and Lifestyle Management	<i>Skilled Health, Wellness and Lifestyle Managers will be in position for promoting Sustainable Living</i> <i>*The students will become 21st Century graduates capable of contributing to Community Wellness and positive Lifestyle Management having minors in cutting-edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC</i> <i>*The graduates will have acquired knowledge and skills for holistic well being with mental, physical, emotional and social wellness in the Community and the Society</i> <i>*They will have acquired knowledge and skills on Artificial Intelligence in Lifestyle Management involves the application of AI algorithms, data analysis, and machine learning to assist people in making informed decisions about their diet, fitness, sleep, stress management, and overall well-being.</i>	<i>NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals</i> <i>*The programmes enable an individual to study one or more specialized areas of interest in Community Wellness and Lifestyle Management at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence.</i> <i>Addressing the Strategic Needs of the Country</i> Community Wellness, Health and Lifestyle Management: India needs the younger generations with an optimal state of physical, mental, emotional, intellectual, social, spiritual and environmental well-being of persons and communities and thereby a healthy nation.. The

	<i>*They will be able to achieve best health practices personalized nutrition, fitness tracking, sleep optimization and stress management</i> <i>*They will be have knowledge and skills on Dietetics, Exercise Science and Community Health Assessment</i> <i>*They will have acquired knowledge on Yoga and Naturopathy for well being and will be able to communicate to others also on the Lifestyle, Health and Happiness</i> <i>*They will be able to take up activities on health emergency assessment and management for benefit of individuals and general public</i> <i>*With their knowledge and skills Data Science in community wellness, they will be able to do chronic communicable disease management</i> <i>*They will be able assess the Fitness and accordingly go for Prescription</i> <i>*They will be able to participate in all governmental national health programmes on Health promotion education</i> <i>*The graduates can take up studies on Health Diagnostics and prescribe accordingly for the best of Community Wellness</i> <i>*The multi-disciplinary approach in the curriculum enables them integrate knowledge from diverse fields such as public health, psychology, nutrition, sociology, and</i>	programmes on community wellness and lifestyle management will contribute to improvement of physical and mental fitness and effective life style management and enhanced ability for stress management to learn to handle oneself well in all walks of life situations. The programmes equip students with the knowledge and skills to become wellness advocates and create positive impacts in their communities. By emphasizing preventive healthcare, nutrition, fitness, stress management, and community engagement, the school seeks to empower individuals to lead healthier lives and inspire wellness initiatives at the grassroots level. Through a comprehensive curriculum and practical experiences, the school aspires to cultivate a generation of professionals dedicated to improving community health and quality of life. Needs in the backdrop of COVID 19: Improper lifestyle management and food habits have been found to be some of the important factors that led to the COVID 19 pandemic that has taken several lives during the last three years. The COVID-19 experiences have taught us the importance of Wellness and Lifestyle Management, Foods and Nutrition, Yoga and Meditation . As the Ministry of Health and Family Welfare, Government of India gets ready to give a facelift to the entire health care services by encouraging new institutions to get started, the MNR-HERA proposed DTBU extends its support by starting unique courses under the School of Community Wellness and Lifestyle Management so that skilled professionals in community wellness and lifestyle management can be generated to fulfill the present need of India in
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	<i>entrepreneurship.</i> <i>* The graduates will be equipped to address the public health challenges and life-style related issues at a community level.</i> <i>*By fostering multidisciplinary skills and knowledge, the course curriculum enables the professionals to design and implement effective wellness programs tailored to diverse populations</i> <i>*They will have attained capability to assess the requirements and prescribe personalized life style medicine</i> <i>*They will have attained all capabilities to promote public health and nutrition activities among the communities</i>	general and the state of Telangana in particular. The School is one of the few institutions in the state exclusively dedicated to the education and training in community wellness and lifestyle management. Community Engagement and Service: The programs offered by the School of Community Wellness and Lifestyle Management would expose students to socio-health-economic issues in the Society so that the theoretical earnings can be supplemented by the actual life experiences to generate solutions to real life problems. In a rapidly evolving global landscape, healthcare is a critical component of a nation's strategic infrastructure. These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. The programs align with the 21st-century capacities required by professionals with capabilities across various disciplines. Need for Professionals in Community Wellness and Lifestyle Management involving Cutting Edge Technologies: India needs professionals in community wellness and Lifestyle Management with knowledge and skills in cutting edge technologies that are gaining prominence today globally like Artificial Intelligence, Data Science, Mechatronics and Machine Learning for speedy and accurate solutions. The programmes have multi-disciplinary courses in association with the proposed Schools of Intelligence and Computing and Indian Knowledge systems and the existing Medical College and Hospital in one campus. Accordingly,
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		MNR-HERA proposed DTBU is poised to prepare professionals in these areas by offering these programs equipped with 21-century capacities to tackle Community Wellness and Lifestyle Management Issues and thereby contribute to the community health and thereby country's sustainable growth, resilience and healthcare-economic global leadership. Artificial Intelligence in Lifestyle Management: The programmes involve the application of AI algorithms, data analysis, and machine learning to assist people in making informed decisions about their diet, fitness, sleep, stress management, and overall well-being. Personalized Nutrition: AI can analyze an individual's dietary habits, preferences, and health goals to provide personalized meal plans and nutritional advice. It takes into account factors such as age, weight, activity level, and health conditions to suggest suitable food choices. Fitness Tracking: AI-powered fitness apps and wearables can monitor physical activity, heart rate, and other biometric data. These devices can analyze the data to offer personalized workout routines and training recommendations to help users achieve their fitness objectives. Sleep Optimization: AI-based sleep tracking devices can analyze sleep patterns and provide insights on how to improve sleep quality. They may offer suggestions on bedtime routines, sleep environments, and relaxation techniques. Stress Management: AI can help users manage stress and anxiety by providing meditation exercises, breathing techniques, or recommending activities to reduce stress levels based on individual responses and feedback. Health Monitoring: AI can process data from
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		various health sensors and wearables to detect early signs of health issues. It can alert users and healthcare professionals to potential problems, enabling timely interventions. Mental Health Support: AI-powered chatbots or virtual assistants can offer mental health support by providing a listening ear, coping strategies, and referrals to professional help when needed. Habit Formation: AI can help users establish healthy habits by providing reminders, tracking progress, and offering rewards for consistent behavior. <i>Economic Development of the Country</i> Healthy People make Healthy India. MNR-HERA's vision to uplift the living conditions of the general public, especially the underprivileged, aligns well with the inclusive nature of these programmes emphasizing social welfare. With the introduction of new-age programmes in Community Wellness and Lifestyle Management involving cutting edge technologies, skill enhancement courses, 21st century capabilities for enhanced employability, Good and academically bright national and international students will be attracted, Knowledge and Skills imparted and retained in Wellness and Lifestyle Management sector in India for research and innovations and thus contributing to the economic development of the Country. <i>Addressing the Sustainable Development Goals</i> The Community Wellness and Lifestyle Management programmes serve as a catalyst for progress towards achieving multiple UN Sustainable Development Goals. By producing
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		skilled professionals capable of promoting health, well-being, and sustainable practices within communities, the course contributes significantly to the global agenda for a healthier, more equitable, and sustainable world. The educational programs offered by the School will contribute to the UN's sustainable development goals of Zero Hunger (2), Good Health and Well-Being (3), Industry, Innovation, and Infrastructure (9), Reduced Inequalities (10), Responsible Consumption and Production (12), and Partnerships for the Goals (17).
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Allied Health Sciences Department of Health Care and Diagnostic Sciences • Diploma in Medical Lab Technology • B.Sc/B.S (Hons) Anesthesiology & OTT • B.Sc/B.S (Hons) Radiology & Image Tech • B.Sc/B.S (Hons) Medical Laboratory Tech • B.Sc/B.S (Hons) Optometry • B.Sc/B.S (Hons) Emergency Medical Tech • B.Sc/B.S (Hons) Respiratory Therapy Tech	State-of-the-Art Health Diagnostic Technicians <i>*Based on the experiences during the COVID 19 pandemic in the last three years, the programmes in Medical Laboratory Technology, Anesthesiology and OTT, Radiology and Imaging Technology, Optometry, Emergency Medical Laboratory Technology and Respiratory Therapy Technology have been so designed and formulated as to enable the graduates in all these allied health sciences to conduct the Diagnostics and Radiology and Imaging using AI, ML and Mechatronics ensuring accurate diagnosis and patient care expeditiously.</i> <i>*The students will become 21st Century graduates in the allied health sciences capable of contributing to accurate diagnostics and radiology and imaging aspects having minors in cutting edge technologies with applications in health care sector and with multi-disciplinary education reinforced by value added, ability and</i>	NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals <i>*The relevance of these programmes in fulfilling the objectives of NEP 2020 is evident through their comprehensive and interdisciplinary approach to healthcare education. These courses align with NEP's vision of promoting multidisciplinary learning, as they integrate various subjects like anatomy, physiology, diagnostics, and therapeutic interventions. By emphasizing practical training and experiential learning, the courses bridge the gap between theory and practice, preparing students to meet the real-world challenges of the healthcare industry. The inclusion of courses on medical ethics and professional values ensures that graduates become socially responsible and ethical healthcare practitioners. With their interface with other professional schools, these programs involve inter-disciplinary thinking, discussion, debate, research and innovation across the disciplines for</i>

Department of Physiotherapy and Rehabilitation

- Bachelor of Physiotherapy (BPT)
- Master of Physiotherapy (MPT) in Orthopedics
- Master of Physiotherapy (MPT) in Neurology
- Master of Physiotherapy (MPT) in Cardio Vascular & Pulmonary

skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC

***Medical Laboratory Technology:** Graduates will demonstrate proficiency in a wide range of medical laboratory techniques used in clinical diagnostics and will have ability to take up the following tests on their own.*

**Sample Collection*

**Laboratory Safety*

**Instrumentation Skills*

**Quality Assurance*

**Clinical Chemistry*

**Medical Microbiology*

**Hematology*

**Immunology and Serology*

**Clinical Microscopy*

**Molecular Diagnostics*

**Blood Banking and Transfusion Medicine.*

**Cytology and Histology*

**Clinical Data Analysis*

**Ethical Practice*

**Infection Control*

**Laboratory Management*

***Anesthesiology and OTT:** Graduates will be proficient in various anesthesia techniques, including general, regional, and local anesthesia.*

**Medical Terminology*

**Patient Assessment*

**Operating Room Setup*

**Equipment Management*

**Anesthesia Administration*

**Surgical Assistance*

**Patient Safety*

**Infection Control*

the students in the true spirits of NEP 2020.

*The programmes enable an individual to study one or more specialized areas of interest in allied health sciences at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence.

Addressing the Strategic Needs of the Country

Needs in the backdrop of COVID 19: During the last three years, the COVID-19 experiences have taught us the importance of health-care professionals, who have acted as saviors for the entire mankind globally. In fact, India has been the savior for many countries including developed nations by sending the vaccines and medicines. Medicine and Healthcare is one of the most noble professions and a booming career, because the demand for doctors or medical practitioners is never going to decrease. Medical Health Sector needs state-of-the-art courses in Allied Health Sciences. As the Ministry of Health and Family Welfare, Government of India gets ready to give a facelift to the entire allied health services by encouraging institutions to get started, the MNR-HERA proposed DTBU extends its excellence by starting courses under the School of Allied Health

	*Pharmacology *Emergency Response *Pain Management *Patient Monitoring *Patient Advocacy Radiology and Image Technology: Graduates will have a strong foundation in radiology principles, techniques, and equipment. *Radiation Safety *Medical Imaging Modalities *Image Acquisition and Processing *Radiographic Anatomy *Radiation Biology *Quality Control *Radiation Dose Management *Patient Positioning *Patient Care *Medical Ethics: *Radiologic Pathology *Radiology Informatics *Image Interpretation *Radiation Therapy Optometry: Graduates will have a deep understanding of the anatomy and physiology of the eye and visual system for providing comprehensive eye services and improving the quality of life for individuals with visual challenges *Refractive Errors *Ocular Examination Skills *Contact Lens Fitting *Binocular Vision and Visual Perception *Low Vision Rehabilitation *Pediatric Optometry *Geriatric Optometry *Ocular Disease Diagnosis: *Advanced Diagnostic Technology	Sciences so that skilled healthcare workforce can be generated to fulfill the present need of India in general and the state of Telangana in particular. The School is one of the few institutions in the state exclusively dedicated to the education of allied health professionals. These opportunities and challenges make these programs an interesting career option also by the students. Strategic Need for India's Healthcare Infrastructure: In a rapidly evolving global landscape, healthcare is a critical component of a nation's strategic infrastructure. The allied health sciences programs address the increasing demand for well-trained and specialized healthcare professionals, offering a diverse range of disciplines that complement and support medical practitioners. As the country faces complex health challenges, These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. The programs align with the 21st-century capacities required by professionals across various disciplines. By emphasizing practical training, research, technology integration, and ethical awareness, the AHS curriculum cultivates critical thinking, problem-solving, adaptability, and innovation – skills that are highly sought after in the modern workforce. AHS graduates are equipped to tackle complex healthcare issues and contribute to the development and implementation of evidence-based solutions. These programs are not only vital for meeting the strategic healthcare needs of the nation but also instrumental in developing individuals who possess the essential capacities to thrive in the 21st century across various professional domains.
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	<i>*Vision Therapy</i> <i>*Community Eye Health</i> <i>*Patient Counseling</i> <i>*Prescription Writing</i> <i>*Low Vision Device Selection</i> <i>*Ethical Practice</i> <i>*Continuing Education</i> Emergency Medical Laboratory Technologies: <i>Graduates will diagnose and manage a wide range of medical emergencies, such as heart attacks, strokes, and diabetic crises ensuring effective care for individuals in critical situations</i> <i>*Emergency Medical Response</i> <i>*Patient Assessment</i> <i>*Basic Life Support (BLS)</i> <i>*Advanced Life Support (ALS)</i> <i>*Trauma Care</i> <i>*Prehospital Pharmacology</i> <i>*Pediatric and Geriatric Care</i> <i>*Obstetric Emergencies</i> <i>*Mass Casualty Incidents</i> <i>*Patient Advocacy</i> Respiratory Therapy Technology: <i>The graduates will be able to provide essential care for individuals with respiratory challenges and contributing to improved respiratory health outcomes</i> <i>*Respiratory Anatomy and Physiology</i> <i>*Diagnostic Procedures</i> <i>*Airway Management</i> <i>*Mechanical Ventilation: Graduates will set up</i> <i>*Oxygen Therapy</i> <i>*Patient Assessment</i> <i>*Neonatal and Pediatric Care</i> <i>*Cardiopulmonary Rehabilitation</i> <i>*Critical Care Support</i>	Relevance to the patient care: All the programs under the departments deal with medical diagnostic techniques (e.g. blood analysis, image technology, histopathology, pathological analysis, radiography) that are used in the medical field and are very relevant for patient care. The role of allied health workers in providing effective care has become critical with diagnosis based on technology. Some Bureaus of Statistics worldwide estimate that, relative to most other professions, healthcare-related careers are out for a higher growth rate. Over the last decade, advancements in technology have produced a dramatic change in the general viewpoint of the healthcare industry. The positions of paramedical practitioners and technologists are no longer considered to be the prerogative of physicians and nurses with greater significance. In addition, a greater range of opportunities are now available in higher-level studies and study areas related to Allied health services. Need for Professionals in Health Care Diagnostics with training on Cutting Edge Technologies: India needs professionals in Radiology and Image Technology, Medical Laboratory Technology, Optometry, Emergence Medical Technology, Respiratory Medical Technology and Physiotherapy and Rehabilitation of individuals with knowledge and skills cutting edge technologies that are gaining prominence today globally like Artificial Intelligence, Data Science. Mechatronics and Machine Learning for speedy and accurate diagnostics with much less costs. MNR-HERA DTBU is poised to prepare professionals in these areas by offering these programs equipped with 21-century capacities to
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	*Emergency Response *Asthma and Allergy Management *Pulmonary Disease Management *Respiratory Medications *Ethical Practices *Patient Education *Continuing Education: <i>Physiotherapy and Rehabilitation:</i> <i>The students will Bbecome 21st Century graduates in Physiotherapy and Rehabilitation having minors in cutting edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC helping individuals of all ages and backgrounds achieve improved physical function and overall well-being</i> <i>Anatomy and Physiology:</i> <i>Graduates will have a comprehensive understanding of human anatomy and physiology, with a focus on the musculoskeletal and neuromuscular systems.</i> <i>Patient Assessment Clinical Diagnosis Treatment Planning. Therapeutic Interventions Musculoskeletal Rehabilitation Neurological Rehabilitation Cardiopulmonary Rehabilitation Pediatric Physiotherapy Geriatric Physiotherapy Pain Management Sports Medicine Orthopedic Manual Therapy Neurorehabilitation Techniques Cardiovascular and Pulmonary Rehabilitation Patient Education.</i>	tackle complex techno-economic and societal issues and contribute to the country's sustainable growth, resilience and healthcare-economic global leadership. <i>Economic Development of the Country</i> In a rapidly evolving global landscape, healthcare is a critical component of India's strategic infrastructure. The allied health sciences programs address the increasing demand for well-trained and specialized healthcare professionals, offering a diverse range of disciplines that complement and support medical practitioners. As the country faces complex health challenges, These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. MNR-HERA's vision to uplift the living conditions of the general public, especially the underprivileged, aligns well with the inclusive nature of these programmes emphasizing social welfare through education and health. With the introduction of new-age programmes in Health Diagnostics involving cutting edge technologies, skill enhancement courses, 21st century capabilities for enhanced employability, Good and academically bright national and international students will be attracted, imparted Knowledge and Skills and retained in Health care sector in India for research and innovations and thus contributing to the economic development of the Country. <i>Addressing the Sustainable Development Goals of the UN</i> The programs offered by the Departments of Health Care and Diagnostics and Physiotherapy and Rehabilitation play a vital role in addressing
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	<i>Ethical Practice</i> <i>Continuing Education</i> <i>PG in Orthopedic Physiotherapy: Post-Graduates will have an in-depth knowledge of musculoskeletal anatomy, including bones, joints, muscles, and ligaments.</i> <i>Orthopedic Assessment</i> <i>Clinical Diagnosis</i> <i>Evidence-Based Practice</i> <i>Manual Therapy Skills</i> <i>Exercise Prescription</i> <i>Post-Operative Rehabilitation</i> <i>Sports Injury Management</i> <i>Orthotic and Prosthetic Management</i> <i>Pain Management</i> <i>Gait Analysis</i> <i>Orthopedic Imaging Interpretation</i> <i>Geriatric Orthopedics</i> <i>Pediatric Orthopedics</i> <i>Interdisciplinary Collaboration</i> <i>Clinical Leadership</i> <i>PG in Neuro Rehabilitation</i> <i>Neurological Assessment</i> <i>Clinical Diagnosis</i> <i>Neurological Imaging Interpretation</i> <i>Neurorehabilitation Techniques</i> <i>Gait and Balance Training</i> <i>Functional Independence</i> <i>Cognitive Rehabilitation</i> <i>Stroke Rehabilitation</i> <i>Spinal Cord Injury Management</i> <i>Pediatric Neurology</i> <i>Geriatric Neurology</i> <i>Neuromuscular Disorders.</i> <i>Patient and Family Education</i> <i>Cardiovascular Pulmonary Rehabilitation:</i> <i>The post-graduates will be able to serve</i>	several UN Sustainable Development Goals, making it a key contributor to global efforts in achieving a more equitable, healthy, and sustainable living. The programs will contribute to the UN's sustainable development goals of Good Health and Well-Being (3), Quality Education (4), Gender Equality (5), Clean Water and Sanitation (6), Decent Work and Economic Growth (8), Reduced Inequalities (10), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), and Climate Action (13).
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	individuals with heart and lung conditions achieve improved cardiovascular and pulmonary health and overall well-being. Cardiovascular and Pulmonary Anatomy Cardiopulmonary Assessment Clinical Diagnosis Cardiopulmonary Imaging Interpretation Exercise Prescription Cardiac Rehabilitation Pulmonary Rehabilitation Respiratory Care Oxygen Therapy Chest Physiotherapy Neonatal and Pediatric Cardiopulmonary Geriatric Cardiopulmonary Nutrition Counseling	
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Management and Law Department of Business Law and Corporate Governance - Bachelor of Business Management and Bachelor of Laws (BBM LLB) - Bachelor of Arts and Bachelor of Laws (BA LLB) - LLM - Ph.D in Corporate Governance Department of Public Policy and Business Administration	New-Age Management and Law Graduates <i>*The students will become 21st Century graduates in Business Management, Arts and Law having minors in cutting edge technologies with multi-disciplinary education reinforced by value added, ability and skill enhancement courses as provided in the course curriculum of these programs as envisaged in NEP 2020 and the CCFUP 2022 of the UGC and will be proficient in the following aspects.</i> Foundational Business Knowledge: Graduates will have a strong foundation in key business disciplines, including marketing, finance, management, accounting, economics, and operations management. Critical Thinking and Problem-Solving: Graduates will develop critical thinking skills	NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals <i>*The programmes in management and law enable an individual to study one or more specialized areas of interest at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence.</i>

- Bachelor of Business Administration (BBA)
- Master of Business Administration (MBA)
- Bachelor of Business Administration with Honours - BBA (Hons)
- Ph.D in Business Administration

Department of Service Sector Management

- Diploma in Healthcare Tourism and Management
- Diploma in Event Management
- Ph.D in Service Sector Management

and the ability to analyze business challenges, formulate solutions, and make informed decisions.

Effective Communication: *Students will be proficient in written and oral communication, enabling them to convey complex business ideas clearly and persuasively.*

Ethical and Social Responsibility: *Students will understand ethical principles and social responsibility in business contexts, making ethical decisions and considering the impact of business activities on society.*

Global Perspective: *Graduates will have an awareness of global business trends, cultural differences, and the ability to navigate the complexities of the global business environment.*

Leadership and Teamwork: *Students will demonstrate leadership qualities and effective teamwork skills, facilitating collaboration in diverse business settings.*

Entrepreneurial Mindset: *Graduates will develop an entrepreneurial mindset, fostering innovation, creativity, and an understanding of entrepreneurship and business startups.*

Data Analysis and Technology Skills: *Graduates will possess data analysis and technology skills relevant to modern business, including proficiency in using business software and data-driven decision-making.*

Business Ethics and Corporate Governance: *Students will understand the importance of business ethics, corporate governance, and responsible business practice*

Business Management and Law: *Students of this flagship programme will acquire a comprehensive understanding of business management concepts, including marketing,*

Addressing the Strategic Needs of the Country

Changing Legal Landscape: The programmes promote adaptability to the changing legal landscape and aim to address the strategic needs of the country and international trade and commerce. They achieve this through an interdisciplinary approach, technological proficiency, critical thinking, and equipping individuals with the knowledge, skills, and capacities required to thrive in the complex and rapidly evolving legal landscape.

1. Interdisciplinary Approach between management and law: By involving the integrating principles, concepts and methods to address complex problems and challenges of integration with agriculture, technology, pharmacy schools.

2. Practical skills training: The courses aims to prepare the students for the real world challenges through clinical programs, simulations, negotiation and mediation

3. Specialization options: As per the NEP 2020, the courses are designed for Joint Degree Programs with electives, extra-curricular interventions through clinics and clubs among all disciplines and courses.

4. Experiential learning: The programs aimed to emphasize hands-on, practical experiences and real world applications through incubation and simulations initiatives

5. Professional development: The program focuses on enhancing the knowledge skills and competencies of aspiring management law professionals in their evolving domains.

	<i>finance, operations, and strategic management.</i> Legal Principles: Graduates will have a strong foundation in legal principles, including contract law, tort law, constitutional law, and criminal law. Legal Writing: Graduates will master the art of legal writing, including drafting contracts, agreements, and legal opinions. Business Ethics: Students will apply ethical principles to business decisions, considering the impact on stakeholders and society. Analytical Skills: Students will cultivate critical thinking and analytical skills to assess complex legal and business issues. International Law: Students will gain knowledge of international law and its relevance in a globalized business environment. Problem-Solving: Graduates will enhance problem-solving abilities by applying legal and business knowledge to practical scenarios. Financial Management: Students will apply financial management principles for effective resource allocation and financial sustainability. Strategic Business Planning: Graduates will develop strategic business plans and marketing strategies to achieve organizational objectives. Legal Research: Graduates will develop strong legal research skills to access and analyze legal sources, statutes, and case law. Oral Advocacy: Students will hone oral advocacy skills for effective courtroom representation and negotiation. Business Communication: Students will enhance business communication skills for clear and persuasive presentations and negotiations. Legal Ethics: Graduates will understand and adhere to legal ethics and professional conduct	6. Technological Competence: The program encapsulates virtual learning environment through online, legal research, e-discovery, digital forensics, data skills, analytics, and artificial intelligence. 6. The New Age Management Law Schools are committed to meeting the strategic needs of the country and developing individuals with 21st-century skills across various disciplines. The ability to address the evolving challenges and demands of the modern world is a key factor in achieving this goal. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex technomedico-legal and societal issues and contribute to the country's sustainable growth, resilience and global leadership. Addressing the Societal Needs All the programmes of the school aim to foster innovation, technological integration, experiential learning, and adaptability among students. This will enable them to effectively navigate complex and rapidly changing business and legal landscapes in the Society. These programmes of the New Age School of Management and Law Schol will bridge the gap between traditional education and the demands of the modern world Economic Development of the Country Good and academically bright national and international students will be attracted to the new-age programmes in Management and Law involving cutting edge technologies of artificial
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	<i>standards in legal practice.</i> Corporate Governance: Students will understand corporate governance principles and their significance in business management. Company Law: Graduates will master company law concepts related to business incorporation, governance, and compliance. Financial Regulations: Graduates will analyze financial regulations and their impact on business operations and decision-making. Consumer Protection Law: Students will understand consumer protection laws and their implications for business practices. Labor Relations: Graduates will explore employment and labor laws to address workplace issues and labor disputes. Human Resource Management: Students will apply human resource management principles to foster a productive and compliant work environment. Legal Advocacy: Graduates will advocate effectively in legal proceedings, including litigation and alternative dispute resolution. Legal Counseling: Graduates will provide legal counsel and advice to individuals, businesses, or organizations. Career Advancement: Students will prepare for career advancement in legal practice, corporate leadership, or entrepreneurial ventures. Community Engagement: Graduates will engage in community service and pro bono legal work to promote access to justice and social responsibility.	intelligence, IoT and Data Science and their applications in almost all fields. The integration and application of Management and Law with other disciplines of Medicine, Health, Engineering and Technology and Agriculture, Social Sciences and Humanities will contribute to societal needs. Additionally, the value added and skill enhancement courses for achieving 21st century capabilities are also involved in the programmes for enhancing the employability of the graduates. After having been imparted knowledge and skills and retained in Academia, Business, Management and Industry in India for further advancements, the graduates will be contributing to the overall economic development of the Country Contribution to the SDG's of the UN The programmes offered by School of Management and Law are closely aligned with the United Nations' Sustainable Development Goals (SDGs) in multiple ways. These courses also fulfill the objectives of NEP 2020, MHRD, and the Government of India. The school is dedicated to contributing to the promotion of effective, accountable, high-quality, fair, and inclusive institutions that provide equal employment opportunities. It does this by equipping future managers with the knowledge and skills needed to navigate legal frameworks, regulations, and ethical considerations when making decisions. This aligns with Goals Gender Equality (5), Decent work and economic growth (8), Industry, Innovation and Infrastructure (9), Responsible Consumption and Production (12), and Peace, Justice and Strong Institutions(16) of the SDGs.
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Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
School of Health and Biomedical Sciences Department of Advanced Bioscience and Technology - B.Sc/B.S (Hons) Bio-Technology Entrepreneurship and Innovation - Ph.D in Biomedical Sciences Department of Healthcare Management - Diploma in Diagnostics and Hospital Management Department of Medical Biotechnology - B.Sc/B.S (Hons)- Medical Biotechnology - M.Sc/M.S- Medical Biotechnology Department of Pharmaceutical Sciences - Diploma in Protein Modeling and Drug Designing Department of Translational Research and Diagnostics - B.Sc/B.S (Hons) - Bio Medical Devices and Diagnostics - M.Sc/ M.S - Bio Medical Devices and Diagnostics	Health and Bio-Medical Experts will be available for Entrepreneurship and Innovations in the following aspects Advanced Biological Knowledge: Graduates will demonstrate a comprehensive understanding of advanced biological concepts, including genetics, cellular biology, and molecular biology. Medical Device Development: Students will gain knowledge of the process of developing medical devices, from concept to commercialization. Regulatory Compliance: Graduates will understand the regulatory requirements for medical devices and diagnostics and ensure compliance with relevant laws and standards. Clinical Trial Management: Graduates will learn the principles of conducting clinical trials for medical devices and diagnostics. Quality Control and Assurance: Graduates will implement quality control and assurance measures to ensure the safety and efficacy of medical devices.	NEP2020 Objectives will have been met: Holistic & Multi-Disciplinary Individuals *The relevance of these programmes in fulfilling the objectives of NEP 2020 is evident through their comprehensive and interdisciplinary approach to health and bio-medical education. These courses align with NEP's vision of promoting multidisciplinary learning, as they integrate various subjects like medical bio-technology and bio-medical devices. By emphasizing practical training and experiential learning, the courses bridge the gap between theory and practice, preparing students to meet the real-world challenges of the healthcare industry. The inclusion of courses on medical ethics and professional values ensures that graduates become socially responsible and ethical healthcare practitioners. With their interface with other professional schools, these programs involve inter-disciplinary thinking, discussion, debate, research and innovation across the disciplines for the students in the true spirits of NEP 2020. *The programmes enable an individual to study one or more specialized areas of interest in allied health sciences at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. Due to the Choice Based Credit System of the CCFUP 2022 of UGC

	Biomedical Research Skills: Students will acquire proficiency in laboratory techniques, experimental design, and data analysis for biomedical research. Medical Ethics: Graduates will understand and apply ethical principles in biomedical research and clinical settings. Disease Mechanisms: Graduates will analyze the molecular and cellular mechanisms underlying various diseases, including cancer, cardiovascular diseases, and infectious diseases. Diagnostic Techniques: Students will be skilled in using advanced diagnostic techniques such as PCR, ELISA, and next-generation sequencing. Immunology: Graduates will have a strong foundation in immunology, including immune system function and the development of immunotherapies. Advanced Microbiology: Students will specialize in microbiology, including the study of pathogenic microorganisms and antimicrobial strategies. Bioinformatics: Graduates will utilize bioinformatics tools to analyze large-scale biological data and conduct genomic	for selecting Multi-Disciplinary, Value-Added, Ability and Skill Enhancement courses as given in Section 15 (a): Academic Plan of the DPR, the graduates will have enhanced employability and economic independence. The programmes offered by the School of Health and Biomedical Sciences align with the overarching objectives of NEP 2020. They promote multidisciplinary education, research, and innovation, skill development, entrepreneurship, technology integration, and address healthcare challenges to improve public health. Through a multidisciplinary approach, these courses encourage students to connect with different disciplines, gain a broader perspective, and develop the skills needed to solve societal challenges. Continuous curriculum reviews ensure that the programs evolve to meet the changing needs of students and society at large. Additionally, they emphasize the importance of life skills alongside academic knowledge, preparing students for personal and professional challenges. Addressing the Strategic Needs of the Country The programmes under the School of Health and Bio-Medical Sciences shall meet the following current needs of India in general and the state of Telangana in particular. Healthcare Infrastructure Enhancement: The programmes offered by the School enable the students to acquire knowledge and skills to meet the challenges in healthcare delivery, including accessibility, affordability, and quality faced by
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	research. Biomedical Imaging: Students will understand and interpret biomedical imaging modalities such as MRI, CT scans, and PET scans. Biomedical Instrumentation: Graduates will be proficient in the use and maintenance of biomedical instruments used in diagnostics and patient care. Medical Device Innovation: Students will explore innovative approaches to solving healthcare challenges through the development of new medical devices. Biostatistics: Graduates will apply statistical analysis to evaluate the effectiveness and safety of medical devices and diagnostic tests. Market Analysis: Graduates will assess market trends and analyze the commercial viability of medical devices and diagnostics. Healthcare Entrepreneurship: Graduates will understand the entrepreneurial aspects of bringing medical devices and diagnostics to the market. Cutting-edge Technologies: The programs promote holistic learning, equipping students with the technical skills necessary	the Country and provide solutions. This necessitates substantial investments in healthcare infrastructure, such as hospitals, clinics, and telemedicine facilities. Courses offered by the School of Health and Biomedical Sciences can train young professionals to design, implement, and manage healthcare systems that are efficient, patient-centric, and cost-effective, thereby addressing the critical need for improved healthcare infrastructure. Young professionals play a pivotal role in improving disease diagnosis, developing innovative treatments, and enhancing healthcare delivery systems. These programmes are crucial in addressing public health crises and ensuring the overall well-being of the population. Addressing Emerging Challenges: The healthcare landscape is constantly evolving, presenting new challenges such as pandemics like COVID 19, antimicrobial resistance, and environmental health issues. These courses can prepare professionals to effectively adapt to and address these emerging challenges. Disease Prevention and Control: India grapples with various communicable and non-communicable diseases. Graduates from these courses can contribute to disease surveillance, prevention, and control efforts by conducting research, developing vaccines, and implementing public health programs aimed at reducing the burden of diseases. Pharmaceutical Research: India is known as the "Pharmacy of the World" due to its significant role in pharmaceutical manufacturing and research. Professionals with advanced bioscience skills are essential for drug discovery, development, and quality control. Biomedical Research and Innovation: The field
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	<i>to contribute to scientific advancements and address complex real-world challenges and societal needs. They incorporate the use of technologies such as artificial intelligence, machine learning, and data science, preparing students to navigate the digital era.</i>	of biomedical sciences is at the forefront of scientific innovation. Training in this area can produce researchers and innovators capable of developing new medical technologies, pharmaceuticals, and diagnostic tools, thus contributing to India's self-reliance in healthcare and reducing its dependence on imports. Sustainable Agriculture: Agriculture is a cornerstone of India's economy. Advanced bioscience and technology in agriculture can equip professionals to address agricultural challenges, including crop diseases, climate change, and food security. By developing innovative agricultural technologies, graduates can contribute to sustainable agricultural practices. Biotechnology Industry: India has a rapidly expanding biotechnology industry, with a focus on areas like pharmaceuticals, healthcare, agriculture, and environmental sciences. Graduates with expertise in advanced bioscience and technology are in demand to drive research, development, and innovation in these sectors. Public Health Initiatives: India faces ongoing public health challenges, including infectious diseases, maternal and child health, and non-communicable diseases. Healthcare managers can play a critical role in planning and implementing public health programs, immunization campaigns, and health education initiatives. The proposed DTBU program at MNR-HERA aims to enhance its excellence by introducing courses under the School of Health and Biomedical Sciences. This initiative aims to leverage Advanced Bioscience Technology to meet the current needs of India in general and the
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		state of Telangana in particular. <i>Economic Development of the Country</i> The programmes will have enabled the graduates to effectively address the societal challenges such as access for all the citizens to clean drinking water, sanitation, quality education in health care, improved transportation, air quality, energy and infrastructure. These programmes will have developed well-trained and specialized healthcare professionals in health and bio-medical sciences. As the country faces complex health challenges, These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. MNR-HERA's vision to uplift the living conditions of the general public, especially the underprivileged, aligns well with the inclusive nature of these programmes emphasizing social welfare through education and health. With the introduction of new-age programmes in Medical Bio-technology and Bio-Health Diagnostics involving cutting edge technologies, skill enhancement courses, value added courses, and 21st century capabilities for enhanced employability. Hence, Good and academically bright national and international students will be attracted and imparted Knowledge and Skills and retained in Health and Bio-Medical Sciences sector in India for research and innovations and thus contributing to the economic development of the Country. <i>Addressing the Sustainable Development Goals of the UN</i> The proposed programmes offered by the School of Health and Biomedical Sciences are relevant to
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		a wide range of UN Sustainable Development Goals, including 'Good Health and Well-being (3), Quality Education (4), Clean Water and Sanitation (6), Decent work and Economic Growth (8), Life on Land (15) and Partnerships for Goals (17). These programs aim to address societal healthcare challenges by equipping individuals with the knowledge and skills to advance healthcare through biomedical research, diagnostics, and therapeutics. Additionally, courses related to biotechnology entrepreneurship, innovation, and artificial intelligence will contribute to 'Decent Work and Economic Growth' by fostering entrepreneurship and innovation in the biotechnology industry, thereby promoting economic growth and job creation. Moreover, these initiatives aim to enhance 'Industry, Innovation, and Infrastructure' by driving economic development, creating job opportunities, and fostering technological advancements in the biotech sector, especially in medical biotechnology, including vaccine and diagnostic development.
Programmes offered by the Departments in the Schools	Identifiable Outputs	Identifiable Outcomes
Center for Research and Innovation Department of Biomedical Research and Innovation • M.Sc/M.S - Biomedical Research and Innovation • Ph.D (Biomedical Research and Innovation)	<i>Nodal Agency for Multi-disciplinary and Inter-disciplinary Research and Innovations in one campus</i> *The center will be acting as Consortium of Research and Innovation for navigation between the Technical education, Healthcare education, Indian Knowledge Systems education, Agriculture education and Legal education programmes available	<i>NEP2020 Objectives will have been met: Catalysing Quality Academic Research in all Fields</i> *The relevance of these programmes in fulfilling the objectives of NEP 2020 is evident through their comprehensive and interdisciplinary approach to higher education. The research programmes align with NEP's vision of promoting multidisciplinary and inter-disciplinary learning, as they integrate Research in the programmes of

& All Departments offering PG and Ph D programmes in all the Eight (8) Schools proposed	in one campus of MNR-HERA for inter-disciplinary research contributing to better way of living of the people. *Will act a Nodal agency for conducting and coordinating interdisciplinary research by the students of different departments aligning with the overarching objectives of the NEP and Synergy for Collaborative inter-disciplinary research will have been achieved *Will act as Hub for cutting-edge research and forward-thinking projects in the campus *The Center will have promoted holistic learning, innovative research and enhanced capability to understand and resolve the problems in a more acceptable manner *The multi-disciplinary and inter-disciplinary interface fosters research collaboration and knowledge exchange among these domains *Research will also have improved and enhanced through a holistic and multi-disciplinary education approach of the MNR-HERA *Opportunity will have been provided to work together, share ideas and leverage their expertise to address the challenges and	Arts, Humanities, Intelligence and Computing, Health and Agriculture by various departments in one campus. With the Center's interface with other professional schools in the campus, these programs involve inter-disciplinary thinking, discussion, debate, research and innovation across the disciplines for the students in the true spirits of NEP 2020. *The programmes enable an individual to study one or more specialized areas of interest in allied health sciences at deep level and to develop character, ethical and constitutional values, intellectual curiosity, scientific temper, creativity, spirit of service and 21st Century capabilities across the range of disciplines including social sciences, humanities and languages in tune with the guidelines of NEP 2020. *Promotes inter-disciplinary research among the Scholars and Researches across the disciplines with a real-world impact addressing the needs of marginalized communities *Will be conducting and coordinating interdisciplinary research by the students of different departments of Technical education, Healthcare education, Agriculture education and Legal education aligning with the overarching objectives of the NEP 2020 Addressing the Strategic Needs of the Country Quality inter-disciplinary academic Research in all fields *India requires a robust ecosystem of research in view of the rapid changes in the realm of climates change, population dynamics and management, expanding digital market place and the rise of
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	complex contemporaneous issues across the disciplines for the benefit of the Society *Acts as a catalyst for promoting inter-disciplinary research * Will act as the promoter for the novel UG (Hons) Research programmes of the Departments as envisioned in NEP 2020 and will guide the UG and PG students of various departments in selection and conduct of research on contemporaneous issues in the respective disciplines *Game Changer in Research in Arts, Knowledge Systems, Health sciences along with innovations in Science, Engineering and Technology for the progress of the Nation. *It will design various Master's and Ph D programmes suiting to the needs of Academia, Government and Industry	artificial intelligence and machine learning to become a knowledge society in the coming years with significant expansion of research capabilities and output across the disciplines as envisioned in the NEP 2020. This Center will strive hard to fulfill this need. *India needs Multi-disciplinary Education and Research Universities (MERU) over a period of time. This Center contributes to the development of MNR-HERA as a MERU in private sector with highest standards for multi-disciplinary education. *Knowledge creation and Research are critical in growing and sustaining a large and vibrant Indian economy and continuously inspiring the Nation even to achieve greater heights *The center will have contributed to the high-quality inter-disciplinary research across the fields of Intelligence and Computing, Health Sciences, Indology, Cultural Heritage and Agriculture in MNR-HERA campus <i>Economic Development of the Country</i> In a rapidly changing scenario in the fields of advanced research in the fields of science, medicine, engineering and technology and agriculture in the backdrop of climate change, population dynamics and the rise of machine learning and artificial intelligence in the Country in the coming years, this institutional research infrastructure created will attract Good Scholars and Researchers with 21st century capabilities across the fields and retain in India after quality academic research with enhanced employability in Academia and Research for advanced research and innovations and thus contributing to the overall economic development of the Country.
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		Contribution to SDGs of the UN All the objectives of the Center for Research and Innovation align with various Sustainable Development Goals, promoting cultural preservation, sustainable practices, well-being, social equity, and responsible citizenship. By integrating traditional wisdom with contemporary challenges, the programmes play a significant role in contributing to a more sustainable and inclusive world. The graduates will contribute to the UN's sustainable development goals of Zero Hunger (1), Good Health and Well-being (3), Quality Education (4), Gender Equality (5), Affordable and Clean Energy (7), Decent Work and Economic Growth (8), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life on Land (15), and Partnerships for the Goals (17). By integrating the research programmes with the SDGs, the Center not only contributes to national development but also prepares researchers to play a vital role in achieving the UN's sustainable development agenda on a global scale.
Common to all programmes offered by all the Departments	Identifiable Outputs	Identifiable Outcomes
Research Internships	*Enhanced Research Aptitude for the Students *Capability to carryout research projects independently in a real work environment	*Enhanced employability of the graduates

	*Ability to learn, understand and sharpen research acumen *Enhanced problem-solving and critical thinking abilities *Ability to write research proposals, scientific and technical reports and research publications and presentations *Exposure to State-of-the-art equipment, research methodology, tools and techniques *Awareness on research ethics, professional accountability	*Institutionalization of Research Internships for catalyzing multi-disciplinary / interdisciplinary / trans disciplinary research culture *Promotion of academic and professional developments *Integration of Research, Innovation Technology and Technology Development for contributing to achievement of “Atma-Nirbhar Bharat”
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17. Names of the proposed Programmes by MNR-HERA (proposed DTBU) along with the Justification as to how these programmes fit into “Distinct Category”

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”
School of Intelligence and Computing Department of Intelligence and Computing • B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Machine Learning) • B.Tech/B.S (Hons) - CSE (Artificial Intelligence and Data Science) • M.Tech/M.S - CSE (Artificial Intelligence and Machine Learning) • M.Tech/M.S - CSE (Artificial Intelligence and Data Science) Department of Mechatronics Engineering • B.Tech/B.S (Hons) - Mechanical (Mechatronics) • M.Tech/M.S - Mechanical (Mechatronics) • Ph.D in Mechatronics Engineering Department of Additive Manufacturing • B.Tech/B.S (Hons) - Mechanical (Additive Manufacturing) • M.Tech/M.S - Mechanical (Additive Manufacturing) Department of Computer Science and Engineering • B.Tech/B.S (Hons) - Computer Science and Engineering (CSE) • M.Tech/M.S - Computer Science and Engineering (CSE) • Ph.D in Computer Science and Engineering Department of Electronics and Communication Engineering • B.Tech/B.S (Hons) - ECE (Internet of Things) • M.Tech/M.S - ECE (Internet of Things) • Ph.D in Electronics and Communication Engineering	Uniqueness of the Programs The curriculum of the programs offered by the Departments of Intelligence and Computing, Mechatronics Engineering, Additive Manufacturing, general CSE and ECE are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure 1 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Accordingly, these are the first of their kind unique initiatives contemplated by the MNR-HERA proposed DTBU. These

will have interface with the proposed **Schools of Technology Led Agriculture, Energy Studies, Health and Bio-Medical Sciences, Community Wellness and Lifestyle Management, Indian Knowledge Systems and Management and Law and the existing Medical College and Hospital in one campus** for multi-disciplinary and inter-disciplinary thinking, debate and discussion across the disciplines and applications in Health, Agriculture, Bio-Medical Sciences, Energy and Environment, Management and Law and Sustainable Living. Accordingly, these are the first of their kind unique initiatives in the Country contemplated by the MNR-HERA proposed DTBU under Intelligence and Computing programmes as these cutting edge technologies are woven into all undergraduate educational programmes of the proposed DTBU.

Addressing the Strategic Needs of the Country

Need for application of Cutting Edge Technologies in every field: In India, the era of Artificial Intelligence, Machine Learning and Data Science has started and all future scientific and technological explorations will revolve around these cutting edge technologies in the fields of Intelligence and Computing that are fast gaining prominence in the Country. The **“Make in India”** programs in all sectors of Industry, Science and Technology, Space Research needs experts in Intelligence and Computing, Mechatronics, AI, ML, 3-D Manufacturing. After two happening decades of Google, social media and massive smartphone penetration; AI is going to be the *next Big Thing* in technological revolution. We are already seeing its flourishing buds across industries from self-driving cars to advanced IBM Watson in healthcare. These cutting edge technologies cause a disruptive shift in many areas of industry, academia and research. From revolutionizing the automotive and manufacturing sectors with cutting-edge technology to creating 3D bio-printed tissues in the medical fields that require transferable skills and the ability to bring broad-minded, creative ideas to meet client specifications. Business roles and business support roles are also in demand, making 3D broad-minded, different creative new ideas a promising industry with a bright future for professionals seeking dynamic and innovative career paths. India also needs and welcomes a great diversity of talent in additive manufacturing to provide opportunities to the youth in this emergent field to define their roles to start companies with numerous business opportunities. Data Science plays a crucial role in assisting every business organization in identifying business trends and changes through advanced Big Data Analytics with a variety of techniques and tools to interpret and predict business results and the future from multiple data sources through statistical analysis, data aggregation and data mining. The enormous data produced every day can only be processed with these techniques with high computing power. The Graduates will be enabled to effectively use Internet of Things (IoT) to solve real life multi-disciplinary problems that caters to the need of society and is economically viable what the country needs today. These opportunities and challenges make these programs an interesting career option also by the students.

India needs applications of these cutting edge technologies in the fields of Medical and Health, Technology-led Agriculture, Green Energy, Environment and Sustainability, Bio-Technology, Lifestyle Management, Community Wellness, Aero Space Research, Information Security, Banking, Authentication of the business transactions through block chain, Natural Disasters Management, Coastal Resources Research. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-economic and societal issues and contribute to the country's sustainable growth, resilience, and techno-economic global leadership.

Space Research: India with the recent grand success of Chandrayan-3 and the launch of Aditya is poised to make further space explorations. The importance of Artificial Intelligence and the Mechatronics has been well known by now AI technology has significantly enhanced satellite navigation and control systems,

enabling more accurate and efficient operations. By leveraging advanced algorithms and machine learning techniques, satellites can autonomously determine their positions, adjust orbits, and navigate through complex space environments. These technologies help in conducting tasks that humans would otherwise be unable to perform in space, such as analyzing cosmic occurrences, system control, charting stars and black holes. The programmes are well designed to equip the students with the advanced knowledge and skills on these technologies and rise to the country's needs.

Addressing Environmental, Agricultural, Societal and other Needs

- **Environment and sustainability:** Knowledge of AI, ML and DS will make individuals better understand the environmental issues and problems and demonstrate knowledge and skills to provide **technically feasible, environmentally friendly and economically viable intelligence solutions** in societal and environmental contexts particularly for sensor monitored solutions to the problems in Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian context
- **Technology-Led Agriculture:** Indian Agriculture presently new set of issues such as global warming, natural resources depletion and degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. Original research on non-destructive Sensing, Mechatronics (Drones) in Agriculture, Artificial Intelligence for Smart agriculture-food systems, Market Intelligence for forecast of agricultural products prices, optical imaging for on-line grading of agricultural and horticultural produce, computer vision and robotics (Drones) for speciality crop management, phenotyping and AI in confined production systems, image processing and analysis, Uberisation of Farm Machines for farmers using AI and ML for cost effective and timely farming operations for increased crop yields for the benefit of farmers
- **Ethics:** Application of these cutting edge technologies will contribute to professional ethics and responsibilities and norms of the engineering practice and minimize human interventions
- **Design/development of new-age solutions:** These unique courses in Artificial Intelligence, Machine Learning, Data Science and Additive Manufacturing and Mechatronics with important applications to Health, Environment, Green Energy Environment, Lifestyle Management will make graduates to achieve core competence in fundamentals of basic sciences required to formulate, analyze and solve interdisciplinary complex Engineering problems in core areas of Electronics with Internet Technology, Telecommunication, Sensors, Cloud Computing and Data Analytics to provide efficient futuristic solutions. The MNR HERA creates ambience for multidisciplinary and interdisciplinary thinking, discussion, debate to meet the specified needs with appropriate consideration for the public health and safety, agriculture and the cultural, societal, and environmental considerations.
- **The Intelligence and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend future predictions and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- **Project Management and Finance:** Demonstrate knowledge and understanding of the complex engineering and management principles and apply these skills, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning especially in long-term predictions in human, weather, ecology aspects using sensitivity analysis in the broadest context of technological changes

Dedicated to Skill Manpower Development in the Country

The programmes in artificial intelligence, machine learning, additive manufacturing, internet of things along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, problem solving approach, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships with local industry, practical industrial training, business and also MSMEs will contribute to the practical side of their learning and further improve their employability. With these qualities and skills, the graduates will also be able to go for start-up business activities and business incubators and also will contribute to “Make in India” manufacturing programs on their own. On the whole, India, having the world’s largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be “Young Skillful India” contributing to the National and Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes, will be proud to contribute its might towards this goal of preparing cutting-edge technologists for important applications into Health, Industry, Agriculture, Energy, Environment, Space Research and Sustainable living.

Contribution to the SDG’s of the UN

These programmes in addition to their relevancy to the strategic needs of the country by addressing information security, giving authentication of the business transactions through block chain, providing emergency services during natural disasters etc they also contribute to achievement of SDGs of the UN. The educational programmes offered by the School will not only develop individuals capable of meeting the challenges faced by the society in tackling the scientific and technological issues, but also contribute to the SDGs of Quality Education (4), Industry Innovation and Infrastructure (9), Climate Action (13), Reduced inequalities (10), Life on Land (15), Affordable and Clean Energy (7).

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”
School of Indian Knowledge Systems Department of Cultural Heritage • B.Sc/B.S (Vastu) • B.A (Cultural Heritage) • B.A (Vedic Science & Philosophy)	<i>Uniqueness of the Programs</i> The “Knowledge of many Arts must be brought back to Indian Education” is the main motto of the programs proposed by the MNR-HERA proposed DTBU under the School of Indian Knowledge Systems as envisioned in NEP 2020. The curriculum of the programs

• Diploma in Vastu Department of Indian Music and Cultural Studies • B.A (Carnatic Music) • B.A (Hindustani Music) • B.A (Instrumental Music) • B.A (Indian Classical Dances) • Diploma in Hindustani Music • M.Sc/MA (Indian Classical Dances) • Ph.D in Indian Classical Dances Department of Sanskrit and Indian Languages • B.A (Sanskrit) • MA (Sanskrit) Department of Yoga and Naturopathy • B.A (Yoga & Meditation) • B.Sc/B.S (Yogic Sciences) • Diploma in Yoga and Meditation • M.Sc/MA (Yogic Sciences) • Ph.D in Yogic Sciences	offered by the Departments of Cultural Heritage, Sanskrit and Indian Languages and Yoga and Naturopathy are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-2 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the graduates in these programs will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA).
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In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Students will be creative, self-motivated, adaptive, focused, and capable of collaborating in multi-disciplinary environments. They will have communicated their contributions actively in time through high quality, peer reviewed publications and deliver presentations at conferences for the benefit of agricultural extension departments and the farmers.

Accordingly, these are the first of their kind unique initiatives in the Country contemplated by the MNR-HERA proposed DTBU under the School of Indian Knowledge Systems.

Addressing the Strategic Needs of the Country

Education in Indian Knowledge Systems: The India now envisions holistic and multi-disciplinary learning in universities. The “scientific fields”, “professional fields”, “vocational fields” and “Arts and Humanities” and their integration in a multi-disciplinary education system are the need of higher education system. MNR-HERA proposes these programs for inter-disciplinary debate and discussion with the students of other professional Schools included in the DPR.

Multi-disciplinary and Stimulating Indian Education: To fulfill this strategic need, MNR-HERA will move towards holistic and multi-disciplinary education to lead the country into 21st Century. The programs have included courses of Artificial Intelligence, Mechatronics and Computer applications offered by other Departments like Intelligence and Computing, Mechatronics, Community Wellness and Lifestyle Management, Health and Bio-Medical Sciences in the proposed DTBU in Indian Music, Dance and Modern Indian Languages. In other words, the students of these programs will aim to learn more sciences, cutting edge technologies, agriculture, health care, management and law in one Campus.

Viswa Guru: These programs contribute to collective wisdom of ancient India, rooted in spirituality, philosophy, sciences, arts, performing arts, music, Yoga, Vastu, Vedic sciences and social principles. From spiritual and philosophical insights to scientific discoveries, traditional medicine, arts, and social sciences, the programs under Indian Knowledge Systems encompass a wide range of disciplines that reflect the depth of human understanding and exploration. The programs enable the students to undertake a wide array of activities in diverse areas so that India can meet its future aspiration of positioning itself as “Vishwa Guru”, with particular emphasis on education, health, and the environment. These knowledge systems continue to inspire and shape various aspects of contemporary life and are a testament to the profound intellectual achievements of India's ancient civilizations. Preserving and promoting these invaluable traditions is essential not only for the preservation of cultural heritage but also for finding holistic solutions to the challenges faced by humanity in the modern world.

Cultural Heritage: These programs will enable the students for better understanding and embracing cultural heritage is vital for national cohesion and fostering cross-cultural understanding, contributing to social harmony and mutual respect. In a rapidly evolving global landscape, India's ancient wisdom and cultural heritage offer valuable insights that can shape the nation's progress and empower its citizens to navigate complex challenges with innovative and holistic approaches. These programs serve as a custodian of the country's deep-rooted traditions, spiritual insights, and social practices, instilling a sense of pride and unity among citizens. In a world marked by rapid advancements and interconnectivity, the IKS course acts as a bridge between traditional wisdom and modern advancements. By integrating ancient knowledge with contemporary disciplines, students gain a unique advantage of a well-rounded education that embraces both the past and the present. This interdisciplinary approach equips them with a holistic understanding of complex issues, facilitating well-informed decision-making and fostering creative thinking.

Health, Wellness, Cultural and Yoga Education: The programmes offered by the School contain components related to Health, Wellness, Culture, Yoga and Meditation to promote an optimal state of physical, emotional, intellectual, social, spiritual well-being of a person. The programmes on Yoga, Meditation, Music and Cultural Heritage prepare the students physically and mentally for critical thinking, self-discipline, self-control, stress management to learn to handle oneself well in all life situations in true spirits of NEP 2020.

AYUSH vision: The demand for traditional expertise, such as Ayurveda, yoga, and classical arts, is on the rise both within the country and internationally. These programs prepare individuals to preserve, modernize, and meet this growing demand. By nurturing experts in these fields, India's soft power is further enhanced and economic growth is bolstered through the promotion of traditional practices.

Value Based Education: These programs contribute to value-based education, which is a strategic need of the Country, for development of humanistic, ethical, constitutional and universal human values of Truth (Satya), Righteous Conduct (Dharma), (Shanti), Non-Violence (Ahimsa), scientific, temper, social commitment and spirit of service.

MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle cultural, socio-economic issues and contribute to the country's sustainable growth, resilience economic global leadership.

Dedicated to Skill Manpower Development in the Country

The programmes in Indian Knowledge Systems, Cultural Heritage and Languages along with the skill enhancement courses (Section 15 (a) of the DPR) and the multi-disciplinary courses are aimed to develop all capacities of human beings, intellectual, social, physical, emotional and moral in an integrated manner for enhanced employability of the graduates. In addition to the chosen major discipline, the multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development in arts, music and yogic sciences and also enhanced employability of the graduates. Opportunities of internships with local public and private organisations in Indology, music, performing arts will contribute to the practical side of their learning and further improve their employability. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be "Young Skillful India" contributing to the Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes in Indology, will be proud to contribute its might towards this goal of bringing the "Glory of India's Past" back into Indian higher education system for contributing to Healthy and Sustainable Living of People.

Contribution to the SDG's of the UN

All the programs offered by the School of Indian Knowledge Systems course align with various Sustainable Development Goals, promoting cultural preservation, sustainable practices, well-being, social equity, and responsible citizenship. By integrating traditional wisdom with contemporary challenges, the course plays a significant role in contributing to a more sustainable and inclusive world. The educational programmes offered by the School will contribute to the UN's sustainable development goals of Good Health and Well-being (3), Quality Education (4), Gender Equality (5), Affordable and Clean Energy (7), Decent Work and Economic Growth (8), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life on Land (15), and Partnerships for the Goals (17). By integrating Indian Knowledge Systems with the SDGs, the course not only contributes to national development but also prepares individuals to play a vital role in achieving the UN's sustainable development agenda on a global scale.

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into "Distinct Category"
School of Technology-Led Agriculture Department of Technology-led Agriculture • B.Sc/B.S (Hons) Agriculture: (Major) with Computer Applications and Artificial Intelligence in Agriculture (Minor)) • B.Sc/B.S (Hons) Agriculture Computer Applications and Artificial Intelligence with Research Department of Crop Production Technologies • M.Sc/M.S (Ag.) Artificial Intelligence and Computer Applications in Crop Production	<i>Uniqueness of the Programs</i> The "Technology-led Agriculture and the Farmers' Welfare" aspects are the unique features of the proposed programs keeping in view the flagship programs of the GoI-Ministry of Agriculture and Farmers' Welfare and the ICAR. The curriculum of the programs offered by the Departments of Technology-led Agriculture, Crop Production Technologies, Crop Production Technologies are so designed as to include the multi-disciplinary (MDC),

• Ph.D in Crop Production Technologies Department of Crop Protection Technologies • M.Sc/M.S (Ag.) Artificial Intelligence and Computer Applications in Crop Protection • Ph.D in Crop Protection Technologies Department of Agricultural Sciences and Farmers Welfare • Diploma in Agricultural Technology (Cereals and Pulses) • Diploma in Agricultural Technology (Millets) • B.Sc/B.S (Hons) Agriculture	value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-3 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the Tech-Agriculture graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC,
VAC, AEC, SEC and RAEC courses are listed and choice based selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA Technology-led Agriculture programs). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Students will be creative, self-motivated, adaptive, focused, and capable of collaborating in multi-disciplinary environments. They will have communicated research outcomes actively in time through high quality, peer reviewed publications and deliver presentations at conferences for the benefit of agricultural extension departments in general and the farmers in particular. Multi-disciplinary and Inter-disciplinary curriculum: In offering certain of these programs, the multi-disciplinary/Interdisciplinary courses will be dealt by involving expertise available with other existing Schools in MNR-HERA campus; For dealing with subjects such as Artificial Intelligence, Machine Learning, Mechatronics Engineering and Data Science in Agriculture, RS & GIS, use of UAVs (Drones) in Agriculture, Precision farming, interface with the School of Intelligence and Computing; For the subjects on medicinal plants, biochemistry, agro-homoeopathy, the expertise and facilities in the School of Health and Bio-Medical Sciences will be utilized. For the subjects on sustainability, the faculty of School of Community Wellness and Lifestyle Management will be used. Accordingly, these are the first of their kind unique initiatives in the Country contemplated by the MNR-HERA proposed DTBU under Technology-led agricultural programs Addressing the Strategic Needs of the Country Technology-led Agriculture: The Indian agricultural scenario has been witnessing a tremendous change during the recent areas. An entirely new set of issues such as global warming, natural resources depletion and degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. In other words, agriculture has become more challenged with balancing sustainability, productivity and profitability. In order to address these issues, a paradigm shift is called for in human resources development, research,	

technology generation and dissemination and commercialization. In this endeavour, the conventional research approaches need to be supplemented by the cutting edge technologies requiring multi-disciplinary and multi-institutional inputs and accordingly these programs are formulated.

Intelligence in Agriculture: The programs have included courses of Artificial Intelligence and Computer applications in agriculture to provide real time solutions to pest and disease problems for their control on time and at reduced costs. Original research on non-destructive sensing, automation/robotics, **Artificial Intelligence for smart agriculture-food systems, optical imaging for on-line grading of agricultural and horticultural produce, computer vision and Robotics**, Uberisation of Farm Machinery like Harvesters for speciality crop management, phenotyping and AI in confined production systems, image processing and analysis. **Market Intelligence** aspects have been included to enable them to impart training to farmers to grow crops based on the predicted prices of the crops at the end of the crop season and also the MSP given GoI for the crops to achieve higher profits. The programs will enable the students to acquire knowledge in the following areas.

- Robotics and AI in Row Crop Agriculture and Vertical Agriculture
- Application of Machine Vision in agricultural mechanization
- Application of UAVs (Drones) for timely pest and disease control with less cost
- AI controlled Soil Moisture Sensor based crop irrigation water scheduling
- AI applications in irrigation and drainage water management
- Machine Learning Approaches for Climate Smart Agriculture
- Advancements in Robotic Crop and Fruit Harvesting Technologies
- IoT and Big Data Analytics in Agricultural Food Processing applications

Doubling the Farmers' Income: These unique programs in technology-led agriculture make the students to acquire knowledge and skills to interact with farmers which boosts farmers' ability to understand and adopt the scientific recommendations. Thus agricultural education enable them to make better use of available information to overcome solutions and limitations in enhancing production by meeting the finance and marketing challenges. Application of Mechatronics (UAVs or Drones) and Robotics, Operation of farm machinery and equipment using AI, ML will contribute cost effective and timely farming operations for increased crop yields for the benefit of farmers.

Farmers Welfare Orientation: So far in Indian agricultural higher education, welfare aspect has not been given due importance. Value added courses common to all UG courses (Section 15 (a) Academic Plan of the DPR) on Humanities, Rural Sociology, Anthropology, Community Development and Psychology included in these programs and multi-disciplinary courses will make the students understand the socio-economic aspects of farmers particularly those at the bottom of the socio-economic pyramid. The programs will enable the students to understand the farmers and their social behavior, society and the nation. are specially designed to enable the students to gain communications skills with farmers

Natural Resources Management: These programs with applications from artificial intelligence, machine learning, mechatronics provide knowledge and skills in the areas of controlled environment in agriculture, smart systems for production agriculture, optimization of irrigation scheduling using a wide range of state-of-the-art technologies such as soil moisture sensors, infrared thermometers, leaf water potential sensors, evapotranspiration sensors, machine learning models for irrigation and drainage which contribute to efficient natural resources management. The programs make the graduates competent to deal with the soil and water conservation, reclamation of waste and saline affected lands and conjunctive use of surface and

ground waters for achieving higher land and water productivity

MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-agro--economic and societal issues and contribute to the country's sustainable growth, resilience, and techno-agro- economic global leadership.

Dedicated to Skill Manpower Development in the Country

Agriculture is the Spine of the Country. Present day farmers require lot of practical skills to make agriculture attractive and remunerative through ease of doing agriculture. To achieve this, the agricultural graduates and post-graduates who are the future agriculture officials, extension officers and scientists must be imparted skill oriented agricultural education. The programmes on Technology-led Agriculture with the applications of artificial intelligence, machine learning, Mechatronics (Drones) along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, problem solving approach, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships with local agro-based industry, seed processing industry, post-harvest processing industry, Drones manufacturing units will contribute to the practical side of their learning and further improve their employability. The Experiential Learning Programmes, Earn-while you-Learn business oriented crop production and protection units established in the educational Farm and the Rural Agricultural Work Experience in Farmers fields in villages are introduced in the curriculum as per the ICAR's recommendations for Skillful Agricultural Higher Education. With these qualities and skills in Agri-Business Management, the graduates will also be able to go for start-up business activities and business incubators. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be "Young Skillful India" and the youth will be attracted to agriculture as a way of sustainable living. MNR-HERA proposed DTBU, through the specially designed Technology-led agricultural programmes, will be proud to contribute its might towards this goal of preparing skilled graduates to work for empowerment of farmers on ease of doing profitable agriculture in the Country.

Contribution to the SDG's of the UN

The recommendations of the Indian Council of Agricultural Research (ICAR)-Deans Committee are considered while formulating the course curriculum of these programs which contribute the listed Sustainable Development Goals (SDGs)-2015 of UN to be achieved by 2030 such as **Zero Hunger; Quality Education; Decent Work and Economic Growth; Responsible Consumption and Production; Life on Land; Life under Water;** by accomplishing higher productivity and profitability, Technology-led Agricultural Education, sustainable agriculture and living as was provided in the contents of course curriculum of these programs

Addressing Environmental, Societal and other Needs

- **Environment and sustainability:** Knowledge on technological interventions into Agriculture (optimum use of fertilizers and pesticides using Drones, land and water management will make individuals better understand the land, water and environmental issues and problems and

demonstrate knowledge and skills to provide technically feasible, **environmentally friendly and economically viable intelligence solutions** in societal and environmental contexts particularly for AI-based sensor monitored solutions to the problems in Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian context

- **Agriculture Business Management:** These programs with courses on economics and business management equip students with the ability to take up agriculture as a Business Enterprise and will be able to go for start-up companies and incubators.
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend future predictions and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”
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School of Energy Studies

Department of Environment and Sustainable Development

- B.Sc/B.S (Hons)- Environment and Sustainable Development
- M.Tech/M.S - Environmental Science and Engineering

Department of Environmental Health and Ecology

- Diploma in Environmental Protection
- M.Sc/M.S - Environmental Health Sciences and Management

Department of Green Energy Engineering

- B.Tech/B.S (Hons)- Green Energy and Environmental Engineering - (Major) Sustainable Development (Minor)
- Ph.D in Green Energy and Environmental Engineering

Uniqueness of the Programs

The **Green Energy, Environment and Sustainability** are the key components in the entire education system in the School of Energy Studies. The curriculum of the programs offered by the Departments of Environment and Sustainable Development, Green Energy Engineering, Environmental Health and Ecology are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-4 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of

CCFUP 2022 of the UGC. With these courses included, the graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. Courses in cutting edge technologies such as artificial intelligence, machine learning, big data analysis with important applications to Green Energy, Environment and sustainable living are woven into these programmes. In addition, Multi-disciplinary and inter-disciplinary courses with the **School of Intelligence and Computing, Technology-Led Agriculture, Community Wellness and Lifestyle Management and**

Health and Bio-Medical Sciences are uniquely involved. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Accordingly, these are the first of their kind unique initiatives contemplated by the MNR-HERA proposed DTBU.

Addressing the Strategic Needs of the Country

Green Energy in Economic Development: Future Economic development faces several challenges of the growing population, depletion of natural resources, environmental degradation and global climate change. The challenge of reconciling economic growth, social development, and preservation of the natural environment is widely recognized as the single greatest issue facing the global community. Sustainable development requires active and knowledgeable citizens, as well as caring and informed decision-makers capable of making the right choices regarding the complex and interrelated economic, social, and environmental issues that human society is currently facing. The programmes under the School of Energy Studies offers educational and research programmes in a multi-disciplinary and inter-disciplinary mode with interactions with Schools of Intelligence and Computing, Technology-led Agriculture, Health and Bio-Medical Sciences, Community Wellness and Life style Management which will address the issues of Green Energy and Environmental Sustainability for overall economic development of the country.

Environment and Sustainability Challenges. India needs trained graduates and post graduates who will be able to tackle the environmental and green energy initiatives of public and private organizations, environmental consultancies, academic and research organisations, industries, distilleries, fertilizer plants, NGOs, pollution control boards, Industries and Firms and many others. The School of Energy Studies fosters curriculum, research, and collaborations of the highest standards, and with a global perspective, through faculty drawn from around the world. The school provides interdisciplinary environment and sustainable development education through innovative teaching, impact-driven research, and practice-based engagement. The aim is to allow students to widen their horizon and develop skills required for solving the complex environment and sustainability challenges of the present and future times.

Application of Cutting Edge Technologies in Energy and Environment Fields: India needs applications of the cutting edge technologies in the fields of Medical and Health, Technology-led Agriculture, Green Energy, Environment and Sustainability, Lifestyle Management, Community Wellness. MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-economic and societal issues and contribute to the country's sustainable growth, resilience, and techno-economic global leadership.

Addressing Environmental, Agricultural, Societal and other Needs

- **Environment and sustainability:** The programs on Green Energy Engineering and Environmental Health and Sustainability with applications of AI, ML and DS will make individuals better understand the environmental issues and problems and demonstrate knowledge and skills to provide **technically feasible, environmentally friendly and economically viable and socially acceptable intelligence solutions** in societal and environmental contexts particularly for pollution related solutions to the problems in Environmental Pollution, Land degradation, Salinity affected agricultural lands, ground water quality, Forest Management under real time conditions for sustainable development under Indian conditions.

- **Agro-Energy:** Indian Agriculture presently faces a new set of issues such as global warming, natural resources depletion and degradation, scarcity of agricultural labour and inputs and increased costs of cultivation etc have arisen. These offer exiting challenges and opportunities that require development and application of new knowledge and frontier technologies in agriculture that are cost and time effective. Animal Energy is replaced by Bio-Energy and other Renewable Energy Resources for applications in Agriculture. Efficient management of Agro-Energy is the need of the Day. The course curriculum of these programmes is equipped with all these requirements in Agriculture Sector
- **Design/development of new-age solutions:** By introducing these programmes in Energy studies, the MNR HERA creates ambience for multidisciplinary and interdisciplinary discussion, debate to meet the specified needs with appropriate consideration for finding the socially acceptable solutions in the fields of environmental health, public health and safety, agriculture and the cultural heritage.

Dedicated to Skill Manpower Development in the Country

The programmes on Green Energy and Environmental Protection and Sustainability along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, problem solving approach, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships with local private and public organisations in Renewable Energy, Bio-Energy, Environmental and Pollution Control Boards, local industry, summer practical industrial training, Green Energy promoting organisations and also MSMEs will contribute to the practical side of their learning and further improve their employability. With these qualities and skills, the graduates will also be able to go for start-up business activities and business incubators and also will contribute to “Make in India” manufacturing programs on their own. On the whole, India, having the world’s largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be “Young Skillful India” contributing to the National and Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes on Green Energy Initiatives, will be proud to contribute its might towards this goal of Green Energy India and environmentally friendly India.

Contribution to the SDG’s of the UN

The protection of the environment is considered to be an important goal at all stages of education as envisaged by environmental education for making SDGs a success. It is responsible for conserving natural resources and protecting global ecosystems. These programmes will lead to improvement of the quality of human life without harming ecosystems and to adopt green energy and environmental practices that improve and cleanse our ecosystem. This involves analyzing the energy and resources in our day-to-day lives. The educational programmes offered by the School will not only develop individuals capable of meeting the challenges faced by the society in tackling the environmental issues, but also contribute to the UN’s sustainable development goals of Clean Water and Sanitation (6), Affordable and Clean Energy (7), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life Below Water (14), and Life on Land (15).

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”
School of Community Wellness and Lifestyle Management Department of Artificial Intelligence in Lifestyle Management • B.Sc/B.S (Hons) (Community Wellness and Lifestyle Management)- (Major) -Artificial Intelligence in Lifestyle Management (Minor) Department of Community Resources Management • M.Sc/M.S (Community Health and Wellness) Department of Wellness and Life Style Management • B.Sc/B.S (Community Wellness and Lifestyle Management) • Ph.D in Community Wellness and Lifestyle Management	Uniqueness of the Programs The Health, Community Wellness and Lifestyle Management are the key components and their integration with other disciplines for holistic education is an important aspect of higher education system today. The programmes under the School of Community Wellness and Lifestyle Management are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-5 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of
CCFUP 2022 of the UGC. With these courses included, the graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. The programs will have interface with the proposed School of Indian Knowledge Systems, School of Intelligence and Computing, School of Health and Bio-Medical Sciences, School of Allied Health Sciences and the existing Medical College and Hospital in one campus for multi-disciplinary courses. It will centrally involve inter-disciplinary thinking, discussion, debate, research and innovation across the disciplines for the students of the school of Community Wellness and Lifestyle Management in the true spirits of NEP 2020. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Accordingly, these are the first of their kind unique programmes contemplated by the MNR-HERA proposed DTBU.	
Addressing the Strategic Needs of the Country Community Wellness, Health and Lifestyle Management: India needs the younger generations with an optimal state of physical, mental, emotional, intellectual, social, spiritual and environmental well-being of persons and communities. The programmes on community wellness and lifestyle management will	

contribute to improvement of physical and mental fitness and effective life style management and enhanced ability for stress management to learn to handle oneself well in all walks of life situations. The programmes equip students with the knowledge and skills to become wellness advocates and create positive impacts in their communities. By emphasizing preventive healthcare, nutrition, fitness, stress management, and community engagement, the school seeks to empower individuals to lead healthier lives and inspire wellness initiatives at the grassroots level. Through a comprehensive curriculum and practical experiences, the school aspires to cultivate a generation of professionals dedicated to improving community health and quality of life.

Needs in the backdrop of COVID 19: Improper lifestyle management and food habits have been found to be some of the important factors that led to the COVID 19 pandemic that has taken several lives during the last three years. The COVID-19 experiences have taught us the importance of Wellness and Lifestyle Management, Foods and Nutrition, Yoga and Meditation. As the Ministry of Health and Family Welfare, Government of India gets ready to give a facelift to the entire health care services by encouraging new institutions to get started, the MNR-HERA proposed DTBU extends its support by starting unique courses under the School of Community Wellness and Lifestyle Management so that skilled professionals in community wellness and lifestyle management can be generated to fulfill the present need of India in general and the state of Telangana in particular. The School is one of the few institutions in the state exclusively dedicated to the education and training in community wellness and lifestyle management.

Community Engagement and Service: The programs offered by the School of Community Wellness and Lifestyle Management would expose students to socio-health-economic issues in the Society so that the theoretical earnings can be supplemented by the actual life experiences to generate solutions to real life problems. In a rapidly evolving global landscape, healthcare is a critical component of a nation's strategic infrastructure. These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. The programs align with the 21st-century capacities required by professionals with capabilities across various disciplines.

Need for Professionals in Community Wellness and Lifestyle Management with training on Cutting Edge Technologies:

India needs professionals in community wellness and Lifestyle Management with knowledge and skills in cutting edge technologies that are gaining prominence today globally like Artificial Intelligence, Data Science, Mechatronics and Machine Learning for speedy and accurate solutions. The programmes have multi-disciplinary courses in association with the proposed Schools of Intelligence and Computing and Indian Knowledge systems and the existing Medical College and Hospital in one campus. Accordingly, MNR-HERA proposed DTBU is poised to prepare professionals in these areas by offering these programs equipped with 21-century capacities to tackle Community Wellness and Lifestyle Management Issues and thereby contribute to the community health and thereby country's sustainable growth, resilience and healthcare-economic global leadership.

Artificial Intelligence in Lifestyle Management: The programmes involve the application of AI algorithms, data analysis, and machine learning to assist people in making informed decisions about their diet, fitness, sleep, stress management, and overall well-being.

1. **Personalized Nutrition:** AI can analyze an individual's dietary habits, preferences, and health goals to provide personalized meal plans and nutritional advice. It takes into account factors such as age, weight, activity level, and health conditions to suggest suitable food choices.

2. **Fitness Tracking:** AI-powered fitness apps and wearables can monitor physical activity, heart rate, and other biometric data. These devices can analyze the data to offer personalized workout routines and training recommendations to help users achieve their fitness objectives.
3. **Sleep Optimization:** AI-based sleep tracking devices can analyze sleep patterns and provide insights on how to improve sleep quality. They may offer suggestions on bedtime routines, sleep environments, and relaxation techniques.
4. **Stress Management:** AI can help users manage stress and anxiety by providing meditation exercises, breathing techniques, or recommending activities to reduce stress levels based on individual responses and feedback.
5. **Health Monitoring:** AI can process data from various health sensors and wearables to detect early signs of health issues. It can alert users and healthcare professionals to potential problems, enabling timely interventions.
6. **Mental Health Support:** AI-powered chatbots or virtual assistants can offer mental health support by providing a listening ear, coping strategies, and referrals to professional help when needed.
7. **Habit Formation:** AI can help users establish healthy habits by providing reminders, tracking progress, and offering rewards for consistent behavior.
8. **Disease Prevention:** AI can analyze health data from large populations to identify patterns and risk factors for diseases, helping researchers and policymakers in disease prevention efforts.
9. **Virtual Health Coaches:** AI-powered virtual health coaches can engage with users in real-time, providing motivation, encouragement, and guidance on lifestyle improvements.

Dedicated to Skill Manpower Development in the Country

Today, India has the world's largest young population. Well-being with good life style is very important not only to the young people but also for senior citizens of the country. It is essential for senior citizens to prioritize their own well-being and happiness rather than solely focusing on meeting the needs of their children to avoid regrets and missed opportunities. The programmes on Community wellness and Lifestyle Management along with applications of cutting-edge technologies and the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, problem solving approach, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships in the public and private organisations involved in Community Science, Family Resources Management, Foods and Nutrition, Wellness etc will contribute to the practical side of their learning and further improve their employability. With these qualities and skills, the graduates will be able to work with spirit of service to the society for sustainable living. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be "Young Skillful India" contributing to the National and Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes on Community Wellness and Lifestyle Management emphasizing social welfare will be proud to contribute its might towards the goal of uplifting the living conditions of the general public, especially the underprivileged and the senior citizens, through skillful wellness and lifestyle managers.

Addressing the Sustainable Development Goals

The Community Wellness and Lifestyle Management programmes serve as a catalyst for progress towards achieving multiple UN Sustainable Development Goals. By producing skilled professionals capable of promoting health, well-being, and sustainable practices within communities, the course contributes significantly to the global agenda for a healthier, more equitable, and sustainable world. The educational programs offered by the School will contribute to the UN's sustainable development goals of Zero Hunger (2), Good Health and Well-Being (3), Industry, Innovation, and Infrastructure (9), Reduced Inequalities (10), Responsible Consumption and Production (12), and Partnerships for the Goals (17).

Programmes offered by the Departments

Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”

School of Allied Health Sciences

Department of Health Care and Diagnostic Sciences

- Diploma in Medical Lab Technology
- B.Sc/B.S (Hons) Anesthesiology & OTT
- B.Sc/B.S (Hons) Radiology & Image Tech
- B.Sc/B.S (Hons) Medical Laboratory Tech
- B.Sc/B.S (Hons) Optometry
- B.Sc/B.S (Hons) Emergency Medical Tech
- B.Sc/B.S (Hons) Respiratory Therapy Tech

Department of Physiotherapy and Rehabilitation

- Bachelor of Physiotherapy (BPT)
- Master of Physiotherapy (MPT) in Orthopedics
- Master of Physiotherapy (MPT) in Neurology
- Master of Physiotherapy (MPT) in Cardio Vascular & Pulmonary

Uniqueness of the Programs

The curriculum of the programs of Radiology and Image Technology, Medical Laboratory Technology, Optometry, Emergence Medical Technology, Respiratory Medical Technology and Physiotherapy and Rehabilitation of offered by the Departments of Healthcare and Diagnostic Services and Physiotherapy and Rehabilitation under the School of Allied Health Sciences are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-6 of the DPR) in addition to their major and minor stream courses as per the guidelines of the

NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. The programs will have interface with the proposed **School of Intelligence and Computing and School of Community Wellness and Lifestyle Management, School of Health and Bio-Medical Sciences and the existing Medical College and Hospital** in one campus for multi-disciplinary courses. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical,

moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Accordingly, these are the first of their kind unique programmes contemplated by the MNR-HERA proposed DTBU.

Addressing the Strategic Needs of the Country

Needs in the backdrop of COVID 19: During the last three years, the COVID-19 experiences have taught us the importance of health-care professionals, who have acted as saviors for the entire mankind globally. In fact, India has been the savior for many countries including developed nations by sending the vaccines and medicines. Medicine and Healthcare is one of the most noble professions and a booming career, because the demand for doctors or medical practitioners is never going to decrease. Medical Health Sector needs state-of-the-art courses in Allied Health Sciences. As the Ministry of Health and Family Welfare, Government of India gets ready to give a facelift to the entire allied health services by encouraging institutions to get started, the MNR-HERA proposed DTBU extends its excellence by starting courses under the School of Allied Health Sciences so that skilled healthcare workforce can be generated to fulfill the present need of India in general and the state of Telangana in particular. The School is one of the few institutions in the state exclusively dedicated to the education of allied health professionals. These opportunities and challenges make these programs an interesting career option also by the students.

Strategic Need for India's Healthcare Infrastructure: In a rapidly evolving global landscape, healthcare is a critical component of a nation's strategic infrastructure. The allied health sciences programs address the increasing demand for well-trained and specialized healthcare professionals, offering a diverse range of disciplines that complement and support medical practitioners. As the country faces complex health challenges, These professionals play a pivotal role in ensuring the accessibility and affordability of quality healthcare services. The programs align with the 21st-century capacities required by professionals across various disciplines. By emphasizing practical training, research, technology integration, and ethical awareness, the AHS curriculum cultivates critical thinking, problem-solving, adaptability, and innovation – skills that are highly sought after in the modern workforce. AHS graduates are equipped to tackle complex healthcare issues and contribute to the development and implementation of evidence-based solutions. These programs are not only vital for meeting the strategic healthcare needs of the nation but also instrumental in developing individuals who possess the essential capacities to thrive in the 21st century across various professional domains.

Relevance to the patient care: All the programs under the departments deal with medical diagnostic techniques (e.g. blood analysis, image technology, histopathology, pathological analysis, and radiography) that are used in the medical field and are very relevant for patient care. The role of allied health workers in providing effective care has become critical with diagnosis based on technology. Some Bureaus of Statistics worldwide estimate that, relative to most other professions, healthcare-related careers are out for a higher growth rate. Over the last decade, advancements in technology have produced a dramatic change in the general viewpoint of the healthcare industry. The positions of paramedical practitioners and technologists are no longer considered to be the prerogative of physicians and nurses with greater significance. In addition, a greater range of opportunities are now available in higher-level studies and study areas related to Allied health services.

Need for Professionals in Health Care Diagnostics with training on Cutting Edge Technologies:

India needs professionals in Radiology and Image Technology, Medical Laboratory Technology, Optometry, Emergence Medical Technology, Respiratory Medical Technology and Physiotherapy and

Rehabilitation of individuals with knowledge and skills cutting edge technologies that are gaining prominence today globally like Artificial Intelligence, Data Science. Mechatronics and Machine Learning for speedy and accurate diagnostics with much less costs. MNR-HERA DTBU is poised to prepare professionals in these areas by offering these programs equipped with 21-century capacities to tackle complex techno-economic and societal issues and contribute to the country's sustainable growth, resilience and healthcare-economic global leadership.

Dedicated to Skill Manpower Development in the Country

Skill oriented programmes in allied health sciences, namely Medical laboratory technology, Radiology and Imaging technology, Anesthesiology and OTT, Respiratory therapy technology and Optometry along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, accurate testing methodology, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. In view of the COVID experiences, the programmes have been designed with applications of cutting-edge technologies for expeditious disposal of diagnostic services. India rose to the occasion of emergency medical care and diagnostics during the pandemic facing many challenges in this sector. Lessons learnt from these experiences are included in the curriculum to meet future challenges more effectively. Opportunities of internships with medical diagnostics organisations, corporate hospitals and special trainings in health care diagnostics will contribute to the practical side of their learning and further improve their employability. With these qualities and skills, the graduates will also be able to go for start-up diagnostic labs with state-of-the-art technologies on their own. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be "Young Skillful India" contributing to the National and Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes in health care sector and also backed by the long term experience of MNRET in medical and health education, will be proud to contribute its might towards this goal of preparing skillful medical diagnostic technicians for national and global needs.

Addressing the Sustainable Development Goals and provisions of NEP

The programs offered by the Departments of Health Care and Diagnostics and Physiotherapy and Rehabilitation play a vital role in addressing several UN Sustainable Development Goals, making it a key contributor to global efforts in achieving a more equitable, healthy, and sustainable living. The programs will contribute to the UN's sustainable development goals of Good Health and Well-Being (3), Quality Education (4), Gender Equality (5), Clean Water and Sanitation (6), Decent Work and Economic Growth (8), Reduced Inequalities (10), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), and Climate Action (13).

The relevance of these programmes in fulfilling the objectives of NEP 2020 is evident through their comprehensive and interdisciplinary approach to healthcare education. These courses align with NEP's vision of promoting multidisciplinary learning, as they integrate various subjects like anatomy, physiology, diagnostics, and therapeutic interventions. By emphasizing practical training and experiential learning, the courses bridge the gap between theory and practice, preparing students to meet the real-world challenges of the healthcare industry. The inclusion of courses on medical ethics and professional values ensures that graduates become socially responsible and ethical healthcare practitioners. With their interface with other

professional schools, these programs involve inter-disciplinary thinking, discussion, debate, research and innovation across the disciplines for the students in the true spirits of NEP 2020.

Programmes offered by the Departments

Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”

School of Management and Law

Department of Business Law and Corporate Governance

- Bachelor of Business Management and Bachelor of Laws (BBM LLB)
- Bachelor of Arts and Bachelor of Laws (BA LLB)
- LLM
- Ph.D in Corporate Governance

Department of Public Policy and Business Administration

- Bachelor of Business Administration (BBA)
- Master of Business Administration (MBA)
- Bachelor of Business Administration with Honours - BBA (Hons)
- Ph.D in Business Administration

Department of Service Sector Management

- Diploma in Healthcare Tourism and Management
- Diploma in Event Management
- Ph.D in Service Sector Management

Uniqueness of the Programmes

The curriculum of the programs offered by the Departments of Business Law and Corporate Governance, Public Policy and Business Administration and Service Sector Management of the School of Management and Law are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11 and Section 12 and Annexure-7 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the new-age management and law graduates will have broader vision with applications in other sectors and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC

courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for UG (Hons) (Research) as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Students will be creative, self-motivated, adaptive, focused, and capable of collaborating in multi-disciplinary environments. They will have communicated research outcomes actively in time through high quality, peer reviewed publications and deliver presentations at conferences for the benefit of the Society at large.

Multi-disciplinary and Inter-disciplinary curriculum: In offering certain of these programs, the multi-disciplinary/Interdisciplinary courses will be dealt by involving expertise available with other existing Schools in MNR-HERA campus. For applications of Artificial Intelligence, Machine Learning and Mechatronics Engineering, interface with the proposed **School of Intelligence and Computing** will be

involved. For subjects on medical laws and health care management, the faculty from the proposed **School of Health and Bio-Medical Sciences and the existing Medical College and Hospital** will be utilized. For the courses on agricultural business management, the faculty from the **School of Technology-led Agriculture** will be utilized.

Accordingly, these are the first of their kind unique initiatives in the Country contemplated by the MNR-HERA proposed DTBU under Management and Law programmes

Addressing the Strategic Needs of the Country

Changing Legal Landscape: The programmes promote adaptability to the changing legal landscape and aim to address the strategic needs of the country and international trade and commerce. They achieve this through an interdisciplinary approach, technological proficiency, critical thinking, and equipping individuals with the knowledge, skills, and capacities required to thrive in the complex and rapidly evolving legal landscape.

1. Interdisciplinary Approach between management and law: By involving the integrating principles, concepts and methods to address complex problems and challenges of integration with agriculture, technology, pharmacy schools.
2. Practical skills training: The courses aims to prepare the students for the real world challenges through clinical programs, simulations, negotiation and mediation
3. Specialization options: As per the NEP 2020, the courses are designed for Joint Degree Programs with electives, extra-curricular interventions through clinics and clubs among all disciplines and courses.
4. Experiential learning: The programs aimed to emphasize hands-on, practical experiences and real world applications through incubation and simulations initiatives
5. Professional development: The program focuses on enhancing the knowledge skills and competencies of aspiring management law professionals in their evolving domains.
6. Technological Competence: The program encapsulates virtual learning environment through online, legal research, e-discovery, digital forensics, data skills, analytics, and artificial intelligence.
7. The New Age Management Law Schools are committed to meeting the strategic needs of the country and developing individuals with 21st-century skills across various disciplines. The ability to address the evolving challenges and demands of the modern world is a key factor in achieving this goal.

MNR-HERA DTBU is poised to prepare professionals in these areas equipped with 21-century capacities to tackle complex techno-medico-legal-economic and societal issues and contribute to the country's sustainable growth, resilience and global leadership.

Dedicated to Skill Manpower Development in the Country

The programmes in Business Management, Business Administration and Law along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical and soft skills in management and legal education to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships and MOOC courts will contribute to the practical side of their learning and further improve their employability. Knowledge and skills in IPR, International Laws, Corporate laws, Aero-Space Laws, Agricultural Business Management, preparation of EoI, RFP and DPRs with all legal aspects will have been

imparted to the students. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful management and law education, will be soon be "Young Skillful India" contributing to the Indian an Global Economy.

Contribution to the SDG's of the UN

The programmes offered by School of Management and Law are closely aligned with the United Nations' Sustainable Development Goals (SDGs) in multiple ways. These courses also fulfill the objectives of NEP 2020, MHRD, and the Government of India. The school is dedicated to contributing to the promotion of effective, accountable, high-quality, fair, and inclusive institutions that provide equal employment opportunities. It does this by equipping future managers with the knowledge and skills needed to navigate legal frameworks, regulations, and ethical considerations when making decisions. This aligns with Goals Gender Equality (5), Decent work and economic growth (8), Industry, Innovation and Infrastructure (9), Responsible Consumption and Production (12), and Peace, Justice and Strong Institutions(16) of the SDGs.

Addressing the Societal and other Needs

All the programmes of the school aim to foster innovation, technological integration, experiential learning, and adaptability among students. This will enable them to effectively navigate complex and rapidly changing business and legal landscapes in the Society. These programmes of the New Age School of Management and Law Schol will bridge the gap between traditional education and the demands of the modern world.

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into "Distinct Category"
School of Health and Biomedical Sciences Department of Advanced Bioscience and Technology • B.Sc/B.S (Hons) Bio-Technology Entrepreneurship and Innovation • Ph.D in Biomedical Sciences Department of Healthcare Management • Diploma in Diagnostics and Hospital Management Department of Medical Biotechnology • B.Sc/B.S (Hons)- Medical Biotechnology • M.Sc/M.S- Medical Biotechnology Department of Pharmaceutical Sciences • Diploma in Protein Modeling and Drug Designing	<i>Uniqueness of the Programs</i> The curriculum of the programmes of Bio-Technology Entrepreneurship, Medical Bio-Technology and Bio-Medical Devices and Diagnostics under the School of Health and Bio-Medical Sciences are so designed as to include the multi-disciplinary (MDC), value-added (VAC) (common for all UG courses in the proposed DTBU), ability enhancement courses (AEC) and skill enhancement courses (SEC), Research Ability Enhancement Courses (RAEC) for a total of about 50 credits (Section 11, Section 12 and Annexure-8 of the DPR) in addition to their major and minor stream courses as per the guidelines of the NEP 2020 and the Choice Based Credit System of the new initiative of CCFUP 2022 of the UGC. With these courses included, the graduates will have broader vision with applications in other sectors

Department of Translational Research and Diagnostics • B.Sc/B.S (Hons) - Bio Medical Devices and Diagnostics • M.Sc/ M.S - Bio Bio Medical Devices and Diagnostics	and sustainable living and also higher level of employability. The relevant MDC, VAC, AEC, SEC and RAEC courses are listed and choice base selection will be done by students (Section 15 (a): Academic Plan of the DPR lists the Courses proposed by MNR-HERA). Out of the proposed intake, certain seats will be allotted for 4-Year UG (Hons) (Research)
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as per the choice of the students in order to inculcate research bent of mind for taking up advanced research in contemporaneous researchable areas. The programs will have interface with the proposed **School of Allied Health Sciences, School of Intelligence and Computing, School of Technology-led Agriculture and School of Community Wellness and Lifestyle Management and the existing Medical College and Hospital** in one campus for multi-disciplinary courses. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. Accordingly, these are the first of their kind unique programmes contemplated by the MNR-HERA proposed DTBU.

Addressing the Strategic Needs of the Country

The programmes under the School of Health and Bio-Medical Sciences shall meet the following current needs of India in general and the state of Telangana in particular.

Healthcare Infrastructure Enhancement: The programmes offered by the School enable the students to acquire knowledge and skills to meet the challenges in healthcare delivery, including accessibility, affordability, and quality faced by the Country and provide solutions. This necessitates substantial investments in healthcare infrastructure, such as hospitals, clinics, and telemedicine facilities. Courses offered by the School of Health and Biomedical Sciences can train young professionals to design, implement, and manage healthcare systems that are efficient, patient-centric, and cost-effective, thereby addressing the critical need for improved healthcare infrastructure. Young professionals play a pivotal role in improving disease diagnosis, developing innovative treatments, and enhancing healthcare delivery systems. These programmes are crucial in addressing public health crises and ensuring the overall well-being of the population.

Addressing Emerging Challenges: The healthcare landscape is constantly evolving, presenting new challenges such as pandemics like COVID 19, antimicrobial resistance, and environmental health issues. These courses can prepare professionals to effectively adapt to and address these emerging challenges.

Disease Prevention and Control: India grapples with various communicable and non-communicable diseases. Graduates from these courses can contribute to disease surveillance, prevention, and control efforts by conducting research, developing vaccines, and implementing public health programs aimed at reducing the burden of diseases.

Pharmaceutical Research: India is known as the "**Pharmacy of the World**" due to its significant role in pharmaceutical manufacturing and research. Professionals with advanced bioscience skills are essential for drug discovery, development, and quality control.

Biomedical Research and Innovation: The field of biomedical sciences is at the forefront of scientific innovation. Training in this area can produce researchers and innovators capable of developing new medical technologies, pharmaceuticals, and diagnostic tools, thus contributing to India's self-reliance in healthcare and reducing its dependence on imports.

Sustainable Agriculture: Agriculture is a cornerstone of India's economy. Advanced bioscience and technology in agriculture can equip professionals to address agricultural challenges, including crop diseases, climate change, and food security. By developing innovative agricultural technologies, graduates can contribute to sustainable agricultural practices.

Biotechnology Industry: India has a rapidly expanding biotechnology industry, with a focus on areas like pharmaceuticals, healthcare, agriculture, and environmental sciences. Graduates with expertise in advanced bioscience and technology are in demand to drive research, development, and innovation in these sectors.

Public Health Initiatives: India faces ongoing public health challenges, including infectious diseases, maternal and child health, and non-communicable diseases. Healthcare managers can play a critical role in planning and implementing public health programs, immunization campaigns, and health education initiatives.

The proposed DTBU program at MNR-HERA aims to enhance its excellence by introducing courses under the School of Health and Biomedical Sciences. This initiative aims to leverage Advanced Bioscience Technology to meet the current needs of India in general and the state of Telangana in particular.

Dedicated to Skill Manpower Development in the Country

Skill oriented programmes in health and bio-medical sciences, medical bio-technology entrepreneurship, bio-medical devices along with the skill enhancement courses (Section 15 (a) of the DPR) are aimed at imparting practical skills, hands-on-training, soft skills etc to enhance the employability of the graduates. The multi-disciplinary, value-added, skill and ability enhancement courses opted by the students through the Choice Based Credit System proposed to be introduced in course curriculum as per the guidelines of the CCFUP 2022 of the UGC will contribute to skill development and enhanced employability of the graduates. Opportunities of internships in national research organisations in bio-technology, medical bio-technology, molecular biology, pharmacy and private Bio-tech companies producing vaccines and corporate hospitals will contribute to the practical side of their learning and further improve their employability. With these qualities and skills, the graduates will also be able to go for start-up bio-medical labs with state-of-the-art technologies on their own. On the whole, India, having the world's largest youth population and with the transformative initiatives of the NEP 2020 for skillful higher education, will be soon be "Young Skillful India" contributing to the Global Economy. MNR-HERA proposed DTBU, through the specially designed educational programmes in health care sector and also backed by the long term experience of MNRET in medical education, will be proud to contribute its might towards this goal of preparing skillful medical bio-scientists and technologists for the national and global needs.

Addressing the Sustainable Development Goals and provisions of NEP

The proposed programmes offered by the School of Health and Biomedical Sciences are relevant to a wide range of UN Sustainable Development Goals, including '**Good Health and Well-being**.' These programs aim to address societal healthcare challenges by equipping individuals with the knowledge and skills to advance healthcare through biomedical research, diagnostics, and therapeutics. Additionally, courses related to biotechnology entrepreneurship, innovation, and artificial intelligence will contribute to '**Decent Work and Economic Growth**' by fostering entrepreneurship and innovation in the biotechnology industry, thereby promoting economic growth and job creation. Moreover, these initiatives aim to enhance '**Industry, Innovation, and Infrastructure**' by driving economic development, creating job opportunities, and fostering technological advancements in the biotech sector, especially in medical biotechnology, including vaccine and diagnostic development.

The programmes offered by the School of Health and Biomedical Sciences align with the overarching objectives of NEP 2020. They promote multidisciplinary education, research, and innovation, skill development, entrepreneurship, technology integration, and address healthcare challenges to improve public health. Through a multidisciplinary approach, these courses encourage students to connect with different disciplines, gain a broader perspective, and develop the skills needed to solve societal challenges. Continuous curriculum reviews ensure that the programs evolve to meet the changing needs of students and society at large. Additionally, they emphasize the importance of life skills alongside academic knowledge, preparing students for personal and professional challenges.

The programs promote holistic learning, equipping students with the technical skills necessary to contribute to scientific advancements and address complex real-world challenges and societal needs. They incorporate the use of technologies such as artificial intelligence, machine learning, and data science, preparing students to navigate the digital era.

Programmes offered by the Departments	Justification of the programmes on their uniqueness, addressing strategic needs, preservation of cultural heritage or environment or dedicated to skill development for fitting into “Distinct Category”
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Center for Research and Innovation Department of Biomedical Research and Innovation • M.Sc/M.S - Biomedical Research and Innovation • Ph.D (Biomedical Research and Innovation)	<i>Uniqueness of the Programs</i> The Center for Research and Innovation aims to develop a comprehensive research and development platform for the students, scholars and clinicians to perform research based studies and innovation in all fields of technical
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education, medical education, agriculture education and legal education proposed in the MNR-HERA DTBU. The Center aims to be a premier research and innovation hub, fostering a culture of research excellence, curiosity, and creativity in all fields across the disciplines. It is envisioned as a vibrant and dynamic space where scholars, researchers, clinicians and innovators from interdisciplinary fields can collaborate, exchange ideas, and contribute to cutting-edge research and development. The programs will have interface with all the proposed eight schools namely **School of Intelligence and Computing, School of Technology-led Agriculture, School of Indian Knowledge Systems, School of Energy Studies, School of Community Wellness and Lifestyle Management, School of Health and Bio-Medical Sciences, School of Management and Law and the School of Allied Health Sciences** in one campus for multi-disciplinary courses. It will provide all opportunities for the students for multi-disciplinary and interdisciplinary thinking, debate, discussion, research and innovation across the range of disciplines in true spirits of NEP 2020. Particularly the UG (Hons) - Research programmes and the Research Internships envisioned in NEP 2020 and CCFUP 2022 of the UGC in all the departments will be benefitted. In other words, holistic individuals with 21st Century capabilities will be developed with capacities of intellectual, aesthetic, social, emotional, ethical, moral, critical and creative thinking for problem solving in an integrated manner in addition to these chosen rigorous major and minor programs. It also offers PG and Ph D programmes on its own. Accordingly, it is a first of its kind unique Center contemplated by the MNR-HERA proposed DTBU.

Addressing the Strategic Needs of the Country

Quality inter-disciplinary academic Research in all fields

- India requires a robust ecosystem of research in view of the rapid changes in the realm of climates change, population dynamics and management, expanding digital market place and the rise of artificial intelligence and machine learning to become a knowledge society in the coming years with significant expansion of research capabilities and output across the disciplines as envisioned in the NEP 2020. This Center will strive hard to fulfill this need.
- India needs Multi-disciplinary Education and Research Universities (MERU) over a period of time. This Center contributes to the development of MNR-HERA as a MERU in private sector with highest standards for multi-disciplinary education.
- Knowledge creation and Research are critical in growing and sustaining a large and vibrant Indian economy and continuously inspiring the Nation even to achieve greater heights
- The center will have contributed to the high-quality inter-disciplinary research across the fields of Intelligence and Computing, Health Sciences, Indology, Cultural Heritage and Agriculture in MNR-HERA campus

Economic Development of the Country

In a rapidly changing scenario in the fields of science, engineering and technology in the backdrop of climate change, population dynamics and the rise of machine learning and artificial intelligence in the Country in the coming years, this institutional research infrastructure created will attract Good Scholars and Researchers nationally and internationally with 21st century capabilities across the fields and retain in India after quality academic research with enhanced employability in Academia and Research for advanced research and innovations and thus contributing to the overall economic development of the Country.

Contribution to SDGs of the UN

All the objectives of the Center for Research and Innovation align with various Sustainable Development Goals, promoting cultural preservation, sustainable practices, well-being, social equity, and responsible citizenship. By integrating traditional wisdom with contemporary challenges, the programmes play a significant role in contributing to a more sustainable and inclusive world. The graduates will contribute to the UN's sustainable development goals of Zero Hunger (1), Good Health and Well-being (3), Quality Education (4), Gender Equality (5), Affordable and Clean Energy (7), Decent Work and Economic Growth (8), Sustainable Cities and Communities (11), Responsible Consumption and Production (12), Climate Action (13), Life on Land (15), and Partnerships for the Goals (17). By integrating the research programmes with the SDGs, the Center not only contributes to national development but also prepares researchers to play a vital role in achieving the UN's sustainable development agenda on a global scale.

18. National and International Collaborations

As the proposed MNR-HERA DTBU has the objective of preparing the individuals to meet the 21st Century requirements, strategic needs, economic development of the country and also contributing to the Sustainable Development Goals of the UN, it seeks to collaborate with premier national and international universities and organisations for achieving these goals and objectives. The proposed DTBU believes that forming global partnership and fostering relationships is crucial in this direction since academics and research internationalization will bring benefits, including access to different expertise and facilities, networking, assimilating a different culture, and raising international awareness of the DTBU and its programmes. It plays significant roles in development of individuals and research ideas and also to attain the goal of global standards and attracting greater number of good international students.

It will encourage large number of international students to study in the DTBU especially in the proposed programmes in **Healthcare education, Yoga, Culture, Music, internationally relevant curriculum in the programmes of Intelligence and Computing, Technology-led agriculture and Lifestyle Management** in tune with the guidelines of NEP 2020 on “**Internationalization at Home**”. All MoUs in the pipeline will facilitate measures which are likely to provide greater mobility to students in India who may visit and study by transfer of credits or carry out research at universities abroad. **The proposed DTBU will play its role in promoting India as a global study destination providing premium education at affordable costs.**

The Trust had the following International Collaborations for different colleges mentioned in the parenthesis

- MOU with the University of Arkansas for Medical Sciences, Little Rock Arkansas, USA. (MNR Medical College and Hospital)
- MoU with Sudbury Hospital, Canada for anti-cancer research (MNR College of Pharmacy)
- MoU with Rega Institute for Medical Research, Belgium for anti-HIV research (MNR College of Pharmacy)
- MOU with the University of Montana-USA - tDPT course. (MNR Sanjeevani College of Physiotherapy).
- MOU with Wadhwani Operating Foundation, California, USA a California- (MNR College of Pharmacy)
- MoU with Tufts University, USA (MNR Dental College and Hospital)
- MoU with Cardinal Stritch University, Wisconsin, USA (MNR Dental College and Hospital and MNR-FRI)
- MoU with AIMST University, Malaysia (MNR Dental College and Hospital)
- MoU with PUSAN National University, South Korea (MNR Dental College and Hospital)
- MoU with Charles University (Czech Republic) (MNR Dental College and Hospital)

In addition to the above MoUs with foreign universities, the proposed DTBU, in pursuit of its academic and research excellence, wishes to foster collaborations and partnerships with the following potential national and international universities/institutes/organizations for carryout research activities in the unique programmes proposed.

1. Food and Agriculture Organisation (FAO) of the United Nations, Italy, Rome
2. Wageningen University and Research Center, Wageningen, The Netherlands
3. Technological University, Munich, Germany
4. UNESCO-IHE, Institute for Water Education, Delft, The Netherlands
5. Texas A&M University, College Station, Texas
6. Indian Institute of Technology, Kharagpur, West Bengal
7. Indian School of Business, Hyderabad
8. NALSAR University of Law, Hyderabad
9. ICAR-Central Institute of Agricultural Engineering, Bhopal, MP
10. Tamil Nadu Agricultural University, Coimbatore, TN

Existing National Collaborations

- MOUs with the Indian Institute Of Technology (IIT), Hyderabad (MNR Medical College and Hospital, MNR College of Pharmacy, MNR Homoeopathic Medical College and Hospital, MNR Dental College and Hospital)
- MoU with Birla Institute of Technology and Science (BITS), Pilani , Hyderabad Campus for anti-tubercular research (MNR College of Pharmacy)
- MoU with ICRISAT, Hyderabad (MNR Dental College and Hospital, MNR Homoeopathic Medical College and Hospital and MNR-FRI)
- MoU with VFSTR- Deemed to be University, Guntur, AP (MNR-FRI)
- MoU with CSIR-IICT, Hyderabad (MNR Dental College and Hospital)
- Developing diagnostic kits as a part of the Prime Minister Scholarship program MOU between IITH and MNRET is being made.
- Collaboration with India Knowledge Park (IKP), Hyderabad. (MNR Medical College and Hospital, MNR Dental College and Hospital and MNR-FRI))
- Collaboration with CCMB, Hyderabad. (MNR Medical College and Hospital, MNR Dental College and Hospital)
- Collaboration with Hyderabad Central University. (MNR Medical College and Hospital)
- Collaboration with NITK, Surathkal, Karnataka. (MNR Medical College and Hospital)
- Collaboration with Biosatva Technologies (Industry-Academia partnership). (MNR Medical College and Hospital)
- Collaboration with Genomix Molecular Diagnostics (Industry-Academia partnership). (MNR Medical College and Hospital and MNR-FRI)
- Collaboration with SANOFI PASTEUR / SHANTHA BIOTECH. (MNR Medical College and Hospital)
- MoU with WE-HUB, Government of Telangana, Hyderabad (MNR Dental College and Hospital and MNR-FRI)

19. The University Open to All Policy

The DTBU adopts a uniform policy for admissions based on merit without any discrimination and open to all persons of either region, religion, sex, caste, creed, race, class or place of birth. The University maintains an All- India character and provides merit based admissions in a fair and transparent manner. Admissions to various courses shall be open to Indian citizens, Non-Resident Indians, Persons of Indian Origin. The University shall also admit foreign students as per the Government of India and State Government guidelines. It shall not be lawful for the Institution deemed to be University to adopt or to impose on any person, any test whatsoever or religious belief or profession in order to entitle him or her to be appointed as a faculty member of the institution deemed to be University or to graduate there or to enjoy or exercise any privilege thereof. Provided that nothing in this section shall be deemed to prevent the institution deemed to be University from making special provision for the employment or admission of women, persons with disabilities, or of persons belonging to the weaker sections of the society and, in particular, of the Scheduled Castes, Scheduled Tribes and the other socially and educationally backward classes of citizens.

20. Reservation Policy

The proposed institution deemed to be university shall implement the policy on reservation in admissions and recruitment in accordance with the provisions of the Constitution of India and any Act of Parliament for the time being in force and disclose all such information on its website. No person shall be excluded from any office of the institution deemed to be university or from membership of any of its authorities or from admission to any degree, diploma or other academic distinctions or course of study on the ground of sex, race, creed, class, caste, place of birth, religious belief or political or other opinion in order to entitle him/her to be admitted as a student or to hold any office or post in the institution deemed to be university or to qualify for any degree, diploma or other academic distinctions or to enjoy or exercise any privileges of the institution deemed to be university or any benefaction thereof.

21. Fee Structure and Policy

The UGC with a great Vision and Commitment for enhancing the quality higher educational opportunities and making them accessible to more number of students in India have issued the Notification with regulations to regulate in an orderly manner the process of declaration of an institution deemed to be university under “distinct category”. The MNR-HERA is a multi-disciplinary and multi-institutional holistic academy situated at Fasalwadi, Sangareddy District, Gr Hyderabad, Telangana. It aims to develop knowledge based creative individuals with intellectual curiosity and scientific temper to prepare them for the futuristic world meeting the 21st Century requirements. It envisages to employ Indian and Foreign nationals with exceptionally brilliant academic and research track records and high level of competence and institutional commitment.

The proposed institution deemed to be university is committed to fix the Fee for various new Certificate, Diploma, UG, PG and Ph D programmes offered by the University with full disclosure and

transparency as per the provision in Regulation No 24 (B) of the UGC Notification. The fee such as Tuition Fee, Examination Fee, Special fee and all other Fee are subject to revision and may not be covered in the prospectus/website, as these are dynamic. The general guidelines on costs of Faculty including non-teaching staff, salary structure, teacher-student ratios prescribed by the relevant regulatory bodies, construction, operation and maintenance charges of buildings and costs of infrastructure and equipment, books and journals, computers, software, advertisement charges, legal charges, income and expenses balance on an annual basis etc have been kept in view while fixing the Fee. The Fee shall be so fixed that it would not impede student's education and at the same time it takes care of the University/School's smooth operation, while imparting quality education in the professional courses with high academic standards in Teaching-Learning and Research in the University and the Fee should be sufficient for generating resources for meeting the capital and recurring expenditure of the University.

The proposed institution deemed to be university shall abide by all the following regulations as provided in Regulation 24 (B) of the UGC Notification.

- (1) The Institution deemed to be University shall not resort to collection of any kind of Donation or capitation fee in whatever nomenclature or form, either directly or indirectly.
- (2) The institutions deemed to be Universities shall follow the rules and regulations regarding fee structure, number of seats, etc., issued by the relevant statutory bodies and in case an institution deemed to be University offers different courses which come under the regulatory ambit of different statutory bodies, namely the University Grants Commission, the All India Council of Technical Education, National Medical Council etc., the rules and regulations regarding fee structure, number of seats, etc., issued by such statutory body concerned shall be applicable.
- (3) The fee shall be fixed transparently, keeping in view non-profiteering or non-commercial aspects.
- (4) The fee shall be collected as declared in the prospectus of the institution deemed to be University and with a proper receipt for such payment and the prospectus shall also state that donation or capitation fee in whatever nomenclature or form, either directly or indirectly, shall not be collected from the student or parent and in case of any grievance, the student or parent may submit their complaint to the institution deemed to be University.
- (5) The institution deemed to be University may provide fee concession or scholarships or may allocate some seats to meritorious students belonging to socially and economically deprived groups of the society.
- (6) The institution deemed to be University shall abide by all the University Grant Commission notifications, guidelines regarding the refund of fees and return of original certificates, as may be issued from time to time.
- (7) Every institution deemed to be University shall maintain the records of the entire process of selection of candidates, exhibit such records on its website, and preserve such records for a minimum period of five years.
- (8) The institution deemed to be University shall make available the prospectus on its website at least sixty days before the commencement of admissions, including fee structure, refund policy, number of seats in a programme, eligibility qualifications, admission process, etc.
- (9) The institution deemed to be University shall not retain any original certificates of the students, faculty members, and staff.

22. Human Resources Policy and Grievance Redressal Policy

The Institution deemed to be university shall formulate the following policies for the benefit of staff and students and for effective and smooth running of the institution and place before the Executive Council for approval and implementation.

(a) Human Resources Policy

The proposed institution deemed to be university recognises the importance of the contributions of all officers, staff and employees in its overall growth and development and treats the individuals fairly, equally and consistently in a transparent and widely acceptable manner in all matters of human resources management such as recruitment, compensation, retention, promotion, welfare, training and development. The human resources management policies set out obligations and standards of behaviour and disciplinary procedures and hence constitute an important component of any organisational management system. The university believes in strong employer-employee relationships required in an organization with human touch for enhancing the productivity. The following policies will be made which are simple, precise and clear without any ambiguity for the mutual benefit of the organisation and all staff.

1 General Policies

- 1.1 Appointments Policy
- 1.2 Attendance Policy
- 1.3 Holidays Policy
- 1.4 Leaves Policy
- 1.5 Equal Employment Opportunities Policy
- 1.6 Grievance Redressal Policy
- 1.7 ID Cards and Dress Code Policy
- 1.8 Housing Policy
- 1.9 Travel & Transportation Policy

2 Performance Management System Policy

- 2.1 Scope of Performance Appraisal
- 2.2 Appraisal Ratings
- 2.3 Appraisal Forms
- 2.4 Reward Mechanism

- 3 Compensation Policy**
- 4 Employee Separation Policy**
 - 4.1 Voluntary Separation
 - 4.2 Involuntary Separation
 - 4.3 Notice period
 - 4.4 No Dues Clearance
 - 4.5 Full & Final Settlement
 - 4.6 Relieving / Experience Letter
- 5 Promotions / Increments Policy**
- 6 Superannuation / Retirement Policy**
- 7 Regularisation / Confirmation Policy**
- 8 Resolution of Disputes, Disciplinary Actions and Legal Jurisdiction**

(b) Grievance Redressal Policy

The Institution deemed to be University shall establish a grievance redressal mechanisms for dealing with grievances or complaints, if any, from teaching staff, non-teaching staff, administrative staff and other employees of the University. For this purpose, there shall be a Grievance Redressal Committee (GRC) constituted by and directly under the Vice-Chancellor. The GRC will be headed by a Senior Dean of the Schools. It consists of senior Faculty from each School of the University, representative from HR wing, the local Station House Officer (depending on the severity of the case) and a Deputy/Assistant Registrar who will act as the Secretary for the Committee.

The grievance may be any kind of discontent or dissatisfaction or negative perception arising out of anything connected with University that a staff member thinks or even feels, is unjust, unfair or inequitable. Staff refers to all academic, non-academic, faculty, full time, part time, teaching associates/assistants, tutors and supporting staff. The staff may note that, while this mechanism allows all staff members to voice their concerns in an open manner, it is imperative that the complainant exercises due diligence and care in deciding whether it qualifies as a grievance serious enough to be brought to the notice of the GRC.

The following procedure is usually adopted

- (1) Any aggrieved staff member may submit an application giving all details of the grievance with supporting documents to the HoD or Dean as the case may be in case of employees working in Schools and to the Registrar in case of employees working in administrative office and other wings of administration.

- (2) In case of teachers, the grievances will be settled in the first instance by the Dean of the School.
- (3) In case of non-teaching staff, the grievance will be settled in the first instance by the Head of the concerned Department.
- (4) In case the grievance remains unattended at the level of the Department or School as the case may be, or the employee is not satisfied with the outcome, he/she may represent his/her case to the Registrar through the Dean of the School who will refer the case to GRC.
- (5) Upon receipt of the complaint, the Secretary of the Committee will send an acknowledgement to the complainant.
- (6) The date of Committee meeting/Hearing shall be communicated to the complainant under intimation to the Registrar.
- (7) The Complainant may also appear in person, if required
- (8) The GRC shall ensure speedy disposal of every application within time.
- (9) On conclusion of the proceedings, the GRC shall pass such an order as it may deem fit to redress the complaint.
- (10) Re-Appeal: The aggrieved person(s) who are not satisfied with the decision of the GRC may appeal to the Appeal Committee headed by Vice-Chancellor and consisting of the Registrar and Director (HRM).
- (11) The decision of the Appeal Committee shall be final and there shall be no further appeal in the matter.
- (12) In case the complaint is made against a member of the GRC or the Appeal Committee, the concerned member will be barred from participating in any proceedings of the case till the case is closed.
- (13) The GRC will recommend appropriate.
- (14) The policy and procedure mentioned above is subject to review/amend/delete in part or in full from time to time at the sole discretion of the Vice-Chancellor/Chancellor.

23. Rules, Regulations and Committees

The authorities namely the Academic Council and the Executive Council of the institution deemed to be university shall make the following Regulations and Committees consistent with the UGC Regulations for conduct of business of each such authority and committees constituted by each such authority.

Regulations

- (1) Academic Regulations
- (2) Examinations Regulations
- (3) Students Hostel Regulations
- (4) Students Disciplinary Regulations
- (5) Code of Conduct for Teaching and Non-Teaching Staff
- (6) Transport Regulations
- (7) Any other Regulations for smooth and effective functioning

Committees

For smooth and effective functioning of the University, there shall be the following committees constituted by the authorities and as approved by the Executive Council.

- (1) Finance Committee
- (2) Standing Committee to the Academic Council
- (3) IQAC Committee
- (4) Admissions Committee
- (5) Grievance Redressal Committee
- (6) Tribunal of Arbitration
- (7) Anti-Ragging Committee
- (8) Purchase Committee
- (9) Student Welfare Committee
- (10) Women Empowerment Cell
- (11) Transport Committee
- (12) Library Committee

- (13) Canteen Committee
- (14) Hostel Committee
- (15) Training and Placement Committee
- (16) Convocation Committee
- (17) Internal Complaint Cell
- (18) Alumni Association
- (19) Any other committee as may be required in the university

The constitution of the above committees, terms of reference, powers and duties of the committees may be as specified in the Regulations made by the University Authorities or University Officers.

Annexures 1 – 9

(Schools, Scope and Objectives,
Structure of Course Curriculum for the
Programmes and Learning Objectives)

Annexure - 1

SCHOOL OF INTELLIGENCE AND COMPUTING

1. **Name of the School** : SCHOOL OF INTELLIGENCE AND COMPUTING
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)
3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)
4. **Scope and Objective**

School of Intelligence and Computing :

Higher Education by Virtue of its identity as Higher has to be innovative, creative, constructive and connective. The ultimate aim of Higher Education is not merely building knowledge, Feeling and Skill Bases but to provide skills needed to live fully meaningful, healthy, happy and peaceful life resonating with all, harmoniously, as a whole. Indian Education has its Identity. At present, it is India and India only which can unite fully all the continents through un-conditional love and affection. That is Our Higher Education Vision and Mission. The main objective of NEP 2020 is to establish India as “a global knowledge superpower” by providing quality education, by encouraging innovation and by cultivating sound research culture.

This policy is aligned to the SDG2030 and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities of each student. The Industry 4.0 has changed the landscape of hiring with creation of innovative job roles and skills. There has been renewed focus on infrastructure development which has highlighted the important sectors like renewable energy, smart cities, programs for rural development and airports and industry corridors. The impact of digital transformation has led to the increasing demand for specialized skills even in sectors like automotive and retail where they too are relying more on the Robotic Process Automation (RPA) driven strategies for gaining competitive edge. The gap between theoretical knowledge and the practice of skills is broadening. The industry can play a direct or indirect role in addressing the root cause for this spreading gap. Hence, ‘Industry Connect’ programs for students are emerging as useful and operational model that can bridge the gap between academic research and knowledge needs of working managers. Communication and technology has made it conceivable to rise above boundaries and join forces with partners across the globe. The first step to fostering professionals with a global standpoint is to implement world-class academic programmes and institutional infrastructure at a par with top global educational institutions.

The present curriculum lacks academic research and results in weak academic skills of the learners. It also poses challenges to teachers in terms of assumptions, goals and subject

demarcations. However, there are many more challenges facing the teachers as well as the learners in taking full benefit of the curriculum — limited availability of the resources, lack of clarity pertaining to reforming the curriculum to meet the needs of the learners, outdated skills and knowledge and limited scope for upgrading the skills. A mismatch between the teacher’s residual ideologies and innovation in curriculum needs to be addressed so as to meet the learning requirements of the 21st century learners.

In 21st century, the curriculum should focus on the following components to meet the requirements of the students in the context of core academic subjects: construction of knowledge, critical thinking, problem solving, innovative skills, media and communication, information and communication technology and real life experience. The curriculum should strengthen the learner’s ability to construct, think clearly and rationally about what to do and believe. The learner should be in a position to define a problem; to determine the cause of the problem; to identify, to prioritize, and to select alternatives for a solution and to implement a solution to their life.

The instructional framework should enable all learners to be successful. The solution lies in Universal Curriculum Design, which offers options that enable learners with varying needs and preferences to access and engage with learning materials. This concept could be used for any subject provided it focuses on three core principles namely— opportunity for multiple means of presentation, multiple means of action and expression and lastly, providing multiple means of engagement.

The goal is for every student, whether they have skills which needs to be nurtured, special needs, typical or advanced or to learn in their own style. This design of learning should encourage those skills which would enable the learner to survive in the 21st century world, learning the problem solving skills, critical thinking, analyzing, interpreting, evaluating, summarizing and synthesizing information. These are the skills which give students the opportunity to be successful.

Unfortunately, students are still a part of the standardized curriculum and are being taught through conventional methods which is based on one-size-fits-all pace in most of the established institutes. The advent of the National Education Policy, 2020 highlighted the need for changing current curriculum by modifying and bringing about a change in terms of its core essentials, more holistic approach, provision for critical thinking, discovery-based, discussion-based and analysis based learning.

Under these circumstances, the management of MNR Trust felt the need to commence a new university with the sole aim of producing graduates who will be successful in the 21st century and also occupy coveted positions worldwide. In this backdrop, the goals of the school of Intelligence and Computing are:

- To develop self-awareness and mindfulness amongst learners
- To inculcate skill of critical thinking and inquiry in the learners
- To enable learners to communicate effectively and express themselves freely and creatively
- To help learners to understand their expectations in relationships, develop empathy, and ensure healthy relationships with family, peers and teachers
- To enable learners to apply life skills to deal with stressful and conflicting situations around them
- To develop social awareness and human values in learners to engage in meaningful contribution in society
- To develop holistic approach to education in a universal context

In this scenario, it is envisaged that the graduates and post graduates will have ample employment opportunities in Information and Communication Technology departments of academic and research organizations, industries and many others as the university is situated in the proximity of the IT capital of India i.e. Hyderabad. The added advantage will be that the industry connect to the university is going to be very high due to its presence in Hyderabad.

5. Structure of the Course Curriculum

5.1 : 4-Year (8 Semesters) B.Tech/B.S (Hons) - Computer Science and Engineering (Major)

Artificial Intelligence and Machine Learning (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Python Programming	3
	2	Mathematics -1 (Linear Algebra and multivariate Calculus)	3
	3	Economics and Financial Management	3
	4	Basic Electrical Engineering	3
	5	Transform Techniques, Differential Equations, Numerical Methods	3
	6	Python Programming Lab	1.5
	7	Basic Electrical Engineering Lab	1.5
	8	C Programming	3
	9	Discrete Mathematics	3
	10	Physics	3
	11	Analog and Digital Electronics	3
	12	Data structures	3
	13	C & Data structures Lab	2
	14	Physics Lab	2
	15	Applied Statistics with R	3
	16	Problem solving using JAVA	3
	17	Design & Analysis of Algorithms	3
	18	Software Engineering	3
	19	Problem solving using JAVA Lab	1.5
	20	Database Management Systems	3
	21	Operating Systems	3
	22	Database Management Systems Lab	2
	23	Operating Systems Lab	2
	24	Computer Networks	3
	25	Cryptography & Network Security	3
	26	Cryptography & Network Security Lab	2
	27	Computer Networks Lab	2
	28	Deep Learning	4
	29	Fundamentals of AI	3
	30	Theory of Computations& Compiler Design	3
			80
B	Minor Stream Courses		
	1	Machine Learning	3
	2	Data Pre-processing and Exploration	3
	3	Artificial Neural Networks	3
	4	Cognitive Science and Analytics	3
	5	Compiler Design Lab	1.5
	6	Machine Translation	4
	7	Data Visualization Techniques	3
	8	Video Analytics	3
	9	Deep Learning Lab	2
	10	Machine Learning Lab	2
	11	Reinforcement Learning	3
	12	Natural Language Processing	3
	13	Program Electives (6 courses)	18
	14	Open Elective (3 courses)	9
			32

Learning Objectives and Outcomes

- The graduates will have acquired ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer based systems.
- Ability to analyse existing literature in computer science and suggest modification to algorithms and create new algorithms for solving engineering problems.
- Ability to apply the computing knowledge and propose solutions in domain such as health care, banking, finance, agriculture and other allied professions.
- Ability to design software systems based on interpreting available data in all societal and engineering domains and analyse their performance.
- Ability to analyse the problem, subdivide into smaller tasks with well-defined interface for interaction among components, and complete within the specified time frame and domain constraints.
- Ability to propose original ideas and solutions, culminating into a modern, easy to use tool, by a larger section of the society with longevity.
- Ability to design, implement, and evaluate secure hardware and integrate with software assuring quality and efficiency.
- Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science and engineering practices.
- Ability to modularize the problem statement, allocate to individuals and function effectively as an individual and a team player.
- Ability to communicate effectively the engineering solution to customers/users or peers by means of sufficient and necessary documentation.
- Ability to demonstrate knowledge and understanding of computer science and engineering principles and apply these to individual's and team work.
- Ability to understand contemporary issues and to get engaged in lifelong learning by independently and continually expanding knowledge and abilities.
- Ability to design and develop effective solutions based on state-of-the-art hardware and efficient software with a blend of creativity and performance.
- Ability to pursue higher studies in a multidisciplinary perspective leading to Masters and Research degrees.
- Ability to apply the Computer Science and Engineering concepts in different fields of Engineering culminating in successful careers and entrepreneurs with a focus on societal problem solving.

5.2 : 4-Year (8 Semesters) B.Tech/B.S (Hons) - Computer Science and Engineering (Major)

Artificial Intelligence and Data Science (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Python Programming	3
	2	Mathematics -1 (Linear Algebra and multivariate Calculus)	3
	3	Economics and Financial Management	3
	4	Basic Electrical Engineering	3
	5	Differential Equations, Numerical Methods	3
	6	Python Programming Lab	1.5
	7	Basic Electrical Engineering Lab	1.5
	8	C Programming	3
	9	Discrete Mathematics	3
	10	Physics	3
	11	Analog and Digital Electronics	3
	12	Data structures	3
	13	C & Data structures Lab	2
	14	Physics Lab	2
	15	Applied Statistics with R	3
	16	Problem solving using JAVA	3
	17	Design & Analysis of Algorithms	3
	18	Software Engineering	3
	19	Problem solving using JAVA Lab	1.5
	20	Database Management Systems	3
	21	Operating Systems	3
	22	Database Management Systems Lab	2
	23	Operating Systems Lab	2
	24	Computer Networks	3
	25	Cryptography & Network Security	3
	26	Cryptography & Network Security Lab	2
	27	Computer Networks Lab	2
	28	Deep Learning	4
	29	Fundamentals of AI	3
	30	Theory of Computations& Compiler Design	3
			80
B	Minor Stream Courses		
	1	Machine Learning	3
	2	Data Pre-processing and Exploration	3
	3	Artificial Neural Networks	3
	4	Stochastic Decision Making	3
	5	Compiler Design Lab	1.5
	6	Social Media Analysis	4
	7	Data Visualization Techniques	3
	8	Medical Data Analysis	3
	9	Deep Learning Lab	2
	10	Machine Learning Lab	2
	11	Reinforcement Learning	3
	12	Text Mining and Time Series Analysis	3
	13	Program Electives (6 courses)	18
	14	Open Electives (3 courses)	9
			32

Learning Objectives and Outcomes

- The graduates will have acquired ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer based systems.
- Ability to analyse existing literature in computer science and suggest modification to algorithms and create new algorithms for solving engineering problems
- Ability to apply the computing knowledge and propose solutions in domain such as health care, banking, finance, agriculture and other allied professions.
- Ability to design software systems based on interpreting available data in all societal and engineering domains and analyse their performance
- Ability to analyse the problem, subdivide into smaller tasks with well-defined interface for interaction among components, and complete within the specified time frame and domain constraints
- Ability to propose original ideas and solutions, culminating into a modern, easy to use tool, by a larger section of the society with longevity
- Ability to design, implement, and evaluate secure hardware and integrate with software assuring quality and efficiency.
- Ability to apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science and engineering practices.
- Ability to modularize the problem statement, allocate to individuals and function effectively as an individual and a team player
- Ability to communicate effectively the engineering solution to customers/users or peers by means of sufficient and necessary documentation
- Ability to demonstrate knowledge and understanding of computer science and engineering principles and apply these to individual's and team work
- Ability to understand contemporary issues and to get engaged in lifelong learning by independently and continually expanding knowledge and abilities.
- Ability to design and develop effective solutions based on state-of-the-art hardware and efficient software with a blend of creativity and performance.
- Ability to pursue higher studies in a multidisciplinary perspective leading to Masters and Research degrees.
- Ability to apply the Computer Science and Engineering concepts in different fields of Engineering culminating in successful careers and entrepreneurs with a focus on societal problem solving.

5.3 : 4-Year (8 Semesters) B.Tech/B.S (Hons) - Electronics and Communication Engineering (Major)

Internet of Things (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Mathematics-I (data analysis)	3
	2	Electronics Engg - I	3
	3	Switching Theory	3
	4	Electronics Lab - I	2
	5	Discrete Mathematics	3
	6	Physics - Material science	3
	7	Physics Lab	2
	8	Mathematics-III	3
	9	Embedded Systems	3
	10	Communication Systems	3
	11	Electronics Engg - II	3
	12	Communication Lab	2
	13	Electronics Lab - II	2
	14	Wireless Communications	3
	15	Microprocessors and Microcontrollers	3
	16	Data Communication and Networking	3
	17	Real Time Operating Systems	3
	18	IC Applications	3
	19	Microcontroller Lab	2
	20	IC Lab	2
	21	VLSI Design	3
	22	Communication Protocols	3
	23	Advanced Microcontrollers (Raspberry Pi)	3
	24	Managerial Economics and Financial Accountancy	3
	25	Networks Lab	2
	26	RF Engineering	3
	27	Low power VLSI	3
	28	5G Communication	3
	29	RF Lab	2
	30	Computer Architecture and Organization	3
			80
B	Minor Stream Courses		
	1	Problem Solving and Programming in Python	3
	2	Design Thinking	3
	3	Data Structures	3
	4	Programming Lab	2
	5	Object Oriented Programming (C++)	3
	6	Sensors for IOT	3
	7	OOPs lab	2
	8	Java Programming	3
	9	Operating Systems	3
	10	Design and Analysis of Algorithms	3
	11	IOT Lab	2
	12	Mobile Application Development	3
	13	Industrial IOT	3
	14	Professional Electives (6 Courses)	18
	15	Open Electives (3 Courses)	9
			32

Learning Objectives and Outcomes

- The Graduates will have achieved core competence in fundamentals of basic sciences required to formulate, analyze and solve interdisciplinary Engineering problems.
- The graduates will have acquired knowledge and skills in core areas of Electronics with Internet Technology, Telecommunication, Sensors, Cloud Computing and Data Analytics to provide efficient futuristic solutions.
- The Graduates will be enabled to effectively use Internet of Things (IOT) technology to solve real life multi-disciplinary problems that caters to the need of society and is economically feasible
- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multi disciplinary settings.

- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
- Design and develop components and systems for applications related to Electronics & Communication, Embedded systems, Sensors & Data Acquisition Systems, Cloud Computing and Information security in the context of Internet of things.
- Solve interdisciplinary problems in the fields such as Smart Agriculture, Telemetry, Health, Transportation, Energy, automation and others.
- Apply modern engineering tools to solve complex Electronics & Communication Engineering problems pertaining to Internet of things and sensors.

5.4 : 4-Year (8 Semesters) B.Tech/B.S (Hons) – Mechanical Engineering (Major)

Additive Manufacturing (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Introduction to Mechanical Engineering	3
	2	Design Thinking	3
	3	Engineering Graphics	3
	4	Workshop Practice	1.5
	5	Engineering Mechanics	3
	6	Design Studio	1.5
	7	Kinematics of Machinery	3
	8	Engineering Computation Lab (MATLAB)	1
	9	Transformation Techniques and Statistics	3
	10	Materials Engineering	3
	11	Mechanics of Solids	3
	12	Fluids and Thermal Engineering	4
	13	Basics of Electrical and Electronics Engineering	3
	14	Dynamics of Machinery	3
	15	Material Testing Lab	1
	16	Kinematics and Dynamics Lab	1
	17	Engineering Economics and Costing	3
	18	Electrical Machines and Controls	4
	19	Design of Machine Elements	3
	20	Materials, Energy Sources and Bonding Mechanisms	3
	21	Machine Tools & CNC Systems	3
	22	Mechanical Measurements & Metrology	4
	23	Product Design and Development	3
	24	CNC and Product Development Lab	2
	25	Mechatronics	3
	26	Operations Research	3
	27	Mechatronics and Automation Laboratory	1.5
	28	Computer Aided Engineering and Analysis Lab	2
	29	Robotics	3
	30	Industrial Engineering and Management	3
			80
B	Minor Stream Courses		
	1	Additive Manufacturing Processes	3
	2	AM with Polymers Lab	1
	3	CAD for Additive Manufacturing	3
	4	Lasers for Additive Manufacturing	3
	5	Design for Additive Manufacturing	3
	6	Rapid Tooling and Industrial Applications	3
	7	Manufacturing Science (Casting, Welding and Forming)	3
	8	Computer Aided Machine Drawing	1.5
	9	Department Electives (6 Courses)	18
	10	Open Electives (2 Courses)	6
			32

Learning Objectives and Outcomes

- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and mechanical engineering to the solution of complex engineering problems
- **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
- **Design/Development of solutions:** Design solutions for complex Additive manufacturing problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex mechanical engineering activities with an understanding of the limitations
- **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.
- **Environment and sustainability :** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
- **Project management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

6. Employment Opportunities for the Graduates

B.Tech CSE, B.Tech CSE (AI&ML), B.Tech CSE (AI&DS) and B.Tech ECE (IoT), B.Tech (Mech) Additive Manufacturing graduates are in great demand now in India and abroad particularly in view of the 21st Century requirements in the fields of frontier and cutting edge technologies like CSE, AI&DS, AI&ML, IoT etc all over the World. They find employment either through campus placements or off-campus recruitments by reputed software and hardware national and multinational companies with highly lucrative salaries. Apart from this, they are recruited by state and central government departments and public sector undertakings like Electricity corporations, IT Departments at state and central level. Private sectors such as education, banks, rural development, healthcare organisations, manufacturing industries etc. have also high demand for these graduates. Premier organisations engaged in consultancy services, Information Technology, Robotics, Aviation industry, E-solutions employ these graduates and at times there is short fall of graduates. These graduates can also go for Indian Engineering Services for placements in Railways, Defense and other Central Government Departments. In recent times, engineering graduates are achieving UPSC Civil Services Exams and Group Services in the State Government. Those interested in academics can also pursue M.Tech/MS/ Ph. D in India and Abroad to find jobs in academic and research organizations/universities. In other words, Sky is the limit for employment opportunities for CSE and ECE graduates in India and also Globally. The University's Placement Cell will strive hard to facilitate placements and avenues for higher studies for the graduates as per their aspirations.

Annexure - 2

SCHOOL OF INDIAN KNOWLEDGE SYSTEMS

1. **Name of the School** : SCHOOL OF INDIAN KNOWLEDGE SYSTEMS
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered** : As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objective**

School of Indian Knowledge Systems

Indian Knowledge Systems (IKS) represent the collective wisdom of ancient India, rooted in spirituality, philosophy, sciences, arts, performing arts, music, Yoga, Vastu, Vedic sciences and social principles. From spiritual and philosophical insights to scientific discoveries, traditional medicine, arts, and social sciences, Indian Knowledge Systems encompass a wide range of disciplines that reflect the depth of human understanding and exploration. The IKS proposes to undertake a wide array of activities in diverse areas so that India can meet its future aspiration of positioning itself as Vishwa Guru, with particular emphasis on education, health, and the environment. The IKS aims to prepare earnest participants for a holistic life leading to the realization of their true potential and liberation of the Self as well.

These knowledge systems continue to inspire and shape various aspects of contemporary life and are a testament to the profound intellectual achievements of India's ancient civilizations. Preserving and promoting these invaluable traditions is essential not only for the preservation of cultural heritage but also for finding holistic solutions to the challenges faced by humanity in the modern world.

I - UG (Bachelor's degree)

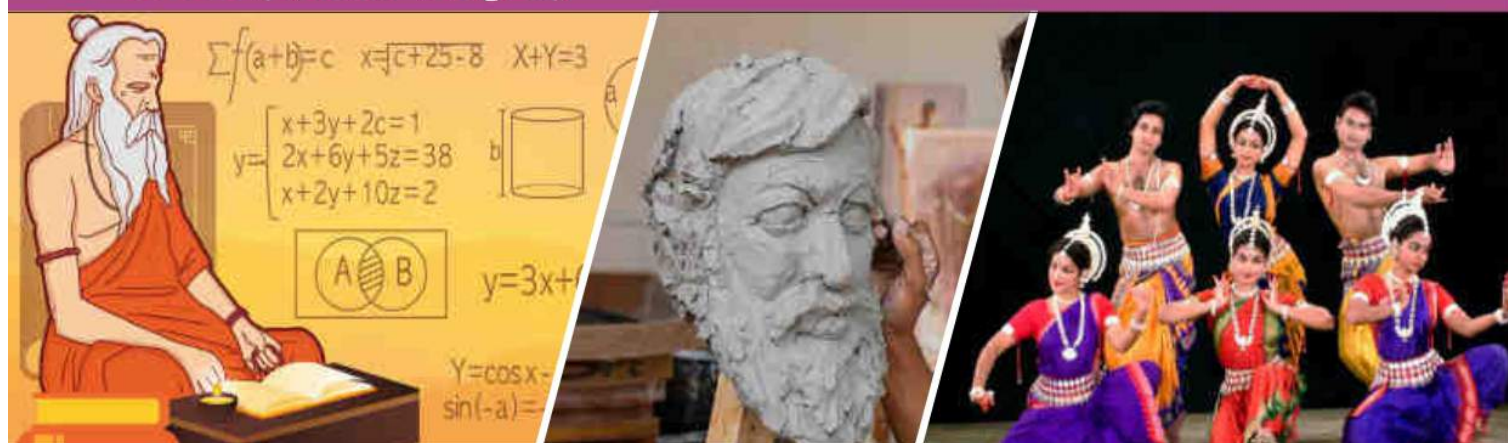


A Bachelor's degree provides students with a comprehensive understanding of India's rich cultural heritage, traditional wisdom, and knowledge systems that have evolved over centuries. This degree program aims to offer a holistic education that encompasses various aspects of Indian philosophy, arts, sciences, literature, language, and social practices. It can be quite diverse and rewarding, offering graduates

opportunities in various sectors. As the demand for cultural preservation, cross-cultural understanding, and sustainable practices grows, the relevance of Indian Knowledge Systems is becoming increasingly evident.

Career opportunities can be found in a wide array of exciting fields for individuals passionate about preserving and promoting India's cultural heritage. Whether in academia, the arts, wellness, or cultural conservation, graduates can find fulfilling careers that celebrate and contribute to the enduring wisdom of ancient Indian traditions.

II - PG (Master's degree)



A Master's degree provides students with advanced and specialized knowledge in various aspects of India's cultural heritage, traditional wisdom, and knowledge systems. This degree program aims to offer in-depth academic exploration and research opportunities in specific areas of Indian philosophy, arts, sciences, literature, language, and social practices. It equips individuals with specialized expertise in India's cultural heritage and opens doors to diverse and fulfilling career opportunities. Graduates are prepared to contribute to the preservation, research, promotion, and application of India's cultural heritage and traditional wisdom in diverse contexts and professional settings.

As the world becomes more interconnected, the demand for cultural preservation, cross-cultural understanding, and sustainable practices is growing, making the relevance of Indian Knowledge Systems increasingly evident on both national and international levels.

5.1 Structure of Course Curriculum for the Courses

3-Year (6 Semesters)- B.Sc/B.S (Vastu)-(Major)

AI and DS based Vastu (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Introduction to Vastu Shastra	3
	2	Principles of Vastu	4
	3	Vedic Mathematics and Geometry	3
	4	Architectural History and Styles	4
	5	Sanskrit and Vedic Literature	4
	6	Practical Vastu Lab	3
	7	Vastu Purusha Mandala	4
	8	Vastu Analysis and Remedies	4
	9	Vastu for Residential Spaces	4
	10	Vastu for Commercial Spaces	4
	11	Research Methodology	3
	12	Advanced Vastu Mathematics	3
	13	Environmental Sustainability in Vastu	3
	14	Practical Vastu Lab II	3
	15	Vastu for Health and Well-being	4
	16	Vastu for Energy and Environment	4
	17	Vastu and Interior Design	4
	18	Case Studies and Practical Applications	4
	19	Ethical and Professional Practices	3
			60
B	Minor Stream Courses		
	1	Artificial Intelligence based Vastu Sastra	
	2	Introduction to Interior Design	3
	3	Vedic Astrology Basics	3
	4	Vastu and Landscape Architecture	3
	5	Advanced Vastu Analysis	3
	6	Astrology and Vastu	3
	7	Data Science in Vastu	3
	8		3
			24

Learning Objectives and Outcomes

- Foundational Vastu Knowledge: Graduates will have a strong foundational understanding of Vastu Shastra principles, concepts, and history.
- Practical Vastu Application: Students will learn to apply Vastu principles to assess and design residential and commercial spaces.
- AI and DS Integration: Graduates will integrate AI and DS concepts into Vastu practices, leveraging technology to enhance Vastu analysis and design.
- Vastu Site Analysis: Students will gain expertise in conducting comprehensive site analyses to evaluate the Vastu compatibility of a location.

- **Traditional Building Practices:** Graduates will understand traditional architectural practices and construction techniques aligned with Vastu guidelines.
- **Interdisciplinary Perspective:** Students will foster an interdisciplinary approach by combining traditional Vastu knowledge with modern AI and DS methodologies.
- **Energy Flow Understanding:** Students will explore the flow of energy (prana) within living and working spaces and its impact on occupants.
- **Vastu Remedies:** Students will learn about Vastu remedies and adjustments to harmonize imbalances in spaces.
- **AI and DS Applications:** Graduates will apply AI and DS techniques to analyze spatial data, environmental factors, and energy flows within Vastu spaces.
- **Cultural and Philosophical Context:** Students will understand the cultural, philosophical, and spiritual significance of Vastu in different cultures.
- **Vastu Consultancy:** Graduates will develop skills to provide Vastu consultancy services to clients seeking Vastu-compliant designs.
- **Vastu and Sustainability:** Students will explore the integration of Vastu principles with sustainable and eco-friendly architectural practices.
- **History of Architecture:** Students will gain insights into the history and evolution of architecture in relation to Vastu.
- **Data-Driven Vastu:** Graduates will utilize data-driven insights to optimize Vastu designs for better harmony, health, and well-being.
- **Vastu and Interior Design:** Students will understand how Vastu principles can be incorporated into interior design and décor.
- **Communication Skills:** Students will enhance communication skills for effective interaction with clients, architects, and builders.
- **Vastu and Modern Architecture:** Graduates will explore the relevance of Vastu in contemporary architecture and design.
- **Professional Ethics:** Graduates will adhere to ethical standards when providing Vastu consultancy services.
- **Legal Compliance:** Graduates will be aware of legal and regulatory aspects related to Vastu in architectural practices.
- **Project Management:** Students will learn project management skills for Vastu assessment and design projects.
- **Professional Development:** Graduates will stay updated with the latest developments and trends in the field of Vastu.

These learning objectives and outcomes provide a unique and interdisciplinary framework for graduates of the program, equipping them with the knowledge and skills to apply traditional Vastu principles in conjunction with modern AI and DS techniques to create harmonious and data-informed living and working environments.

5.2 Structure of Course Curriculum for the Courses

3-Year (6 Semesters)- B.Sc/B.S Yogic Science -(Major)

AI and DS based Vastu (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Foundation of Yoga	4
	2	Yoga Practicum-I	2
	3	Introduction to Hatha Yoga and it's texts	4
	4	Yoga Practicum-II	2
	5	Human Anatomy and Physiology-I	4
	6	Human Anatomy and Physiology Practicum-I	2
	7	Yoga Practicum-III	2
	8	Human Anatomy & Physiology-II	4
	9	Human Anatomy and Physiology Practicum-II	2
	10	Yoga Practicum-IV	2
	11	Yoga and Holistic Health	4
	12	Methods of Teaching Yoga	4
	13	Yoga Practicum-V Teaching Practice	2
	14	Four Streams of Yoga	4
	15	Yoga Practicum-VI	2
	16	Basis of Yoga Therapy	4
	17	Yoga Practicum-VII	2
	18	Fundamentals of Biochemistry	4
	19	Biochemistry (Practicum)	2
	20	Basis of Indian Culture	4
	21	Yoga Practicum VIII – Case Study	2
	22	Yoga and Human Consciousness	4
	23	Psychology Practicum	2
	24	Yogic Management of Lifestyle related disorders	4
	25	Yoga and Human Values	4
	26	Yoga Practicum IX – Case Study Reports	2
	27	Applied Yoga	4
		Limited to	60
B	Minor Stream Courses		
	1	Application of Yoga (Generic Elective)	4
	2	Application of Yoga (Practicum) (Generic Elective)	2
	3	Tagore Studies	4
	4	Essence of Principal Upanishads	4
	5	Patanjali Yoga Darshana	4
	6	Computer Application (Practicum)	2
	7	Introduction to Yoga and Common Aliments (Generic Elective)	4
	8	Introduction to Yoga and Common Aliments (Practicum) (Generic Elective)	2
	9	Essence of Bhagavad Gita for Personality Development	4
	10	Yoga Psychology (Generic Elective)	4
	11	Yoga Psychology (Practicum) (Generic Elective)	2
	12	Introduction to AYUSH (Generic Elective)	4
	13	Introduction to AYUSH (Practicum) (Generic Elective)	2
	14	Fundamental of Naturopathy (Discipline Specific Elective)	4

15	Naturopathy (Practicum) (Discipline Specific Elective)	2
16	Introduction of Ayurveda (Discipline Specific Elective)	4
17	Ayurveda (Practicum) (Discipline Specific Elective)	2
18	Yoga and Mental Health (Discipline Specific Elective)	4
19	Mental Health (Practicum) (Discipline Specific Elective)	2
20	Yogic Diet and Nutrition (Discipline Specific Elective)	4
21	Nutrition (Practicum) (Discipline Specific Elective)	2
	Limited to	24

Learning Objectives and Outcomes

- **Foundational Yogic Knowledge:** Graduates will develop a strong foundation in the philosophy, history, and principles of yoga.
- **Yogic Breathing Techniques:** Students will explore various pranayama (breathing) techniques for improving respiratory health and emotional balance.
- **Meditation and Mindfulness:** Students will gain proficiency in meditation and mindfulness practices to promote mental clarity and inner peace.
- **Yogic Asanas :** Students will learn and master a wide range of yoga asanas (postures) for physical well-being and flexibility.
- **Anatomy and Physiology:** Graduates will understand the anatomical and physiological aspects of the human body as they relate to yoga practice.
- **Yoga Philosophy:** Graduates will study and contemplate yogic philosophy, including the Yoga Sutras and Bhagavad Gita.
- **Teaching Skills:** Graduates will develop the skills necessary to effectively teach yoga to individuals and groups.
- **Yoga for Special Populations:** Graduates will learn how to adapt yoga practices for individuals with different abilities, ages, and health conditions.
- **Yogic Diet and Nutrition:** Students will explore the principles of a yogic diet and nutrition for overall well-being.
- **Ayurveda Basics:** Students will understand the basics of Ayurveda and its connection to yoga for holistic health.
- **Yoga Therapy:** Graduates will familiarize themselves with yoga therapy techniques for addressing specific health issues.
- **Yogic Lifestyle:** Graduates will embrace and practice a yogic lifestyle, incorporating principles of simplicity, self-discipline, and non-violence.

- **Cultural Sensitivity:** Graduates will develop cultural sensitivity and respect for the origins and diversity of yoga traditions.
- **Research Skills:** Graduates will cultivate research skills to explore and contribute to the field of yoga studies.
- **Ethical and Professional Conduct:** Students will adhere to ethical standards and professional conduct in yoga teaching and practice.
- **Community Engagement:** Students will engage in community yoga outreach and service to promote yoga's benefits.
- **Personal Transformation:** Graduates will experience personal growth and transformation through the consistent practice of yoga.
- **Self-Reflection:** Graduates will encourage self-reflection and self-awareness through yoga and meditation practices.

These learning objectives and outcomes prepare graduates of the B.Sc/B.S program in Yogic Science to share the benefits of yoga with individuals and communities, promote holistic well-being, and contribute to the field of yoga studies and practice.

Annexure - 3

SCHOOL OF TECHNOLOGY-LED AGRICULTURE

1. **Name of the School** : SCHOOL OF TECHNOLOGY-LED AGRICULTURE
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objectives**

School of Technology-Led Agriculture

In tune with the Government of India's vision of recasting the country as a "knowledge economy" by making higher education a top national agenda, the agricultural higher education has to evolve in sync with the fast changing national and global scenario and facilitate human capacity for developing self motivated professionals and entrepreneurs. Accordingly the structure of the course curriculum of B.Sc.(Hons) Agriculture degree is so designed based on ICAR recommendations as to enrich the students with the knowledge of technology-led transformation of India's food and agriculture system and entrepreneurship skills for enhancing their employability & employment potential and, also enable them to become job-providers rather than job-seekers. The UGC and ICAR have declared the UG degrees in agriculture and allied sectors as "Professional Degrees". With the introduction of technology-led agriculture courses, more talented students will get attracted to agricultural higher education in the country raising the Gross Enrolment Ratio (GER) (presently less than 1% only for agricultural education) as per the visionary plan envisaged by NEP 2020.

Objectives

- a) To provide a strong foundation in agricultural and horticultural principles and practices to make students globally competitive.
- b) To integrate technology in agriculture to make it more automated for increasing productivity and profitability and more attractive to farmers.
- c) To bring in specialized courses into the course curriculum namely RS & GIS, Precision Farming, Hi-tech Cultivation, Specialty Agriculture, Renewable Energy, Artificial Intelligence, Applications of Robotics, UAVs, Bio-informatics, Nanotechnology, Agro-meteorology & Climate Change,
- d) To enhance the problem-solving skills with research bent of mind so that they are motivated to pursue research/ entrepreneurship development as a career option.
- e) To enables expertise on semi-urban agriculture and protected cultivation in the changing environment and demonstrate technology for income and employment generation.
- f) A sense of responsibility towards the use of scientific knowledge and technology integration in agriculture for the benefit of farmers.

5. Structure of Course Curriculum and Learning Objectives

5.1 Structure of Course Curriculum for Diploma in Agricultural Technology (Cereals, Pulses and Oil Seeds) (Telugu Medium)

First year			
S.No	Course No	Course title	Credit hours
I semester			
1	DA 101	Principles of Agronomy	4 (3+1)
2	DA 121	Soil chemistry and fertility	3 (2+1)
3	DA 131	Principles of Entomology and Productive Entomology	4 (3+1)
4	DA 151	Farm Power and Machinery	4 (2+2)
5	PE- 111	Physical Education & Yoga	1 (0+1*)
6	NSS-111	NSS	1 (0+1*)
Total			15 (10+5) + 2*
II Semester			
1	DA 102	Crop Production-I (Cereals)	3 (2+1)
2	DA 111	Basic Principles of Plant Breeding, Seed Production, Testing and Certification	4 (3+1)
3	DA 122	Manures and Fertilizers	3 (2+1)
4	DA 132	Pests of crops and their management	4 (3+1)
5	DA 171	Principles of Plant Pathology, Diseases of Crops and their Management	4 (3+1)
5	PE- 111	Physical Education & Yoga	1 (0+1*)
6	NSS-111	NSS	1 (0+1*)
Total			18 (13+5) + 2*
Second year			
I Semester			
1	DA 201	Crop Production-II (Pulses and Oilseeds)	3 (2+1)
2	DA 252	Land Surveying, Soil and water Engineering and Green house technology	3 (2+1)
3	DA 263	Communication Skills in English	1 (0+1)
4	PAMP	Participatory Agricultural Management Programme (Cereals, Pulses and Oilseeds)	12 (0+12)
Total			19 (4+14)

II Semester			
S.No	Course No	Course title	Credit hours
1	DA 241	Farm management, Agricultural cooperation, Entrepreneurship and Marketing	3 (2+1)
2	DA 253	Processing of Paddy, Pulses and Oilseeds	3 (2+1)
3	DA 254	Milling and Processing of Wheat, Maize and Coarse grains	3 (2+1)
4	DA 262	Introduction to Computer skills	1 (0+1)
5	DA 281	Food Science (Fundamentals and Microbiology)	3 (2+1)
6	DA 282	Food Quality Testing and Evaluation	3 (2+1)
7	DA 291	Agricultural Extension and Rural Development	3 (2+1)
		Total	19 (12+7)
		Grand total	67 (37+30) + 4*

Gradial

*Non-

5.2 Structure of course curriculum for Diploma in Agricultural Technology (Millets) (Telugu Medium)

First year			
S.No	Course No	Course title	Credit hours
I semester			
1	DA 101	Principles of Agronomy	4 (3+1)
2	DA 121	Soil chemistry and fertility	3 (2+1)
3	DA 131	Principles of Entomology and productive Entomology	4 (3+1)
4	DA 151	Farm Power and Machinery	4 (2+2)
5	PE- 111	Physical Education & Yoga	1 (0+1*)
6	NSS-111	NSS	1 (0+1*)
		Total	15 (10+5) + 2*
II Semester			
1	DA 102	Crop Production (Millets)	3 (2+1)
2	DA 111	Basic Principles of Plant Breeding, Seed Production, Testing and Certification	4 (3+1)
3	DA 122	Manures and Fertilizers	3 (2+1)

4	DA 132	Pests of crops and their management	4 (3+1)
5	DA 171	Principles of Plant Pathology, Diseases of Crops and their Management	4 (3+1)
5	PE- 111	Physical Education & Yoga	1 (0+1*)
6	NSS-111	NSS	1 (0+1*)
Total			18 (13+5) + 2*
Second year			
I Semester			
1	DA 201	Agricultural Meteorology and Land Use Systems	3 (2+1)
2	DA 252	Land Surveying, Soil and water Engineering and Green house technology	3 (2+1)
4	PAMP	Participatory Agricultural Management Programme (Millets)	12 (0+12)
Total			18 (4+14)
II Semester			
S. No	Course No	Course title	Credit hours
1	DA 241	Farm management, Agricultural cooperation, Entrepreneurship and Marketing	3 (2+1)
2	DA 253	Processing of Millets	3 (2+1)
3	DA 262	Introduction to Computer skills	1 (0+1)
4	DA 263	Communication Skills in English	1 (0+1)
5	DA 281	Food Science (Fundamentals and Microbiology)	3 (2+1)
6	DA 282	Food Quality Testing and Evaluation	3 (2+1)
7	DA 291	Agricultural Extension and Rural Development	3 (2+1)
Total			17 (10+7)
Grand total			68 (37+31) + 4*

5.3 4-Year (8 Semesters) B.Sc/B.S (Hons) Agriculture -(Major)

Artificial Intelligence and Computer Applications (Minor)

A	Major Stream courses (Core)	No of Credits
1	Technological Interventions in Agriculture	3(2+1)
2	Agricultural Heritage	1(1+0)
3	Agricultural Microbiology	2(1+1)
4	Fundamentals of Soil Science	3(2+1)
5	Fundamentals of Agricultural Economics	2(2+0)
6	Fundamentals of Crop Physiology	2(1+1)
7	Fundamentals of Entomology	3(2+1)
8	Fundamentals of Horticulture	2(1+1)
9	Fundamentals of Agronomy	3(2+1)
10	Mathematics in Agriculture	2(2+0)
11	Fundamentals of Plant Biochemistry and Biotechnology	3(2+1)
12	Livestock and Poultry management	3(2+1)
13	Principles of Food Science and Nutrition	2(2+0)
14	Introduction to Forestry	2(1+1)
15	Introductory Agro-meteorology & Climate change	2(1+1)
16	Fundamentals of Genetics	3(2+1)
17	Soil and Water Conservation Engineering	2(1+1)
18	Introduction to Plant Pathogens	3(2+1)
19	Crop Production Technology-I (Cereals, Millets & Pulses)	3(2+1)
20	Irrigation Water Management	2(1+1)
21	Fundamentals of Plant Breeding	3(2+1)
22	Insect Ecology & Concept of IPM	2(1+1)
23	Production Technology for Vegetables and Spices	2(1+1)
24	Production Technology for Fruit and Plantation Crops	2(1+1)
25	Crop Production Technology -II (Oilseeds, Commercial Crops & Fibre Crops)	3(2+1)
26	Principles of Seed Technology	3(1+2)
27	Manures, Fertilizers and Soil Fertility Management	3(2+1)
28	Protected Cultivation and Secondary Agriculture	2(1+1)
29	Principles of Plant Pathology	2(1+1)
30	Production Technology for Ornamental Crops, Medicinal & Aromatic Plants and Landscaping	2(1+1)
31	Rainfed Agriculture & Watershed Management	2(1+1)
32	Practical Crop Production –I (Kharif Crops)	1(0+1)
33	Crop Improvement-I (Cereals, Millets, Pulses & Oilseeds)	2(1+1)
34	Management of Problem Soils	2(1+1)
35	Pests of Crops and Stored Grains and their Management	3(2+1)
36	Renewable Energy and Green Technology	2(1+1)
37	Diseases of Field Crops and their Management	2(1+1)
38	Principles of Integrated Pest and Disease Management	2(1+1)
39	Environmental Studies & Disaster Management	2(1+1)
40	Practical Crop Production – II (Rabi crops)	1(0+1)
41	Crop Improvement-II (Fibre, Sugar, Starches, Vegetables, Fruits and Flowers)	2(1+1)
42	Pests of Horticultural Crops and Beneficial Insects	3(2+1)
43	Diseases of Horticultural Crops and their Management	3(2+1)
44	Post-harvest Management and Value Addition of Fruits and Vegetables	2(1+1)
		80

B	Minor Stream Courses		
	1	Artificial Intelligence and Digital Agriculture	2(1+1)
	2	Robotic Crop Harvesting Technologies	2(1+1)
	3	Artificial Intelligence in Agricultural Operation Automation	2(1+1)
	4	Robotics and AI in Row Crop Agriculture	2(1+1)
	5	Artificial Intelligence Application in Irrigation Water Manageent	2(1+1)
	6	Application of Drones in Agriculture	2(1+1)
	7	Programming Languages and Data Structures	2(1+1)
	8	Predictions in Changing Climate through Statistical and Machine Learning Approcahes	2(1+1)
	9	Agricultural Finance and Cooperation	2(1+1)
	10	Farm Mechanisation	2(1+1)
	11	Fundamentals of Agricultural Extension	3(2+1)
	12	Agricultural Marketing, Trade & Prices	3(2+1)
	13	Fundamentals of Agronomy	3(2+1)
	14	Remote Sensing and GIS applications in Agriculture	3(2+1)
	15	Statistical Methods	2(1+1)
	16	Agri Informatics	2(1+1)
	17	Geo-informatics and Nano-technology for Precision Farming	2(1+1)
	18	Farming Systems, Organic Farming and Sustainable Agriculture	3(2+1)
			32

Learning Objectives and Outcomes

- The graduates will have acquired knowledge about the technological interventions using cutting edge technologies in Agriculture to make the present day agriculture more productive and profitable to farmers
- The students will be taught the importance of Technology-Led Agriculture to meet the requirements of increased food production with reduced cost of cultivation
- With their basic knowledge on agronomical, soil science, plant physiological, entomological and pathological aspects of agricultural and horticultural crops, they will be taught where Artificial Intelligence, Machine Learning and Robotics can be applied for doubling the income to the Farmers with reduced dependency on Farm Labour
- With use of cutting edge technologies, the crop period will also be reduced by few days which will have tremendous effect on increase in yields and reduction of harvest losses
- The graduates will have capability to use Drones for agricultural applications reducing the labour requirements and cost of cultivation
- The students will get familiarized with the application of Artificial Intelligence and Data Science in detecting the plant diseases and insects at the appropriate time for effective control measures
- The students will understand the basic concepts of engineering principles applied to agriculture to reduce the cost of cultivation
- The knowledge of the Principles of Remote Sensing and GIS applications will enable the students to assess the crop irrigation water requirements

- The students will have gained knowledge on importance and application of Machine Vision in agricultural mechanization
 - The graduates will have acquired knowledge to apply Artificial Intelligence in Irrigation Water Management for water productivity
 - IoT, Big Data and AI in agricultural food application
 - The students will be able to identify, categorise and predict droughts in changing climate situation through statistical and machine learning approaches
 - The students will know the advancements in Robotic crop and fruit harvesting technologies
 - The students will understand the Robotics and AI in Row Crop Agriculture
 - The students will have attained the capability to use Market Intelligence to predict the prices of agricultural products for the benefit of Farmers
 - With more stress on value added courses on practical crop production and skill enhancement courses in the curriculum, the students will be able to make agriculture as a business enterprise
 - In addition to their regular curriculum, the students will be taught multi-disciplinary courses
- The ultimate objective is to make the graduates and post graduates 21st Century Agriculturists meeting the strategic needs of the country in Agriculture Sector

6. Employment Opportunities for Technology oriented Agricultural Graduates

Agriculture is considered the country's spine. By attaining this degree (B.Sc (Hons) Agriculture), you will be contributing to a better way of life. When you chose agriculture as your career, you will have a bright future ahead. Agricultural graduates find jobs in state and central government agriculture and allied departments, as agricultural officers, agricultural extension officers, seed certification officers and in private companies related to pesticides, fertilizers, micro-irrigation, seed and sugar industry, food processing industry, as agricultural field officers or rural development officers and credit officers in nationalised and private banks with very lucrative salaries. Agricultural graduates can also pursue M.Sc/MS and Ph.D degree in India and abroad to gain eligibility for pursuing teaching/research oriented jobs. Graduates with higher academic qualifications can get opportunities to work in Universities, ICAR Institutes and International Institutions. Agricultural graduates can go for higher studies in foreign countries namely USA, Canada, Germany, France, The Netherlands, Australia and subsequently can seek high profile jobs in those countries. Other avenues to join are ware house managers, estate managers, horticultural consultants, agricultural land development consultants, agricultural Journalists, NGOs and landscaping managers. Many upcoming areas where agricultural graduates can excel are Artificial Intelligence, Drone Technology, Nanotechnology, Vertical Agriculture and E-commerce to meet the 21st century requirements Globally. If interested, after graduation they can go for Civil Services, Forest services at Central level and Group Services at State level for challenging administrative jobs. Many opportunities are also opening up in new arenas like Precision agriculture, Smart Agriculture and IT in agriculture. The University's Placement Cell will strive hard to facilitate placements and avenues for higher studies for the graduates as per their aspirations.

Annexure - 4

SCHOOL OF ENERGY STUDIES

- 1. Name of the School : SCHOOL OF ENERGY STUDIES**
- 2. Departments : As provided in Section 10 of the Detailed Project Report (DPR)**

- 3. Courses offered: As provided in Section 10 of the Detailed Project Report (DPR)**

- 4. Scope and Objective**

School of Energy Studies

Future development is limited and constrained by the growing population, depletion of natural resources, and global climate change. The challenge of reconciling economic growth, social development, and preservation of the natural environment is widely recognized as the single greatest issue facing the global community. Sustainable development requires active and knowledgeable citizens, as well as caring and informed decision-makers capable of making the right choices regarding the complex and interrelated economic, social, and environmental issues that human society is currently facing. With the establishment of the School of Environment and Sustainability, the University will be able to carryout educational and research programmes in a multi-disciplinary and inter-disciplinary mode which will attract talented students, distinguished faculty, and researchers passionate about environmental studies and sustainability.

The School of Environment and Sustainability fosters curriculum, research, and collaborations of the highest standards, and with a global perspective, through faculty drawn from around the world. The school provides interdisciplinary environment and sustainable development education through innovative teaching, impact-driven research, and practice-based engagement. The aim is to allow students to widen their horizon and develop skills required for solving the complex environment and sustainability challenges of the present and future times.

The graduates and post graduates will have ample employment opportunities in environmental and green energy initiatives of public and private organizations, environmental consultancies, academic and research organisations, industries, distilleries, fertilizer plants, NGOs, pollution control boards, Industries and Firms and many others.

5. Structure of Course Curriculum

4-Year (8 Semesters) B.Tech/B.S (Hons) - Energy and Environmental Engineering-(Major) Sustainable Development (Minor)

A	Major Stream courses (Core)		No of Credits
	1	Heat and Mass Transfer	1+1
	2	Engineering Physics	2+1
	3	Engineering Drawing and Graphics	0+1
	4	Computer Programming and Data Structures	2+1
	5	Workshop Technology	2+1
	6	Engineering Mathematics (3 courses) of 2+1 each	6+3
	7	Biochemistry of Macromolecules	2+1
	8	Engineering Mechanics	2+1
	9	Electrical Engineering	2+1
	10	Thermal Engineering	2+1
	12	Field Surveying and Leveling	2+1
	14	Mechanics of materials	2+1
	15	Kinematics of Machines	2+1
	16	Electronics and Instrumentation	2+1
	17	Building Materials, Construction and Estimation	2+1
	18	Hydraulics and Hydraulic Machinery	2+1
	19	Remote Sensing and GIS in Environmental Applications	2+1
	20	Numerical Methods for Engineering Applications	2+1
	22	Design and Computer Aided Drawing of Machine Elements	1+2
	23	Heat Power Engineering	2+1
	24	Process Control Systems	2+0
	25	Fundamentals of Refrigeration and Air Conditioning	2+1
	26	Engineering Statistics	2+1
	27	Thermo Chemical Conversion Technology	2+1
	28	Power Plant Engineering	2+0
	29	Water Pollution Control Engineering	2+1
	31	Environmental Transport Process	2+0
	32	Design of Bioreactors	2+0
		Total	80
B	Minor Stream Courses		
	1	Sustainability and Green Engineering	2+0
	2	Environmental Sciences and Disaster Management	2+1
	3	General Microbiology	2+1
	4	Biochemical Engineering	2+1
	5	Forest Energy Resources	2+0
	6	Fossil Fuel Engineering	2+0
	8	Biochemical Conversion Technology	2+1
	10	Solar Energy Engineering	2+1
	12	Public Health Engineering	2+1
	13	Wind Energy Systems	2+1
	14	Energy Auditing and Management	2+1
	15	Emerging Alternate Energy Conversion Systems	2+0
	16	Wastewater Engineering	1+1
	17	Municipal Solid Waste Management Engineering	2+0
	18	Air Pollution Control Engineering	2+0
	19	Agricultural Finance, Banking and Co-operation	1+1
		Total	32

Learning Objectives and Outcomes

- **Foundational Knowledge in Energy and Environmental Engineering:** Graduates will have a strong foundation in energy systems, environmental science, and sustainable engineering practices.
- **Expertise in Sustainable Development:** Students will gain in-depth knowledge of sustainable development principles, including social, economic, and environmental sustainability.
- **Design Sustainable Energy Systems:** The graduates will design and implement sustainable energy systems that reduce environmental impact and promote resource efficiency.
- **Interdisciplinary Understanding:** Students will understand how energy and environmental engineering intersect with sustainable development, considering the global impact of engineering decisions.
- **Problem-Solving Skills:** Graduates will develop strong problem-solving skills, enabling them to design and implement sustainable solutions for complex energy and environmental challenges.
- **Environmental Impact Assessment:** Graduates will be proficient in conducting environmental impact assessments and evaluating the sustainability of engineering projects.
- **Renewable Energy Technologies:** Graduates will have knowledge of various renewable energy technologies, such as solar, wind, and hydroelectric, and their applications.
- **Energy Efficiency:** Graduates will master the principles of energy efficiency and sustainable energy management in engineering.
- **Resource Management:** Graduates will manage resources efficiently in engineering projects, including energy, water, and materials.
- **Climate Change Mitigation:** Graduates will address climate change challenges through engineering solutions that reduce carbon emissions and environmental impact.
- **Sustainable Infrastructure Design:** Graduates will be skilled in designing sustainable infrastructure, considering factors like resource efficiency and ecological impact.
- **Project Management:** Graduates will learn project management skills to plan, execute, and deliver sustainable engineering projects effectively.
- **Environmental Regulations:** Students will understand and adhere to environmental regulations and compliance standards in engineering practice.
- **Environmental Remediation:** Graduates will develop skills in environmental remediation and pollution control techniques.
- **Ethical and Social Responsibility:** Graduates will apply ethical principles and consider social responsibility in engineering decisions, promoting equitable and sustainable development.

These learning objectives and outcomes provide a comprehensive framework for graduates of the program, equipping them with the knowledge and skills needed to excel in Energy and Environmental Engineering with a Major in Energy and Environmental Engineering and a Minor in Sustainable Development. Graduates will be well-prepared to address complex energy and environmental challenges while promoting sustainable development practices.

Annexure - 5

SCHOOL OF COMMUNITY WELLNESS AND LIFESTYLE MANAGEMENT

1. **Name of the School** : School of Community Wellness and Lifestyle Management
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objectives**

School of Community Wellness and Lifestyle Management

The Community Wellness and Lifestyle Management School aims to promote holistic well-being and healthy living within communities. The scope of this educational institution encompasses various aspects of physical, mental, emotional, and social wellness. Its objective is to equip students with the knowledge and skills to become wellness advocates and create positive impacts in their communities. By emphasizing preventive healthcare, nutrition, fitness, stress management, and community engagement, the school seeks to empower individuals to lead healthier lives and inspire wellness initiatives at the grassroots level. Through a comprehensive curriculum and practical experiences, the school aspires to cultivate a generation of professionals dedicated to improving community health and quality of life.

The scope for professionals in this field is expected to grow. Here are some reasons why:

1. **Increasing Health Concerns:** With the rise in chronic health conditions such as obesity, diabetes, cardiovascular diseases, and mental health issues, there will be a greater emphasis on preventive approaches and lifestyle modifications. Professionals trained in community and lifestyle management will play a crucial role in designing and implementing effective interventions to address these health concerns.
2. **Population Aging:** As the global population continues to age, there will be a greater demand for health and wellness services aimed at enhancing the quality of life for older adults. Community and lifestyle management professionals can contribute to creating age-friendly environments, promoting active aging, and addressing the specific needs of older populations.
3. **Health Promotion and Disease Prevention:** Governments and healthcare systems around the world are increasingly recognizing the importance of health promotion and disease prevention. Lifestyle management professionals can contribute to public health initiatives, community-based programs, and policy development aimed at improving population health.

4. **Technology and Innovation:** Advancements in technology, such as wearable devices, mobile health applications, and telehealth services, will continue to influence lifestyle management practices. Professionals in this field will need to stay updated with the latest trends and integrate technology into their strategies.
5. **Workplace Wellness:** Many companies are investing in employee wellness programs to improve productivity, reduce healthcare costs, and enhance employee satisfaction. Community and lifestyle management experts can play a crucial role in designing and implementing workplace wellness initiatives.
6. **Global Health Challenges:** Emerging health threats, pandemics, and environmental issues will require a coordinated and community-based response. Professionals in community and lifestyle management can contribute to disaster preparedness, health crisis management, and sustainable living initiatives.
7. **Research and Evidence-Based Practice:** As the field of lifestyle management continues to evolve, there will be a growing need for evidence-based practices and research to support interventions and policy development. Professionals with advanced degrees in the field can contribute to cutting-edge research and advancements in the discipline.

Overall, community and lifestyle management courses are likely to remain relevant as societies continue to focus on improving public health, well-being, and sustainable living. The scope for professionals in this field will expand across various sectors, including healthcare, public health, corporate wellness, non-profit organizations, government agencies, and academia.

2-Year M.Sc (Community Wellness and Lifestyle Management)

Community and Lifestyle Management is an interdisciplinary field that focuses on creating and sustaining healthy, vibrant, and inclusive communities. A postgraduate course in this area aims to equip students with the skills and knowledge needed to effectively manage community programs, lifestyle initiatives, and social development projects.

The scope of such a course may include the following key areas:

1. **Community Development:** Understanding the principles and practices of community development, including community engagement, needs assessment, and capacity-building strategies.
2. **Public Health and Wellness:** Exploring concepts related to public health promotion, disease prevention, nutrition, physical activity, mental health, and well-being within the context of community settings.
3. **Urban Planning and Design:** Examining urban planning strategies that contribute to creating livable, sustainable, and healthy communities.

4. Social Entrepreneurship: Learning about innovative business models and approaches to address social and community challenges through entrepreneurship.
5. Communication and Advocacy: Developing effective communication and advocacy skills to engage with diverse community members and stakeholders.
6. Program Management: Acquiring project management skills to plan, implement, and evaluate community-based programs and lifestyle initiatives.
7. Cultural Competence: Understanding cultural diversity and inclusivity to ensure that community programs cater to the needs of different populations.
8. Policy and Governance: Analyzing the role of policies, governance structures, and local government in community and lifestyle management.
9. Research and Evaluation: Learning research methodologies and techniques to assess the effectiveness and impact of community programs.
10. Ethical Considerations: Examining ethical issues and dilemmas that may arise in community management and decision-making processes.

Career Opportunities : Graduates holding a postgraduate degree in Community and Lifestyle Management have a multitude of career opportunities across the public, private, and non-profit sectors. They can take on roles such as Community Development Manager, Public Health Program Coordinator, Urban Planner, Health and Wellness Consultant, Social Entrepreneur, Community Engagement Specialist, Non-profit Organization Manager, Public Policy Analyst, and Researcher in Community Development and Social Issues, each offering unique avenues to contribute positively to society and make a lasting impact.

5. Structure of Course Curriculum for each Course

5.1: 3-Year (6 Semesters) B.Sc/B.S in Community Wellness and Life Style Management (Major)
Artificial Intelligence in Lifestyle Management (Minor)

Sustainable Development (Minor)

Major Stream courses (Core)		No of Credits			
		Thr	Tut	Prat	Tot
1	Introduction to Community Wellness	3	0	0	3
2	Health Promotion and Education	2	1	0	3
3	Nutrition	3	0	0	3
4	Dietetics	2	0	1	3
5	Exercise Science and Physical Activity	1	1	1	3
6	Public Health Principles	3	0	0	3
7	Lifestyle and Behavior Change	3	0	0	3
8	Community Health Assessment	1	0	2	3
9	Epidemiology	3	0	0	3
10	Global Health and Indian Health Issues and Challenges	2	1	0	3
11	Health Equity and Social Determinants of Health	2	1	0	3
12	Substance Abuse and Wellness	2	1	0	3
13	Lifestyle, Health and Happiness	2	1	0	3
14	Health Education	1	2	0	3
15	Health Emergency Management	2	0	1	3
16	Yoga and Naturopathy	1	1	1	3
17	Lifestyle Medicine	3	0	0	3
18	Wellness Behaviors	2	1	0	3
19	Stress Management	2	1	0	3
20	Health Diagnostics	1	1	1	3
SUBTOTAL		41	12	7	60
		60			
Minor Stream Courses		Thr	Tut	Prat	Tot
1	Human Anatomy	1	1	1	3
2	Physiology	1	1	1	3
3	Psychology of Wellbeing	3	0	0	3
4	Artificial Intelligence in Lifestyle Management	2	1	0	3
5	Data Science in Community Wellness	2	1	0	3
6	Gerontology (Aging studies)	3	0	0	3
7	Mindfulness and Meditation	1	1	1	3
8	Fitness Assessment and Prescription	1	1	1	3
SUBTOTAL		14	6	4	24
		24			

5.2: 4-Year (8 Semesters) B.Sc/B.S (Hons) in Community Wellness and Life Style

Management (Major) Artificial Intelligence in Lifestyle Management (Minor)

A	Major Stream courses (Core)	No of Credits			
		Thr	Tut	Prat	Tot
1	Introduction to Community Wellness	3	0	0	3
2	Health Promotion and Education	2	1	0	3
3	Nutrition	3	0	0	3
4	Dietetics	2	0	1	3
5	Exercise Science and Physical Activity	1	1	1	3
6	Public Health Principles	3	0	0	3
7	Lifestyle and Behavior Change	3	0	0	3
8	Community Health Assessment	1	0	2	3
9	Epidemiology	3	0	0	3
10	Global Health and Indian Health Issues and Challenges	2	1	0	3
11	Health Equity and Social Determinants of Health	2	1	0	3
12	Substance Abuse and Wellness	2	1	0	3
13	Lifestyle, Health and Happiness	2	1	0	3
14	Health Education	1	2	0	3
15	Health Emergency Management	2	0	1	3
16	Yoga and Naturopathy	1	1	1	3
17	Lifestyle Medicine	3	0	0	3
18	Wellness Behaviors	2	1	0	3
19	Stress Management	2	1	0	3
20	Health Diagnostics	1	1	1	3
21	National Health Programs	3	0	0	3
22	Biostatistics	1	1	1	3
23	Research Methods in Wellness Management	2	0	1	3
24	Chronic Communicable Disease Management	3	0	0	3
25	Chronic Non -Communicable Disease Management	3	0	0	3
26	Environmental Health	2	0	0	2
27	Occupational Health	3	0	0	3
	SUBTOTAL	58	13	09	80
					80
B	Minor Stream Courses	Thr	Tut	Prat	Tot
1	Human Anatomy	1	1	1	3
2	Physiology	1	1	1	3
3	Psychology of Wellbeing	3	0	0	3
4	Artificial Intelligence in Lifestyle Management	2	1	0	3
5	Data Science in Community Wellness	2	1	0	3
6	Gerontology (Aging studies)	3	0	0	3
7	Mindfulness and Meditation	1	1	1	3
8	Fitness Assessment and Prescription	1	1	1	3
9	Bio -Medical Waste Management	3	0	0	3
10	E-Waste Management	2	0	0	2
11	Screening for Diseases	3	0	0	3
	SUBTOTAL	22	6	4	32
					32

Learning Objectives and Outcomes

- The graduates will have acquired knowledge and skills for holistic well being with mental, physical, emotional and social wellness which the Country needs now in 21st Century
- They will have acquired knowledge and skills on Artificial Intelligence in Lifestyle Management involves the application of AI algorithms, data analysis, and machine learning to assist people in making informed decisions about their diet, fitness, sleep, stress management, and overall well-being.
- They will be able to achieve best health practices personalized nutrition, fitness tracking, sleep optimization and stress management
- They will be acquired knowledge on Dietetics, Exercise Science and Community Health Assessment
- They will have knowledge on Yoga and Naturopathy for well being and will be able to communicate to others also on the Lifestyle, Health and Happiness
- They will be able to take up activities on health emergency assessment and management for benefit of individuals and general public
- With their knowledge and skills Data Science in community wellness, they will be able to do chronic communicable disease management
- They will be able assess the Fitness and accordingly go for Prescription
- They will be able to participate in all governmental national health programmes on Health promotion education
- The graduates can take up studies on Health Diagnostics and prescribe accordingly for the best of Community Wellness
- The multidisciplinary approach in the curriculum enables them integrate knowledge from diverse fields such as public health, psychology, nutrition, sociology, and entrepreneurship.
- The graduates will be equipped to address the public health challenges and life-style related issues at a community level.
- By fostering multidisciplinary skills and knowledge, the course curriculum enables the professionals to design and implement effective wellness programs tailored to diverse populations
- They will have attained capability to assess the requirements and prescribe personalized life style medicine
- They will have attained all capabilities to promote public health and nutrition activities among the communities

The graduates will be able to contribute to the Sustainable development goals related to Health, Sanitation and Water Quality

Annexure - 6

SCHOOL OF ALLIED HEALTH SCIENCES

1. **Name of the School** : SCHOOL OF ALLIED HEALTH SCIENCES
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objectives**

School of Allied Health Sciences

Last two years have taught us the importance of health-care professionals, who have acted as saviors for the entire mankind globally. Medical is one of the most noble professions and a booming career, because the demand for doctors or medical practitioners is never going to decrease. There are a number of medical courses which you can take up to enter the medical industry, one such course is Allied Health Science course. As the Ministry of Health and Family Welfare, Government of India gets ready to give a facelift to the entire allied health services by encouraging institutions to get started, the DTBU extends its excellence by starting courses under the School of Allied Health Sciences so that skilled healthcare workforce can be generated to fulfill the present need of India in general and the state of Telangana in particular. The School is one of the few institutions in the state exclusively dedicated to the education of allied health professionals.

Allied health sciences deal with all sorts of medical diagnostic techniques (e.g. blood analysis, image technology, histopathology, pathological analysis, radiography) that are used in the medical field and are very relevant for patient care. The role of allied health workers in providing effective care has become critical with diagnosis based on technology. Some Bureaus of Statistics worldwide estimate that, relative to most other professions, healthcare-related careers are out for a higher growth rate. Over the last decade, advancements in technology have produced a dramatic change in the general viewpoint of the healthcare industry. The positions of paramedical practitioners and technologists are no longer considered to be the prerogative of physicians and nurses with greater significance. In addition, a greater range of opportunities are now available in higher-level studies and study areas related to Allied health services.

Employment Opportunities for 4-Year B.Sc (Hons) Allied Health Sciences Graduates

The Anesthesiology & OT Technologists find a challenging career in a hospital, nursing homes, trauma/emergency centers, intensive care units, CSSD etc. These graduates are highly regarded for employment overseas. With further experience, graduates may be employed by medical equipment manufacturers and development specialists. The Radiology and Image Technology graduates find several opportunities as imaging technologists in hospitals with radio diagnostic facilities both in public and private sectors. They can join as application specialists in medical

imaging equipment companies such as GE Health care, Philips, Siemens and other popular companies. The graduates also had got the teaching positions in educational institutions in India and abroad and pursuing research activities in medical imaging technology. Medical Laboratory Technology graduates find jobs in government and corporate allied departments as laboratory technologist at hospitals, pharmaceutical laboratories, public health laboratories, and research & product development. They will get jobs as supervisor in laboratory, as consultant to laboratory medicine industry, quality assurance companies, sales & marketing. They can go for teaching jobs as a tutor in colleges. Graduates of Optometry find placements in traditional and non-traditional areas including, tertiary eye care hospitals, optical and contact lens industries, private practice, NGOS. The Emergency Medical Technology graduates find jobs in government and corporate allied departments and are hired in hospitals, diagnostic centres, ambulance services, trauma care centres, accident care centres, emergency OPD's/ clinics etc. They get jobs as emergency medical technician, critical care nurse, emergency medical assistant, critical medical examiner, trauma care assistant. Respiratory Therapy Technology graduates find jobs in government and corporate allied departments as respiratory therapist, ICU co-ordinator, polysomnography technologist, pulmonary function technologist, physician assistant to bronchoscopy and interventional pulmonologist, domiciliary respiratory therapist and product trainer. All the above mentioned allied health sciences graduates can go for Civil Services and Group Services also. They can go for higher studies for PG and PhD courses to get jobs in Universities, ICMR and other Central Government institutions as Research scientists. The University's Placement Cell will strive hard to facilitate placements and avenues for higher studies for the graduates as per their aspirations..

5. Structure of Course Curriculum

Allied Health Sciences Courses

B.Sc (Hons) Medical Laboratory Technology YEAR WISE DISTRIBUTION OF COURSES

Table-I: Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
		No. of Hours		
1	Human Anatomy	70	20	90
2	Physiology	70	20	90
3	Biochemistry I	70	20	90
4	Pathology I (Clinical Pathology Haematology & Blood Banking)	70	20	90
5	Microbiology I	70	20	90
Total		350	100	450

Subsidiary Subjects:

English:30 Hours

Basics of Computer Science: 30 Hours

Lab posting: 470 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects
Core Subjects:

SI. No	Subject	Theory	Practical	Total
		No of Hours		
1	Biochemistry-II	100	50	150
2	General Pathology-II	100	50	150
3	Microbiology-II	100	50	150
Total		300	150	450

Subsidiary Subjects:

Health-Care: 30Hours

Environmental Science & Health: 20Hours

Lab posting: 470 Hours

Table-III Distribution of Teaching Hours in Third Year Subjects
Core Subjects

SI. No	Subject	Theory	Practical	Total
		No of Hours		
1	Biochemistry-III	100	50	150
2	General Pathology-III	100	50	150
3	Microbiology-III	100	50	150
Total		300	150	450

Subsidiary Subjects:

Medical Ethics: 30Hours

Research & Biostatistics: 30Hours

Lab Postings: 470 Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Clinical Lab.

Learning Objectives and Outcomes

- Laboratory Techniques: Graduates will demonstrate proficiency in a wide range of laboratory techniques used in clinical diagnostics.
- Sample Collection: Graduates will collect, handle, and process various types of clinical samples accurately and ethically.
- Laboratory Safety: Graduates will prioritize laboratory safety protocols to ensure the well-being of themselves and others.
- Instrumentation Skills: Students will operate and maintain laboratory instruments and equipment used for diagnostics.
- Quality Assurance: Graduates will ensure the accuracy and reliability of laboratory results through quality control and quality assurance practices.
- Clinical Chemistry: Students will perform chemical analyses of clinical samples, including blood and urine, to assess organ function and diagnose diseases.

- **Medical Microbiology:** Graduates will identify and diagnose infectious diseases and understand microbial pathogenesis.
- **Hematology:** Students will analyze blood components, identify blood disorders, and interpret hematological results.
- **Immunology and Serology:** Graduates will perform immunological tests and analyze serological markers for disease detection.
- **Clinical Microscopy:** Students will examine cellular and non-cellular components of clinical samples using microscopy.
- **Molecular Diagnostics:** Graduates will conduct molecular tests, including PCR, for genetic and infectious disease diagnosis.
- **Blood Banking and Transfusion Medicine:** Graduates will manage blood banks, perform blood typing, and ensure safe blood transfusions.
- **Cytology and Histology:** Graduates will prepare and analyze tissue and cell samples for pathological examinations.
- **Clinical Data Analysis:** Students will interpret laboratory data and communicate results to healthcare professionals.
- **Ethical Practice:** Graduates will adhere to ethical standards and maintain patient confidentiality.
- **Infection Control:** Graduates will implement infection control measures to prevent the spread of infections in the laboratory.
- **Laboratory Management:** Students will be prepared to manage clinical laboratories, including staffing, inventory, and workflow.
- **Continuing Education:** students will commit to lifelong learning and stay updated with advancements in medical laboratory technology and diagnostics.

These learning objectives and outcomes will prepare graduates to excel in the field of **Medical Laboratory Technology**, ensuring accurate diagnosis and healthcare support through clinical laboratory testing.

B.Sc (Hons) Anaesthesiology & OT Technology

Year Wise Distribution of Course

Table-I Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
		No. of Hours		
1	Human Anatomy	70	20	90
2	Physiology	70	20	90
3	Biochemistry-I	70	20	90
4	Pathology-I (Clinical Pathology Haematology & Blood Banking)	70	20	90
5	Microbiology-I	70	20	90
Total		350	100	450

Subsidiary Subjects : English:30 Hours

Basics of Computer Science: 30 Hours

Lab posting: 470 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No of Hours			
1	Medicine relevant to O.T & Anaesthesia technology	50	--	--	50
2	Section A Applied Pathology	30	30	---	120
	Section B Applied Microbiology	30	30		
3	Pharmacology	50	---	--	50
4	Introduction to Anaesthesia & Operation Theatre Technology	80	100	650	830
Total		240	160	650	1050

Subsidiary Subjects:

Health-Care: 30 Hours

Environment science and Health: 30 Hours

Table-III Distribution of Teaching Hours in Third Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
1	Anaesthesia & Operation Theatre Technology- Clinical	50	50	250	350
2	Anaesthesia & Operation Theatre Technology—Applied	50	50	250	350
3	Anaesthesia & Operation Theatre Technology- Advanced	50	50	250	350
Total		150	150	750	1050

Subsidiary Subjects:

Ethics:30 Hours

Research & Biostatistics: 30 Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Anaesthesia Department.

Learning Objectives and Outcomes

- **Anatomy and Physiology:** Graduates will demonstrate a deep understanding of human anatomy and physiology, particularly related to the cardiovascular, respiratory, and nervous systems.
- **Anesthesia Techniques:** Graduates will master various anesthesia techniques, including general, regional, and local anesthesia.
- **Medical Terminology:** Students will be proficient in medical terminology, enabling effective communication with healthcare professionals.
- **Patient Assessment:** Students will be skilled in pre-operative patient assessment, ensuring their fitness for surgery.
- **Operating Room Setup:** Graduates will set up and maintain the operating room, ensuring it is sterile and well-equipped for surgical procedures.
- **Equipment Management:** Students will effectively manage anesthesia equipment and ensure its proper functioning.
- **Anesthesia Administration:** Graduates will administer anesthesia to patients, monitoring their vital signs and adjusting anesthesia levels as needed.
- **Surgical Assistance:** Graduates will assist surgeons and other healthcare professionals during surgical procedures.
- **Patient Safety:** Graduates will prioritize patient safety in the operating room, adhering to infection control and safety protocols.
- **Infection Control:** Graduates will follow strict infection control measures to prevent surgical site infections.
- **Pharmacology:** Students will have a strong knowledge of pharmacology, particularly related to anesthesia drugs.
- **Emergency Response:** Graduates will be prepared to handle anesthesia-related emergencies and complications during surgery.
- **Pain Management:** Graduates will understand pain management techniques for post-operative care.
- **Patient Monitoring:** Students will effectively monitor patients during surgery, including their vital signs and anesthesia levels.
- **Patient Advocacy:** Graduates will advocate for the well-being and rights of patients throughout the surgical process.
- **Continuing Education:** Students will engage in lifelong learning and stay updated with advances in anesthesia and OT technology.

These learning objectives and outcomes will prepare graduates to excel in the field of **Anaesthesiology & OT Technology**, ensuring safe and effective surgical care for patients.

B.Sc (Hons) Radiology & Image Technology

Year Wise Distribution of Course

Table-I Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
		No. of Hours		
1	Human Anatomy	70	20	90
2	Physiology	70	20	90
3	Biochemistry-I	70	20	90
4	Pathology-I (Clinical Pathology Haematology & Blood Banking)	70	20	90
5	Microbiology-I	70	20	90
Total		350	100	450

Subsidiary Subjects

English:30 Hours

Basics of Computer Science: 30 Hours

Lab Posting :470 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Radiation Physics: Medical Physics & Radiation Safety in Radio Diagnosis	100	--	--	100
2	Imaging Physics & Dark Room Techniques	80	--	100	180
3	Radiographic Positioning and Techniques	100	300	370	770
Total		280	300	470	1050

Subsidiary Subjects

English:30 Hours

Basics of Computer Science: 30 Hours

Lab Posting :470 Hours

Table-III: Distribution of Teaching Hours in Third Year Subjects

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Diagnostic Imaging Techniques & Modalities	200	200	200	600
2	Radiographic Special Procedures and Patient Care	100	200	150	450
Total		300	400	350	1050

Subsidiary Subjects:

Ethics: 30 Hours

Research & Biostatistics 30 Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Radiology Department.

Learning Objectives and Outcomes

- Radiology Fundamentals: Graduates will have a strong foundation in radiology principles, techniques, and equipment.
- Radiation Safety: Students will prioritize radiation safety protocols for patients, themselves, and healthcare teams.
- Medical Imaging Modalities: Graduates will master various medical imaging modalities, including X-ray, CT scan, MRI, ultrasound, and nuclear medicine.
- Image Acquisition and Processing: Students will acquire, process, and enhance medical images for accurate diagnosis.
- Radiographic Anatomy: Graduates will have a comprehensive understanding of human anatomy as seen through radiographic images.
- Radiation Biology: Students will understand the biological effects of radiation exposure and apply safety measures.
- Quality Control: Graduates will ensure the quality and reliability of imaging equipment through regular maintenance and testing.
- Radiation Dose Management: Graduates will optimize radiation dose while maintaining image quality.
- Patient Positioning: Graduates will effectively position patients to obtain high-quality diagnostic images.
- Patient Care: Graduates will provide compassionate patient care, ensuring comfort and safety during imaging procedures.
- Medical Ethics: Graduates will apply ethical principles in dealing with patient information and consent.
- Infection Control: Graduates will follow infection control measures to prevent the spread of infections in radiology settings.
- Radiologic Pathology: Graduates will identify common radiologic pathologies and anomalies.
- Radiology Informatics: Graduates will use information technology for image management and data retrieval.
- Image Interpretation: Students will interpret medical images accurately and collaborate with radiologists and healthcare teams.
- Radiation Therapy: Graduates will have an understanding of radiation therapy techniques and their role in cancer treatment.
- Continuing Education: Students will commit to lifelong learning and professional development in radiology and image technology.

These learning objectives and outcomes will equip graduates with the knowledge and skills needed to excel in the field of Radiology & Image Technology, ensuring accurate diagnosis and patient care through medical imaging.

B.Sc (Hons) Optometry Year Wise Distribution of Course

Table-I: Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
1	General Anatomy and General Physiology	70	20	90
2	Physiology	70	20	90
3	Biochemistry	70	20	90
4	General Pathology (Clinical Pathology, Haematology & Blood Banking)	70	20	90
5	Microbiology	70	20	90
Total		350	100	450

Subsidiary Subjects:

English:30 Hours

Basics of Computer Science: 30 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects

Core Subjects

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
1	Optometric Optics & Dispensing optometry	120	40	140	300
2	Clinical Examination of Visual System & Optometric Instruments	120	20	140	280
3	Visual optics	90	40	70	200
4	Physical & Geometric Optics & principles of Lighting	120	100	--	220
5	Pharmacology	50	--	--	50
Total		500	200	350	1050

Subsidiary Subjects:

Health-Care: 30 Hours

Environmental Science & Health: 20 Hours

Table-III: Distribution of Teaching Hours in Third Year Subjects

Core Subjects

Sl. No	Subject	Theory	Practical	Total
1	Low Vision Aids & Geriatric Optometry	90	50	140
2	Contact Lenses	60	60	120
3	Practice management, law in optometry & occupational optometry	70	30	100
4	Paediatric Optometry, Advances in Optometry & Binocular Vision	90	80	170
5	Systemic & Ocular Diseases	90	70	160
Total		400	290	690

Subsidiary Subjects:

Ethics: 30 Hours

Research & Biostatistics: 30 Hours

Clinical Posting: 310Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Ophthalmology Department.

Learning Objectives and Outcomes

- **Ocular Anatomy and Physiology:** Graduates will have a deep understanding of the anatomy and physiology of the eye and visual system.
- **Refractive Errors:** Students will be proficient in diagnosing and correcting common refractive errors like myopia, hyperopia, astigmatism, and presbyopia.
- **Ocular Examination Skills:** Graduates will master techniques for comprehensive ocular examinations, including visual acuity, slit-lamp biomicroscopy, and tonometry.
- **Contact Lens Fitting:** Graduates will be skilled in fitting and prescribing contact lenses for vision correction.
- **Binocular Vision and Visual Perception:** Students will understand binocular vision and visual perception, addressing issues like strabismus and amblyopia.
- **Low Vision Rehabilitation:** Graduates will provide low vision rehabilitation services to individuals with visual impairments.
- **Pediatric Optometry:** Graduates will specialize in pediatric optometry, assessing and managing vision problems in children.
- **Geriatric Optometry:** Graduates will specialize in geriatric optometry, addressing age-related vision issues and eye diseases.
- **Ocular Disease Diagnosis:** Graduates will diagnose and manage various ocular diseases, including glaucoma, diabetic retinopathy, and age-related macular degeneration.
- **Advanced Diagnostic Technology:** Graduates will use advanced diagnostic tools like optical coherence tomography (OCT) and fundus photography for precise diagnoses.
- **Vision Therapy:** Graduates will design and administer vision therapy programs to improve visual skills and performance.
- **Community Eye Health:** Graduates will engage in community eye health programs, promoting eye care and preventive measures.
- **Patient Counseling:** Graduates will counsel patients on eye care, vision correction, and management of ocular conditions.
- **Prescription Writing:** Graduates will accurately prescribe eyeglasses, contact lenses, and other visual aids.
- **Low Vision Device Selection:** Graduates will recommend and fit low vision aids for individuals with severe visual impairments.
- **Ethical Practice:** Students will adhere to ethical standards and maintain patient confidentiality.
- **Continuing Education:** Students will commit to lifelong learning and stay updated with advancements in optometry and eye care.

These learning objectives and outcomes will prepare graduates to excel in the field of **Optometry**, providing comprehensive eye care services and improving the quality of life for individuals with visual challenges.

B.Sc (Hons) Emergency Medical Technology

YEAR WISE DISTRIBUTION OF COURSE

Table-I Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
		No. of Hours		
1	Human Anatomy	70	20	90
2	Physiology	70	20	90
3	Biochemistry-I	70	20	90
4	Pathology-I (Clinical Pathology Haematology & Blood Banking)	70	20	90
5	Microbiology-I	70	20	90
Total		350	100	450

Subsidiary Subjects:

English:30 Hours

Basics of Computer Science: 30 Hours

Lab Posting: 470 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects

Core Subjects

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Introduction to Emergency Medical Services	50	50	250	350
2	Emergency Department Equipment	50	50	250	350
3	Emergency Department Pharmacology	50	50	250	350
Total		150	150	750	1050

Subsidiary Subjects:

Health-Care: 30 Hours

Environmental Science & Health: 20 Hours

Table-III: Distribution of Teaching Hours in Third Year Subjects

Core Subjects

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Medical emergencies	50	50	250	350
2	Trauma and surgical emergencies	50	50	250	350
3	Emergencies in paediatric and special population	50	50	250	350
Total		150	150	750	1050

Subsidiary Subjects:

Ethics: 30 Hours

Research & Biostatistics :30 Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Causality.

Learning Objectives and Outcomes

- **Medical Emergencies:** Graduates will diagnose and manage a wide range of medical emergencies, such as heart attacks, strokes, and diabetic crises.
- **Emergency Medical Response:** Students will demonstrate rapid and effective response to medical emergencies, prioritizing patient care.
- **Patient Assessment:** Graduates will proficiently assess patients, including airway, breathing, circulation, and neurological status.
- **Basic Life Support (BLS):** Graduates will be certified in BLS, including CPR and automated external defibrillator (AED) use.
- **Advanced Life Support (ALS):** Graduates will be trained in ALS techniques, including advanced airway management and intravenous access.
- **Trauma Care:** Graduates will provide trauma care, including wound management, fracture stabilization, and spinal immobilization.
- **Prehospital Pharmacology:** Graduates will administer medications and understand their indications, contraindications, and side effects.
- **Pediatric and Geriatric Care:** Graduates will specialize in pediatric and geriatric emergency care, addressing unique patient needs.
- **Obstetric Emergencies:** Graduates will manage obstetric emergencies and childbirth in the prehospital setting.
- **Mass Casualty Incidents:** Graduates will be prepared to respond to mass casualty incidents and coordinate patient triage and treatment.
- **Patient Advocacy:** Graduates will advocate for patients' rights and well-being throughout the emergency care process.
- **Ethical Practice:** Graduates will adhere to ethical standards and maintain patient confidentiality.
- **Infection Control:** Graduates will implement infection control measures to prevent the spread of infections in the prehospital environment.
- **Community Education:** Students will educate the community on injury prevention and emergency response techniques.
- **Continuing Education:** Students will commit to lifelong learning and stay updated with advancements in emergency medical technology and protocols.

These learning objectives and outcomes will prepare graduates to excel in the field of Emergency Medical Technology, ensuring timely and effective care for individuals in critical situations.

B.Sc (Hons) Respiratory Therapy Technology

Year Wise Distribution of Course

Table-I: Distribution of Teaching Hours in First Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Total
		No. of Hours		
1	Human Anatomy	70	20	90
2	Physiology	70	20	90
3	Biochemistry-I	70	20	90
4	Pathology-I (Clinical Pathology Haematology & Blood Banking)	70	20	90
5	Microbiology-I	70	20	90
Total		350	100	450

Subsidiary Subjects:

English:30 Hours

Basics of Computer Science: 30 Hours

Lab Posting: 470 Hours

Table-II: Distribution of Teaching Hours in Second Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Medicine relevant to Respiratory technology	50	---	---	50
2	Section A Applied Pathology	30	30	---	120
	Section B Applied Microbiology	30	30	---	
3	Pharmacology	50	---	---	50
4	Pharmacology related to Neuroscience technology	80	100	650	830
Total		240	160	650	1050

Subsidiary Subjects:

Health-Care: 30 Hours

Environmental Science & Health: 20Hours

Table-III: Distribution of Teaching Hours in Third Year Subjects

Core Subjects:

Sl. No	Subject	Theory	Practical	Clinical Postings	Total
		No. of Hours			
1	Respiratory Technology- Clinical	50	50	250	350
2	Respiratory Technology- Applied	50	50	250	350
3	Respiratory Technology-Ad	50	50	250	350
Total		150	150	750	1050

Subsidiary Subjects:

Ethics: 30 Hours

Research & Biostatistics: 30 Hours

Table-IV: Fourth Year Internship Program

One Year Compulsory Internship in Pulmonology Department.

Learning Objectives and Outcomes

Respiratory Anatomy and Physiology: Graduates will have a deep understanding of the anatomy and physiology of the respiratory system.

- Diagnostic Procedures: Students will perform diagnostic tests, including pulmonary function tests, arterial blood gases, and bronchoscopy.
- Airway Management: Graduates will effectively manage airways, including endotracheal intubation and tracheostomy care.
- Mechanical Ventilation: Graduates will set up and manage mechanical ventilators for patients with respiratory failure.
- Oxygen Therapy: Graduates will administer oxygen therapy and titrate oxygen delivery based on patient needs.
- Patient Assessment: Graduates will proficiently assess patients with respiratory issues, including monitoring vital signs and interpreting diagnostic results.
- Neonatal and Pediatric Care: Graduates will specialize in neonatal and pediatric respiratory care, addressing unique patient needs.
- Cardiopulmonary Rehabilitation: Graduates will assist in cardiopulmonary rehabilitation programs for patients with chronic respiratory conditions.
- Critical Care Support: Students will be able to provide critical care support in intensive care units, including managing ventilated patients.
- Emergency Response: Graduates will respond to emergency situations, including code blue responses and rapid response teams.
- Asthma and Allergy Management: Graduates will manage asthma and allergies through patient education and treatment plans.
- Pulmonary Disease Management: Graduates will diagnose and manage various pulmonary diseases, including COPD and pulmonary fibrosis.
- Respiratory Medications: Graduates will administer respiratory medications and educate patients on proper inhaler use.
- Ethical Practice: Graduates will adhere to ethical standards and maintain patient confidentiality.
- Infection Control: Graduates will implement infection control measures to prevent the spread of infections in clinical settings.
- Patient Education: Graduates will educate patients and their families on respiratory conditions and self-management techniques.
- Continuing Education: Graduates will commit to lifelong learning and stay updated with advancements in respiratory therapy technology and protocols.

These learning objectives and outcomes will prepare graduates to excel in the field of Respiratory Therapy Technology, providing essential care for individuals with respiratory challenges and contributing to improved respiratory health outcomes.

B. Bachelor of Physiotherapy (BPT)

Four years course and Six Months Internship

Sl. No.	Name of the Subject	No. of Hours	Weekly hours	Year of Instruction
1st Year: Examination subjects				
1	English	100	01	I
2	Sociology	75	01	I
3	Psychology			
4	Anatomy	215	09	I
5	Physiology	150	06	I
6	Biochemistry	80	03	I
Non examination subjects				
7	Orientation and instruction to treatment	50	-	I
8	Visits & Special Lectures	75	-	I
9	Administration, Supervision and Ethics	50	-	I
10	Fundamentals of Physiotherapy practicals	50	-	I
11	Physical Education	75	-	I
TOTAL		1010	21	
2nd year: Examination subjects				
12	Pathology	40	01	II
13	Microbiology			
14	Exercise Therapy	330	12	II
15	Bio-mechanics and Applied Anatomy	80	02	II
16	Electrotherapy - I (Low Frequency & Medium)	200	09	II
17	Electrotherapy - II (High Frequency)	160	06	II
18	Clinicals	380		II
Non examination subjects				
19	Visits & Special Lectures	25	1	
20	Computer Applications	25	01	II
21	Physiotherapy in Veterinary Sciences	10	-	II
TOTAL		1265	32	
3rd year: Examination subjects				
22	General Medicine	75	10	III
23	Pharmacology	30		III
24	Paediatrics	50		III
25	General Surgery including Plastic Surgery			
26	Obstetrics & Gynaecology	20		III
27	Clinical Orthopaedics	125	02	III
28	Physiotherapy in Orthopaedic Conditions	110		III
29	Clinical Neurology	125	02	III
30	Physiotherapy in Neurology Conditions	110	02	III

32	Nursing and First Aid	25	01	III
33	Diagnostic Imaging for Physiotherapist	15	01	III
34	Computer Applications	15	01	III
35	Emergency Care & BLS	10	01	III
36	Project work	40	01	III
	TOTAL	1240	40	
	4th year: Examination subjects			
37	Community Medicine	150	06	IV
38	Rehabilitation Medicine including Geriatrics	100	05	IV
39	Clinical Cardio-respiratory conditions	125	05	IV
40	Physiotherapy in Cardiorespiratory conditions	110	05	IV
41	Biostatistics and Research Methodology	80	02	IV
42	Project Work (Should commence in 3rd year)	40	01	IV
43	Clinicals	400	18	IV
	Non examination subjects			
44	YOGA	25	01	IV
45	Basics of acupuncture and acupressure	25	-	IV
46	Computer Applications	25	01	IV
	TOTAL	1080	44	

Learning Objectives and Outcomes

- **Anatomy and Physiology:** Graduates will have a comprehensive understanding of human anatomy and physiology, with a focus on the musculoskeletal and neuromuscular systems.
- **Patient Assessment:** Graduates will proficiently assess patients' physical conditions, including mobility, strength, and range of motion.
- **Clinical Diagnosis:** Students will diagnose and classify physical impairments and disabilities through clinical evaluation and tests.
- **Treatment Planning:** Graduates will develop individualized treatment plans based on patient assessments, goals, and evidence-based practice.
- **Therapeutic Interventions:** Graduates will perform a wide range of therapeutic interventions, including manual therapy, exercise prescription, and electrotherapy.
- **Musculoskeletal Rehabilitation:** Students will specialize in musculoskeletal rehabilitation, addressing conditions such as sports injuries, orthopedic surgeries, and musculoskeletal disorders.
- **Neurological Rehabilitation:** Students will specialize in neurological rehabilitation, addressing conditions such as stroke, spinal cord injuries, and neuromuscular disorders.
- **Cardiopulmonary Rehabilitation:** Graduates will provide cardiopulmonary rehabilitation services to patients with heart and lung conditions.
- **Pediatric Physiotherapy:** Students will specialize in pediatric physiotherapy, addressing developmental disorders and pediatric conditions.

- **Geriatric Physiotherapy:** Students will specialize in geriatric physiotherapy, addressing age-related physical challenges and promoting functional independence in older adults.
- **Pain Management:** Graduates will effectively manage pain through various physiotherapeutic techniques and modalities.
- **Sports Medicine:** Graduates will work with athletes and sports teams, providing injury prevention, treatment, and performance enhancement services.
- **Orthopedic Manual Therapy:** Students will specialize in orthopedic manual therapy techniques for the management of musculoskeletal conditions.
- **Neurorehabilitation Techniques:** Graduates will employ neurorehabilitation techniques to improve motor function and mobility in patients with neurological disorders.
- **Cardiovascular and Pulmonary Rehabilitation:** Graduates will assist patients in improving cardiovascular and pulmonary health through rehabilitation programs.
- **Patient Education:** Graduates will educate patients on self-management, exercises, and preventive measures for their specific conditions.
- **Ethical Practice:** Graduates will adhere to ethical standards, respecting patient autonomy, confidentiality, and informed consent.
- **Continuing Education:** Students will commit to lifelong learning, staying updated with advancements in physiotherapy practice, techniques, and technology.

These learning objectives and outcomes will prepare graduates to excel in the field of Physiotherapy, helping individuals of all ages and backgrounds achieve improved physical function and overall well-being.

Compulsory Rotatory Internship:

After successful completion of the final year examination every student admitted to the course should undergo 6 (Six) months of Compulsory Rotatory Internship in the following Departments.

Total Internship Hours: 1150 hrs.

1.	Physiotherapy Out-patient Department	1 Month.
2.	Orthopaedics	1 Month.
3.	Neurology & Neuro Surgery	1 Month.
4.	Cardiology & Cardiothoracic Surgery	1 Month.
5.	General Medicine, General Surgery Gynaecology and Paediatrics	1 Month.
6.	Community based Rehabilitation / Geriatrics.	1 Month.

Master of Physiotherapy (MPT)

1. MPT IN ORTHOPEDICS
2. MPT IN NEUROLOGY
3. MPT IN CARDIO VASCULAR & PULMONARY

MPT – FIRST YEAR (COMMON FOR ALL SPECIALITIES)

S. No	Subject	Theory	Practical/clinicals	Total hrs
1	Basic Sciences	180	95	275
2	Biostatistics & Research methodology	100	-	100
3	Physiotherapeutic-I	75	75	150
4	Physiotherapeutic-II	75	75	150
5	**Journal Clubs, seminars, case presentation, special clinics teaching, field work etc.		150	150
6	Dissertation		50	50
7	Clinical Training		550	550
			Total	1425

MPT – SECOND YEAR MPT IN ORTHOPEDICS

S. No	Subject	Theory	Practical/clinicals	Total
1	Basics-Anatomy, Physiology And Pathomechanics	100	50	150
2	clinical conditions	100	50	150
3	Assessment and evaluation	100	100	200
4	Physiotherapeutic Intervention	100	100	200
5	Dissertation		100	100
6	**Journal Clubs, seminars, case presentation, special clinics teaching, filed work etc.,		150	150
7	Clinical Training		550	550
			Total	1500

Learning Objectives and Outcomes

- Advanced Musculoskeletal Anatomy: Graduates will have an in-depth knowledge of musculoskeletal anatomy, including bones, joints, muscles, and ligaments.
- Orthopedic Assessment: Graduates will conduct comprehensive orthopedic assessments, including biomechanical analysis and functional testing.
- Clinical Diagnosis: Graduates will accurately diagnose musculoskeletal conditions and injuries using clinical evaluation and imaging techniques.

- Evidence-Based Practice: Graduates will apply evidence-based principles to guide their clinical decision-making and treatment planning.
- Manual Therapy Skills: Graduates will master advanced manual therapy techniques, including joint mobilizations, manipulations, and soft tissue techniques.
- Exercise Prescription: Graduates will design and prescribe customized exercise programs to improve strength, flexibility, and function in orthopedic patients.
- Post-Operative Rehabilitation: Graduates will specialize in post-operative rehabilitation for orthopedic surgeries, such as joint replacements and ligament repairs.
- Sports Injury Management: Graduates will provide specialized care for sports-related injuries, including assessment, treatment, and return-to-play protocols.
- Orthotic and Prosthetic Management: Graduates will assess and recommend orthotic and prosthetic devices for patients with musculoskeletal impairments.
- Pain Management: Graduates will employ various techniques for managing acute and chronic musculoskeletal pain, including modalities and manual therapy.
- Gait Analysis: Graduates will analyze and assess gait patterns and provide interventions to improve walking and running mechanics.
- Orthopedic Imaging Interpretation: Graduates will interpret orthopedic imaging, including X-rays, MRIs, and CT scans, to aid in diagnosis and treatment planning.
- Geriatric Orthopedics: Graduates will specialize in orthopedic care for older adults, addressing age-related musculoskeletal conditions.
- Pediatric Orthopedics: Graduates will specialize in pediatric orthopedics, addressing developmental disorders and childhood musculoskeletal conditions.
- Interdisciplinary Collaboration: Graduates will collaborate with orthopedic surgeons, physical therapists, and other healthcare professionals to provide holistic patient care.
- Patient Education: Graduates will educate orthopedic patients on condition management, home exercises, and injury prevention.
- Ethical Practice: Graduates will adhere to ethical standards, respecting patient autonomy, confidentiality, and informed consent.
- Clinical Leadership: Graduates will demonstrate leadership skills in clinical settings, including supervising support staff and mentoring junior therapists.
- Continuing Education: Graduates will commit to lifelong learning, staying updated with advancements in orthopedic physiotherapy practice, techniques, and technology.

These learning objectives and outcomes will prepare graduates to excel in the specialized field of Orthopedic Physiotherapy, providing expert care to individuals with musculoskeletal conditions and injuries.

MPT IN NEUROLOGY

S. No	Subject	Theory	Practical/clinicals	Total
1	Basics-Anatomy, Physiology And Pathomechanics	100	50	150
2	clinical conditions	100	50	150
3	Assessment and evaluation	100	100	200
4	Physiotherapeutic Intervention	100	100	200
5	Dissertation		100	100
6	**Journal Clubs, seminars, case presentation, special clinics teaching, filed work etc.,		150	150
7	Clinical Training		550	550
			Total	1500

Learning Objectives and Outcomes

- Neuroanatomy: Graduates will possess advanced knowledge of neuroanatomy, including the structure and function of the nervous system.
- Neurological Assessment: Graduates will conduct comprehensive neurological assessments, including evaluation of sensory, motor, and cognitive function.
- Clinical Diagnosis: Graduates will accurately diagnose a range of neurological conditions, such as stroke, spinal cord injuries, and neurodegenerative diseases.
- Neurological Imaging Interpretation: Graduates will interpret neuroimaging, such as MRIs and CT scans, to aid in diagnosis and treatment planning.
- Neurorehabilitation Techniques: Graduates will specialize in advanced neurorehabilitation techniques, including neurodevelopmental treatment (NDT) and proprioceptive neuromuscular facilitation (PNF).
- Gait and Balance Training: Graduates will assess and improve gait and balance impairments in neurological patients.
- Functional Independence: Graduates will focus on improving functional independence and quality of life for patients with neurological conditions.
- Cognitive Rehabilitation: Graduates will provide cognitive rehabilitation for patients with acquired brain injuries, addressing memory, attention, and executive function.
- Stroke Rehabilitation: Graduates will specialize in stroke rehabilitation, including upper and lower limb recovery and speech therapy.
- Spinal Cord Injury Management: Graduates will manage patients with spinal cord injuries, addressing mobility and independence.

- **Pediatric Neurology:** Graduates will specialize in pediatric neurology, addressing developmental disorders and childhood neurological conditions.
- **Geriatric Neurology:** Graduates will specialize in geriatric neurology, addressing neurological conditions in older adults.
- **Neuromuscular Disorders:** Graduates will work with patients with neuromuscular disorders, such as muscular dystrophy and ALS.
- **Pain Management:** Graduates will employ pain management techniques for patients with chronic pain related to neurological conditions.
- **Patient and Family Education:** Graduates will educate patients and their families on condition management, assistive devices, and community resources.
- **Ethical Practice:** Graduates will adhere to ethical standards, respecting patient autonomy, confidentiality, and informed consent.
- **Continuing Education:** Graduates will commit to lifelong learning, staying updated with advancements in neurological physiotherapy practice, techniques, and technology.

These learning objectives and outcomes will prepare graduates to excel in the specialized field of Neurological Physiotherapy, providing expert care to individuals with neurological conditions and promoting their functional recovery and well-being.

MPT IN CARDIO VASCULAR & PULMONARY

S. No	Subject	Theory	Practical/clinicals	Total
1	Basics-Anatomy, Physiology And Pathomechanics	100	50	150
2	clinical conditions	100	50	150
3	Assessment and evaluation	100	100	200
4	Physiotherapeutic Intervention	100	100	200
5	Dissertation		100	100
6	**Journal Clubs, seminars, case presentation, special clinics teaching, filed work etc.,		150	150
7	Clinical Training		550	550
			Total	1500

Learning Objectives and Outcomes

- **Cardiovascular and Pulmonary Anatomy:** Graduates will possess advanced knowledge of cardiovascular and pulmonary anatomy and physiology.
- **Cardiopulmonary Assessment:** Graduates will conduct comprehensive assessments of cardiovascular and pulmonary function, including exercise testing and spirometry.

- **Clinical Diagnosis:** Graduates will accurately diagnose a wide range of cardiovascular and pulmonary conditions, such as heart disease, chronic obstructive pulmonary disease (COPD), and asthma.
- **Cardiopulmonary Imaging Interpretation:** Graduates will interpret imaging and diagnostic tests, such as echocardiograms and pulmonary function tests, to aid in diagnosis and treatment planning.
- **Exercise Prescription:** Graduates will design and prescribe individualized exercise programs for cardiovascular and pulmonary patients, focusing on improving fitness and function.
- **Cardiac Rehabilitation:** Graduates will specialize in cardiac rehabilitation, providing exercise and education to patients recovering from heart surgeries and cardiovascular events.
- **Pulmonary Rehabilitation:** Graduates will specialize in pulmonary rehabilitation, addressing respiratory conditions through exercise and education.
- **Respiratory Care:** Graduates will provide respiratory care interventions, including airway clearance techniques and mechanical ventilation management.
- **Oxygen Therapy:** Graduates will administer and manage oxygen therapy for patients with hypoxia and respiratory distress.
- **Chest Physiotherapy:** Graduates will perform chest physiotherapy techniques, such as postural drainage and percussion, to aid in mucous clearance.
- **Neonatal and Pediatric Cardiopulmonary Care:** Graduates will specialize in cardiopulmonary care for neonatal and pediatric patients with congenital heart diseases and respiratory conditions.
- **Geriatric Cardiopulmonary Care:** Graduates will specialize in cardiopulmonary care for older adults, addressing age-related cardiovascular and pulmonary issues.
- **Patient Education:** Graduates will educate patients on condition management, medication adherence, and lifestyle modifications.
- **Ethical Practice:** Graduates will adhere to ethical standards, respecting patient autonomy, confidentiality, and informed consent.
- **Quality Improvement:** Graduates will participate in quality improvement initiatives to enhance patient care and outcomes in cardiopulmonary rehabilitation.
- **Nutrition Counseling:** Graduates will provide nutrition counseling for patients with cardiovascular and pulmonary conditions.
- **Continuing Education:** Graduates will commit to lifelong learning, staying updated with advancements in cardiovascular and pulmonary physiotherapy practice, techniques, and technology.

These learning objectives and outcomes will prepare graduates to excel in the specialized field of Cardiovascular and Pulmonary Rehabilitation, helping individuals with heart and lung conditions achieve improved cardiovascular and pulmonary health and overall well-being.

Annexure - 7

SCHOOL OF MANAGEMENT AND LAW

1. **Name of the School** : SCHOOL OF MANAGEMENT AND LAW
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objective of the Courses:**

The course structure emphasizes a holistic and collaborative approach, as envisioned by the NEP 2020, and integrates technology in line with the sustainable development goals (SDGs) of the United Nations. The underlying theme of the course development and implementation is innovation and disruption, with a focus on ethics and value-based education.

The syllabus focuses on leadership styles that are flexible and adaptive, allowing for quick responses to changes in the market. It also emphasizes the importance of continuous learning and experimentation in finding sustainable solutions.

The course is designed to actively monitor changes in regulations related to education, accreditation, curriculum licensing, and regulatory updates.

5. **Structure of Course Curriculum**

5.1 3-Year – Bachelor of Business Administration (BBA)

A	Major Stream courses (Core)	No of Credits
1	Principles of Management	3
2	Microeconomics	3
3	Business Legislation	3
4	Business Mathametics	3
5	Business Environment	3
6	Business Statistics	3
7	Management Accounting	3
8	Research Methodology	3
9	Operations Management	3
10	Corporate Ethics and Governance	3
11	Financial Accounting	3
12	Organizational Behaviour	3
13	Business Environment	3
14	Cost accounting	3
15	Entrepreneurship	3
16	Financial Accounting	3
17	Human Resources Management	3
18	Finance Management	3
19	Marketing Management	3
20	International Business	3
	Total	60
B	Minor Stream Courses	
1	MM/FM/HRM/BA/ED/HM	4
2	MM/FM/HRM/BA/ED/HM	4
3	MM/FM/HRM/BA/ED/HM	4
4	MM/FM/HRM/BA/ED/HM	4
5	MM/FM/HRM/BA/ED/HM	4
6	MM/FM/HRM/BA/ED/HM	4
	Total	24

C	Multi-Disciplinary Courses		
	1	Agri. Business Management	3
	2	Artificial Intelligence and Business decisions	3
	3	Project Management	3
		Total	9
D	Ability Enhancement Courses		
	1	Employability Skills Training (EST) - 1	3
	2	Employability Skills Training (EST) - 2	3
	3	Employability Skills Training (EST) - 3	2
		Total	8
E	Skill Enhancement Courses		
	1	Business Communication skills - 1	3
	2	Presentations and report writing	3
	3	Business Communication skills - 1	2
		Total	8
F	Value Added Courses for all UG courses		
	1	Campus to Corporate - 1	3
	2	Campus to Corporate -2	2
		Total	5
G	Summer Internship		6
		Grand Total	120
1	Human Resource Management (HRM)		
		Course Name	Credits
		Learning and Development	4
		Performance Management and Reward Systems	4
		Labour Law	4
		Human Resource Planning	4
		Compensation Management	4
		Conflict Management and Negotiation	4
2	Business Analytics (BA)		
		Course Name	Credits
		Introduction to Advanced Technologies	4
		Business intelligence and Reporting	4
		Data Warehousing and Data Mining	4
		Advanced Business Analytics	4
		Advanced Excel	4
		Business analytics	4
3	Entrepreneurship Development (ED)		
		Course Name	Credits
		Business Ethics and Governance	4
		Technology Integration and Innovation	4
		New Venture Creation	4
		Business Plan (Identification, Development and Writing)	4
		Social Entrepreneurship	4
		Family Business Management	4
4	Healthcare Management (HM)		
		Course Name	Credits
		Healthcare Policy and Regulation	4
		Healthcare Operations Management	4
		Healthcare Marketing	4
		Healthcare Finance	4
		Hospital Management	4
		Healthcare Information Systems	4

5	Marketing Management (MM)	
	Course Name	Credits
	Product and Brand Management	4
	Logistics and Distribution Management	4
	Advertisement and Sales Promotion	4
	Consumer Behaviour	4
	Digital Marketing	4
	Services Marketing	4
6	Financial Management (FM)	
	Course Name	Credits
	Corporate Finance	4
	Financial Markets and Services	4
	Security Analysis and Portfolio Management	4
	Mergers and Acquisitions	4
	Financial Risk Management	4
	International Financial Management	4

Learning Objectives and Outcomes

- **Foundational Business Knowledge:** Graduates will have a strong foundation in key business disciplines, including marketing, finance, management, accounting, economics, and operations management.
- **Critical Thinking and Problem-Solving:** Graduates will develop critical thinking skills and the ability to analyze business challenges, formulate solutions, and make informed decisions.
- **Effective Communication:** Students will be proficient in written and oral communication, enabling them to convey complex business ideas clearly and persuasively.
- **Ethical and Social Responsibility:** Students will understand ethical principles and social responsibility in business contexts, making ethical decisions and considering the impact of business activities on society.
- **Global Perspective:** Graduates will have an awareness of global business trends, cultural differences, and the ability to navigate the complexities of the global business environment.
- **Leadership and Teamwork:** Students will demonstrate leadership qualities and effective teamwork skills, facilitating collaboration in diverse business settings.
- **Entrepreneurial Mindset:** Graduates will develop an entrepreneurial mindset, fostering innovation, creativity, and an understanding of entrepreneurship and business startups.
- **Data Analysis and Technology Skills:** Graduates will possess data analysis and technology skills relevant to modern business, including proficiency in using business software and data-driven decision-making.
- **Business Ethics and Corporate Governance:** Students will understand the importance of business ethics, corporate governance, and responsible business practices.

These learning objectives and outcomes provide a comprehensive framework for graduates of the Bachelor of Business Administration (BBA) program, equipping them with the knowledge, skills, and ethical awareness necessary to excel in various roles within the business world. Graduates will be prepared for careers in management, entrepreneurship, marketing, finance, and more.

5.2 3-Year – Bachelor of Business Administration (BBA)

MBA (PG 2 Years) programme Structure

Semester-I

	Course Name	Credits
1	Principles of Management and Organizational Behaviour	3
2	Business Economics	3
3	Financial Management	4
4	Marketing Management	4
5	Business Environment (Indian & Global)	3
6	Human Resource Management	3
7	Business Legislation	2
8 Skill	Logic Building & Reasoning Skills for Managers	2
Total Credits		24

Semester-II

Code	Course Name	Credits
1	Quantitative Techniques for Business Management	4
2	Management Accounting	4
3	Business Analytics for Decision Making	3
4	Business Research Methodology	3
5	Operations Management	3
6	Enterprise Resource Planning	3
7	Design Thinking and Innovation	2
8 Skill	Professional Skills for Managers	2
Total Credits		24

SBIP-1	Summer Break Internship Program	10
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Semester -III

	Course Name	Credits
1	Strategic Management	4
2	Entrepreneurship	4
3	Corporate Social Responsibility	4
4	MM/FM/HRM/BA/ED/HM	3
5	MM/FM/HRM/BA/ED/HM	3
6	MM/FM/HRM/BA/ED/HM	3
7	MM/FM/HRM/BA/ED/HM	3
8 Skill	Leadership and Teamwork	2
Total Credits		26

Semester -IV

	Course Name	Credits
1	International Business	3
2	Project Management	3
3	MM/FM/HRM/BA/ED/HM	3
4	MM/FM/HRM/BA/ED/HM	3
5	MM/FM/HRM/BA/ED/HM	3
6	MM/FM/HRM/BA/ED/HM	3
7 Skill	Cross Functional Collaboration	2
8	Management Research Project	6
Total Credits		26

Grand Total 210

Marketing Management (MM)

	Course Name	Credits
1	Product and Brand Management	3
2	Logistics and Distribution Management	3
3	International Marketing	3
4	Advertisement and Sales Promotion	3
5	Consumer Behaviour	3
6	Digital Marketing	3
7	Services Marketing	3
8	Rural and Agricultural Marketing	3
9	Event and Entertainment Management	3
10	Retail Management	3

Financial Management (FM)

	Course Name	Credits
1	Corporate Finance	3
2	Financial Markets and Services	3
3	Security Analysis and Portfolio Management	3
4	Behavioural Finance	3
5	Strategic Financial Management	3
6	Mergers and Acquisitions	
7	Financial Risk Management	3
8	Infrastructure Finance	3
9	International Financial Management	3
10	Blockchain Technology	3

Human Resource Management (HRM)

	Course Name	Credits
1	Talent and Competency Management	3
2	Learning and Development	3
3	Performance Management and Reward Systems	3
4	Labour Law	3
5	Human Resource Planning	3
6	International Human Resource Management	3
7	Organizational Development and Change Management	3
8	Strategic Human Resource Management	3
9	Compensation Management	3
10	Conflict Management and Negotiation	3

Business Analytics (BA)		
	Course Name	Credits
1	Introduction to Advanced Technologies	3
2	Business intelligence and Reporting	3
3	Data Warehousing and Data Mining	3
4	Advanced Business Analytics	3
5	Advanced Excel	3
6	People Analytics	3
7	Marketing Analytics	3
8	Finance Analytics	3
9	Big Data Analysis and Its Application	3
10	Machine Learning with Business Applications (with R and Python)	3
Entrepreneurship Development (ED)		
	Course Name	Credits
1	Business Ethics and Governance	3
2	Technology Integration and Innovation	3
3	MSME Scaling up and Growth strategy	3
4	New Venture Creation	3
5	Business Plan (Identification, Development and Writing)	3
6	Venture Capital and Private equity	3
7	Entrepreneurial Marketing	3
8	Entrepreneurial Finance	3
9	Social Entrepreneurship	3
10	Family Business Management	3
Healthcare Management (HCM)		
	Course Name	Credits
1	Healthcare Policy and Regulation	3
2	Healthcare Operations Management	3
3	Healthcare Marketing	3
4	Healthcare Finance	3
5	Hospital Management	3
6	Healthcare Economics	3
7	Healthcare Information Systems	3
8	Healthcare Analytics	3
9	Healthcare Innovation and Entrepreneurship	3
10	Medical Ethics and Hospital Management	3

Learning Objectives and Outcomes

- Foundational Business Understanding: Graduates will develop a comprehensive understanding of core business disciplines, including finance, marketing, management, operations, and strategy.
- Advanced Business Concepts: Students will explore advanced business concepts and theories to gain a deeper understanding of contemporary business practices.
- Leadership Development: Students will cultivate leadership skills and the ability to inspire and lead teams effectively in diverse business environments.
- Financial Management: Graduates will analyze financial data, make informed financial decisions, and manage resources effectively.
- Global Business Awareness: Students will gain a global perspective by studying international markets, cross-cultural management, and global trade dynamics.
- Strategic Management: Graduates will gain expertise in strategic management, including strategy formulation, implementation, and evaluation.
- Critical Thinking Skills: Students will develop critical thinking skills to analyze complex business challenges, assess opportunities, and make strategic decisions.
- Strategic Marketing: Students will create and implement strategic marketing plans, conduct market research, and adapt to changing consumer behavior.
- Market Analysis: Graduates will utilize data-driven market analysis to identify trends, opportunities, and competitive advantages.
- Team Collaboration: Graduates will develop strong teamwork and collaboration skills, facilitating effective teamwork in a global and multicultural context.
- Problem-Solving Ability: Students will enhance problem-solving abilities by applying analytical techniques to real-world business scenarios.
- Professional Communication: Graduates will improve professional communication skills for effective business presentations, negotiations, and written reports.
- Ethical Decision-Making: Graduates will apply ethical principles to make responsible business decisions and consider the impact on stakeholders and society.
- Corporate Social Responsibility: Graduates will understand and integrate corporate social responsibility (CSR) into business strategies and practices.
- International Business Strategy: Students will develop strategies for conducting business in the global marketplace and navigating international challenges.
- Financial Strategy: Graduates will develop financial strategies to optimize organizational performance and ensure financial sustainability.
- Innovation Management: Graduates will foster innovation and creativity within organizations to drive growth and competitiveness.
- Digital Transformation: Students will understand the impact of digital technologies on business models and operations and leverage them for a strategic advantage.
- Networking and Relationship Building: Graduates will develop networking skills and build professional relationships to enhance career opportunities.

- Entrepreneurship: Graduates will explore entrepreneurship principles, business startup strategies, and entrepreneurial thinking.
- Career Advancement: Graduates will prepare for career advancement and leadership roles within organizations or entrepreneurial ventures.

These learning objectives and outcomes provide a comprehensive framework for graduates of a 2-year Master of Business Administration (MBA) program, equipping them with the knowledge, skills, and ethical awareness necessary to excel in leadership and management roles across various industries. Graduates will be prepared to drive organizational success, promote ethical business practices, and adapt to the dynamic business landscape.

5.3 5 - Year- Bachelor of Business Management and Bachelor of Laws (BBM LLB)

BBM LLB (5 Years) programme Structure

A	Major Stream courses (Core)	No of Credits
1	Introduction to Law	4
2	Legal Methods and Research	4
3	Principles of Management	4
4	Microeconomics	4
5	Business Mathematics	4
6	Law of Contracts I	4
7	Law of Contracts II	4
8	Constitutional Law	4
9	Managerial Accounting	4
10	Business Ethics and Governance	4
11	Organizational Behavior	4
12	Marketing Management	4
13	Financial Management	4
14	Human Resource Management	4
15	Criminal Law I	4
16	Criminal Law II	4
17	Administrative Law	4
18	Family law -1	4
19	Family Law -2	4
20	Environmental Law	4
21	Business Law	4
22	Entrepreneurship Development	4
23	E-commerce and Digital Business	4
24	Business Statistics	4
25	Intellectual Property Rights	4
26	Corporate Law	4
27	Labor Law	4
28	Banking and Insurance Law	4
29	Taxation Law	4
30	Mergers and Acquisitions	4
31	Alternative Dispute Resolution	4
32	International Business Law	4

33	Consumer Protection Law	4
34	Company Law	4
35	Competition Law	4
36	Cyber Law	4
	Total	144
B	Multi-Disciplinary Courses	
1	Agri. Business Management	3
2	Artificial Intelligence and Business decisions	3
3	Ethics and Behavior Management	3
4	Corporate social Responsibility	3
5	Negotiation and Conflict Resolution	3
6	Presentation Skills	3
7	Data Analysis and Decision Making	3
8	Project Management	3
	Total	24
C	Ability Enhancement Courses	
	Moot Court Exercises	2
	Moot Court Exercises	2
	Moot Court (Higher Judiciary)	4
	total	8
D	Skill Enhancement Courses	
	Business Communication Skills	2
	legal Professional Communication skills	2
	Legal draft writing skills	2
	Life Skills -1	2
	Life Skills -2	2
	Total	10
E	Value Added Courses for all UG courses	
1	Indian Heritage and Culture (IHC)	3
2	General Knowledge and Current Affairs (GK & CA)	3
3	Professional Ethics and Advocacy Skills	3
	Total	9
F	Summer Internship	5
G	Apprenticeship	10
	Grand Total	210

Learning Objectives and Outcomes

- Business Management: Students will acquire a comprehensive understanding of business management concepts, including marketing, finance, operations, and strategic management.
- Legal Principles: Graduates will have a strong foundation in legal principles, including contract law, tort law, constitutional law, and criminal law.
- Legal Writing: Graduates will master the art of legal writing, including drafting contracts, agreements, and legal opinions.
- Business Ethics: Students will apply ethical principles to business decisions, considering the impact on stakeholders and society.

- Analytical Skills: Students will cultivate critical thinking and analytical skills to assess complex legal and business issues.
- International Law: Students will gain knowledge of international law and its relevance in a globalized business environment.
- Problem-Solving: Graduates will enhance problem-solving abilities by applying legal and business knowledge to practical scenarios.
- Financial Management: Students will apply financial management principles for effective resource allocation and financial sustainability.
- Strategic Business Planning: Graduates will develop strategic business plans and marketing strategies to achieve organizational objectives
- Legal Research: Graduates will develop strong legal research skills to access and analyze legal sources, statutes, and case law.
- Oral Advocacy: Students will hone oral advocacy skills for effective courtroom representation and negotiation.
- Business Communication: Students will enhance business communication skills for clear and persuasive presentations and negotiations.
- Legal Ethics: Graduates will understand and adhere to legal ethics and professional conduct standards in legal practice.
- Corporate Governance: Students will understand corporate governance principles and their significance in business management.
- Company Law: Graduates will master company law concepts related to business incorporation, governance, and compliance.
- Financial Regulations: Graduates will analyze financial regulations and their impact on business operations and decision-making.
- Consumer Protection Law: Students will understand consumer protection laws and their implications for business practices.
- Labor Relations: Graduates will explore employment and labor laws to address workplace issues and labor disputes.
- Human Resource Management: Students will apply human resource management principles to foster a productive and compliant work environment.
- Legal Advocacy: Graduates will advocate effectively in legal proceedings, including litigation and alternative dispute resolution.
- Legal Counseling: Graduates will provide legal counsel and advice to individuals, businesses, or organizations.
- Career Advancement: Students will prepare for career advancement in legal practice, corporate leadership, or entrepreneurial ventures.
- Community Engagement: Graduates will engage in community service and pro bono legal work to promote access to justice and social responsibility.

These learning objectives and outcomes provide a comprehensive framework for graduates of a 5-year Bachelor of Business Management and Bachelor of Laws (BBM LLB) program, equipping them with the knowledge, skills, and ethical awareness necessary to excel in legal practice, business management, or the intersection of both fields. Graduates will be well-prepared to address complex legal and business challenges in various roles and industries.

5.4 5 - Year- Bachelor of Arts and Bachelor of Laws (BA LLB)

BA LLB (5 Years) programme Structure

A	Major Stream courses (Core)	No of Credits
1	English Language and Legal Writing	4
2	Political Science	4
3	Constitutional Law - 1	4
4	Economics	4
5	Contract Law -1	4
6	Law of Torts	4
7	Property Law	4
8	Administrative Law	4
9	Family Law -1	4
10	Philosophy	4
11	Environmental Law	4
12	Human Rights Law	4
13	Contract Law -2	4
14	Constitutional Law -2	4
15	Family Law -2	4
16	Political Science	4
17	Sociology	4
18	History	4
19	Psychology	4
20	Law of Crimes -1	4
21	International Relations	4
22	Jurisprudence	4
23	Corporate Law and Governance	4
24	Intellectual Property Law	4
25	Law of Crimes -2 (Cr.P.C)	4
26	Law of Evidence	4
27	Civil procedure code and Limitations Act	4
28	Law of Taxation	4
29	International Law	4
30	Juvenile Justice	4
31	Family Law	4
32	Labor Law	4
33	Law of Banking and NI Act	4
34	Law of Insurance	4
35	Cyber Law	4
36	International Trade Law	4
	Total	144
B	Multi-Disciplinary Courses	
1	Legal Research and Writing	3
2	Artificial Intelligence and Legal decisions	3
3	Media Law and Right To Information Act	3
4	Corporate social Responsibility	3

5	Competition Law	3
6	Health Law	3
7	Women and Law	3
8	Sports Law	3
	Total	24
C	Ability Enhancement Courses	
	Moot Court Exercises	2
	Moot Court Exercises	2
	Moot Court (Higher Judiciary)	4
	Total	8
D	Skill Enhancement Courses	
	Business Communication Skills	2
	legal Professional Communication skills	2
	Legal draft writing skills	2
	Life Skills -1	2
	Life Skills -2	2
	Total	10
E	Value Added Courses for all UG courses	
1	Indian Heritage and Culture (IHC)	3
2	General Knowledge and Current Affairs (GK & CA)	3
3	Professional Ethics and Advocacy Skills	3
	Total	9
F	Summer Internship	5
G	Apprenticeship	10
	Grand Total	210

Learning Objectives and Outcomes

- Legal Principles: Graduates will have a strong foundation in legal principles, including constitutional law, criminal law, contract law, and tort law.
- Legal Writing: Graduates will master the art of legal writing, including drafting legal documents, contracts, and legal opinions.
- Constitutional Law: Students will understand constitutional principles and their implications for legal and social issues.
- International Law: Students will gain knowledge of international law and its relevance in a globalized legal environment.
- Legal Research Skills: Students will acquire proficient legal research skills to access and analyze statutes, regulations, and case law.
- Problem-Solving Abilities: Graduates will enhance problem-solving abilities by applying legal knowledge to practical scenarios and legal cases.

- **Analytical Skills:** Students will cultivate critical thinking and analytical skills to assess complex legal issues and arguments.
- **Oral Advocacy:** Graduates will develop strong oral advocacy skills for effective courtroom representation and legal arguments.
- **Effective Communication:** Graduates will hone effective communication skills, including clear and persuasive writing and oral presentation.
- **Negotiation and Mediation:** Students will gain proficiency in negotiation and mediation techniques for conflict resolution.
- **Legal Ethics:** Students will understand and adhere to legal ethics and professional conduct standards in legal practice.
- **Social Responsibility:** Students will apply ethical principles to legal decisions, considering the welfare of clients and the broader society.
- **Human Rights Advocacy:** Graduates will advocate for human rights protection and understanding within legal systems.
- **Courtroom Advocacy:** Graduates will advocate effectively in legal proceedings, including litigation and alternative dispute resolution.
- **Legal Counseling:** Graduates will provide legal counsel and advice to individuals, organizations, or government entities.
- **Specialization Knowledge:** Students will explore legal specializations such as environmental law, family law, corporate law, and more.
- **Expertise Development:** Graduates will develop expertise in chosen legal fields through coursework and practical experience.
- **Career Advancement:** Graduates will prepare for a successful legal career, whether in private practice, public service, or corporate law.
- **Community Engagement:** Graduates will engage in community service, pro bono legal work, or advocacy to promote access to justice and social responsibility.

These learning objectives and outcomes provide a comprehensive framework for graduates of a 5-year Bachelor of Arts and Bachelor of Laws (BA LLB) program. Graduates will be well-prepared to excel in legal practice, public service, advocacy, or other roles that require a strong legal foundation and a deep understanding of social and ethical responsibilities.

5.5 4-Year- Bachelor of Business Administration with Honours - BBA (Hons)

BBA Hons (UG 4 Years) programme Structure

A	Major Stream courses (Core)	No of Credits
1	Principles of Management	3
2	Microeconomics	4
3	Business Legislation	3
4	Business Mathematics	4
5	Business Environment	3
6	Business Statistics	4
7	Management Accounting	4
8	Research Methodology	3
9	Operations Management	3
10	Corporate Ethics and Governance	3
11	Financial Accounting	4
12	Organizational Behaviour	3
13	Business Environment	3
14	Cost accounting	4
15	Entrepreneurship	3
16	Financial Accounting	4
17	Human Resources Management	3
18	Finance Management	4
19	Marketing Management	3
20	Data Analytics	4
21	Strategic Management	3
22	Entrepreneurship	4
23	International Business	4
	Total	80
B	Minor Stream Courses	
1	MM/FM/HRM/BA/ED/HM	4
2	MM/FM/HRM/BA/ED/HM	4
3	MM/FM/HRM/BA/ED/HM	4
4	MM/FM/HRM/BA/ED/HM	4
5	MM/FM/HRM/BA/ED/HM	4
6	MM/FM/HRM/BA/ED/HM	4
7	MM/FM/HRM/BA/ED/HM	4
8	MM/FM/HRM/BA/ED/HM	4
	Total	32
C	Multi-Disciplinary Courses	
1	Agri. Business Management	3
2	Artificial Intelligence and Business decisions	3
3	Project Management	3
	Total	9
D	Ability Enhancement Courses	
1	Employability Skills Training (EST) - 1	3
2	Employability Skills Training (EST) - 2	3
3	Employability Skills Training (EST) - 3	3
	Total	9

E	Skill Enhancement Courses	
1	Business Communication skills - 1	3
2	Presentations and report writing	3
3	Business Communication skills - 1	3
	Total	9
F	Value Added Courses for all UG courses	
1	Campus to Corporate - 1	3
2	Campus to Corporate -2	3
	Total	6
G	Summer Internship	5
H	Research Project/Dissertation	10
	Grand Total	160
1	Marketing Management (MM)	
	Course Name	Credits
1	Product and Brand Management	4
2	Logistics and Distribution Management	4
3	International Marketing	4
4	Advertisement and Sales Promotion	4
5	Consumer Behaviour	4
6	Digital Marketing	4
7	Services Marketing	4
8	Retail Management	4
	Financial Management (FM)	
	Course Name	Credits
1	Corporate Finance	4
2	Financial Markets and Services	4
3	Security Analysis and Portfolio Management	4
4	Behavioural Finance	4
5	Mergers and Acquisitions	4
6	Financial Risk Management	4
7	Infrastructure Finance	4
8	International Financial Management	4
	Course Name	Credits
1	Learning and Development	4
2	Performance Management and Reward Systems	4
3	Labour Law	4
4	Human Resource Planning	4
5	Organizational Development and Change Management	4
6	Strategic Human Resource Management	4
7	Compensation Management	4
8	Conflict Management and Negotiation	4
	Business Analytics (BA)	
	Course Name	Credits
1	Introduction to Advanced Technologies	4
2	Data Warehousing and Data Mining	4
3	Advanced Business Analytics	4

4	Advanced Excel	4
5	People Analytics	4
6	Finance analytics	4
7	Marketing Analytics	4
8	Big Data Analysis and Its Application	4
Entrepreneurship Development (ED)		
	Course Name	Credits
1	Business Ethics and Governance	4
2	Technology Integration and Innovation	4
3	New Venture Creation	4
4	Business Plan (Identification, Development and Writing)	4
5	Venture Capital and Private equity	4
6	Entrepreneurial Finance	4
7	Social Entrepreneurship	4
8	Family Business Management	4
Healthcare Management (HCM)		
	Course Name	Credits
1	Healthcare Policy and Regulation	4
2	Healthcare Operations Management	4
3	Healthcare Marketing	4
4	Healthcare Finance	4
5	Hospital Management	4
6	Healthcare Economics	4
7	Healthcare Information Systems	4
8	Healthcare Analytics	4

Learning Objectives and Outcomes

- Foundational Business Understanding: Graduates will have a comprehensive understanding of core business disciplines, including marketing, finance, management, accounting, economics, and operations management.
- Advanced Business Concepts: Students will explore advanced business concepts and theories to gain a deeper understanding of contemporary business practices.
- International Business Strategy: Students will develop strategies for conducting business in the global marketplace and navigating international challenges.
- Critical Thinking Skills: Students will cultivate critical thinking skills to analyze complex business challenges, assess opportunities, and make strategic decisions.
- Financial Strategy: Graduates will develop financial strategies to optimize organizational performance and ensure financial sustainability.
- Strategic Management: Students will gain expertise in strategic management, including strategy formulation, implementation, and evaluation.

- **Problem-Solving Ability:** Students will enhance problem-solving abilities by applying business knowledge to real-world scenarios and case studies.
- **Leadership Development:** Graduates will develop leadership skills and the ability to inspire and lead teams effectively in diverse business environments.
- **Professional Communication:** Students will enhance professional communication skills for clear and persuasive presentations, negotiations, and written reports.
- **Team Collaboration:** Graduates will develop strong teamwork and collaboration skills, facilitating effective teamwork in a global and multicultural context.
- **Ethical Decision-Making:** Graduates will apply ethical principles to business decisions, considering the impact on stakeholders and society.
- **Corporate Social Responsibility:** Students will understand and integrate corporate social responsibility (CSR) into business strategies and practices.
- **Global Business Awareness:** Graduates will gain a global perspective by studying international markets, cross-cultural management, and global trade dynamics.
- **Financial Management:** Graduates will analyze financial data, make informed financial decisions, and manage resources effectively.
- **Strategic Marketing:** Graduates will create and implement strategic marketing plans, conduct market research, and adapt to changing consumer behavior.
- **Innovation Management:** Students will foster innovation and creativity within organizations to drive growth and competitiveness.
- **Entrepreneurship:** Graduates will explore entrepreneurship principles, business startup strategies, and entrepreneurial thinking.
- **Digital Transformation:** Students will understand the impact of digital technologies on business models and operations, and leverage them for strategic advantage.
- **Networking and Relationship Building:** Graduates will develop networking skills and build professional relationships to enhance career opportunities.
- **Market Analysis:** Students will utilize data-driven market analysis to identify trends, opportunities, and competitive advantages.
- **Career Advancement:** Graduates will prepare for career advancement and leadership roles within organizations or entrepreneurial ventures.

These learning objectives and outcomes provide a comprehensive framework for graduates of a 4-year Bachelor of Business Administration with Honours (BBA Hons) program, equipping them with the knowledge, skills, and ethical awareness necessary to excel in leadership and management roles across various industries. Graduates will be prepared to drive organizational success, promote ethical business practices, and adapt to the dynamic business landscape.

5.6 1-Year – Master of Law (LLM) Courses

LLM (PG 1 Year) programme Structure

A LLM 1 Year Full time Family Law		
SEM -1		No of Credits
1	Research Methods & Legal Writing	3
2	Comparative Legal Systems	3
3	Legal Theory and Jurisprudence	3
4	Family Marriage and Matrimonial Remedies	3
5	Comparative Family Law	3
SEM -2		
6	Private International law and Family Disputes	3
7	Law and Justice in Globalised World	3
8	Law of Succession	3
9	Family Law-Emerging Trends	3
10	Family Disputes & ADR	3
11	Dissertation	3
	Total	33
B LLM 1 Year Full time Corporate Law		
SEM -1		No of Credits
1	Research Methods & Legal Writing	3
2	Comparative Legal Systems	3
3	Legal Theory and Jurisprudence	3
4	Company Law	3
5	Banking Law	3
SEM -2		
6	International Trade Law	3
7	Investment Law	3
8	Securities Law	3
9	Competition Law	3
10	Law and Justice in a globalised world	3
11	Dissertation	3
	Total	33
C LLM 1 Year Full time Cyber Law		
SEM -1		No of Credits
1	Research Methods & Legal Writing	3
2	Comparative Legal Systems	3
3	Legal Theory and Jurisprudence	3
4	Legal aspects of IPR	3
5	Cyber Laws and Information Technology Act	3
SEM -2		
6	Law of Copy Rights	3
7	Law of Cyber Crimes	3
8	Trade Marks in Cyber space	3
9	Law of Patents	3
10	Law and Justice in a globalised world	3
11	Dissertation	3
	Total	33

D	LLM 1 Year Full time International Law	
SEM -1		No of Credits
1	Research Methods & Legal Writing	3
2	Comparative Legal Systems	3
3	Legal Theory and Jurisprudence	3
4	Public International Law	3
5	Human Rights Law (National & International)	3
SEM -2		
6	International Trade Law	3
7	Law and Justice in a globalised world	3
8	Conflicts of Law (Private International Law)	3
9	Law of International Institutions	3
10	Transnational Dispute resolution	3
11	Dissertation	3
	Total	33
E	LLM 1 Year Full time Constitutional & Administrative Law	
SEM -1		No of Credits
1	Research Methods & Legal Writing	3
2	Comparative Legal Systems	3
3	Legal Theory and Jurisprudence	3
4	Constitutionalism: Pluralism & Federalism	3
5	Fundamental Rights & Directive principles of State Policy	3
SEM -2		
6	Union- State Relations & Constitutional Governance	3
7	Law & Justice in Globalised World	3
8	Local Self Government Law	3
9	Comparative Administrative Law	3
10	Public Policy & Development	3
11	Dissertation	3
	Total	33

Learning Objectives and Outcomes

- Advanced Legal Knowledge: Graduates will have an in-depth understanding of specific legal areas such as international law, corporate law, human rights law, or environmental law.
- Legal Writing: Graduates will master advanced legal writing skills for drafting legal documents, opinions, and briefs.
- International Legal Systems: Students will explore international legal systems, treaties, and international organizations to understand global legal dynamics.
- Legal Ethics: Graduates will understand and navigate the ethical complexities of legal practice, including conflicts of interest and client confidentiality.

- **Comparative Law:** Graduates will analyze and compare legal systems from different jurisdictions to gain cross-cultural legal perspectives.
- **Courtroom Advocacy:** Graduates will advocate effectively in legal proceedings, including litigation, arbitration, and mediation.
- **Critical Analysis:** Students will cultivate critical thinking skills to evaluate legal arguments, theories, and case law thoroughly.
- **Specialization Proficiency:** Graduates will specialize in a specific field of law and become proficient in its principles and applications.
- **Problem-Solving Abilities:** Students will enhance problem-solving abilities by applying legal knowledge to practical legal challenges and case studies.
- **Interdisciplinary Understanding:** Students will understand how law intersects with other disciplines, such as business, ethics, and technology, to provide comprehensive solutions.
- **Ethical Practice:** Graduates will apply ethical principles to legal practice, upholding professional conduct and integrity.
- **Oral Advocacy:** Students will enhance oral advocacy skills for effective courtroom representation, negotiations, and oral arguments.
- **Legal Research Contribution:** Graduates will contribute to legal scholarship through original research, publications, or presentations.
- **Legal Practice Exposure:** Students will gain exposure to practical legal experience through internships, clinics, or externships.
- **Client Counseling:** Graduates will provide legal counsel and advice to clients, addressing their legal needs and concerns.
- **Policy Analysis:** Graduates will analyze legal policies and regulations and engage in advocacy efforts to influence legal reform or change.
- **Public Interest Work:** Graduates will engage in public interest legal work, promoting access to justice and social responsibility.

These learning objectives and outcomes provide a comprehensive framework for graduates of 1-year Master of **Law (LLM) courses**. Graduates will be well-prepared to excel in legal practice, research, advocacy, and policy analysis in their chosen legal specialization.

5.7

1-Year – Diploma in Healthcare Tourism and Management

	Healthcare Tourism and Management	
SEM -1		No of Credits
1	Healthcare Systems and Policies	3
2	Introduction to Tourism and Hospitality	3
3	Healthcare Tourism and Destinations	3
4	Financial Management in Healthcare	3
5	Medical Services and Treatments	3
SEM -2		
6	Global Healthcare Systems and Trends	3
7	Healthcare Marketing and Promotion	3
8	Risk Management in Medical Tourism	3
9	Healthcare IT and Data Management	3
10	Legal and Ethical Issues in Healthcare	3
11	Internship/Project work in Healthcare Tourism	3
	Total	33

Learning Objectives and Outcomes

- **Healthcare Industry Overview:** Students will have a comprehensive understanding of the global healthcare industry, including its structure, trends, and challenges.
- **Medical Terminology:** Students will be proficient in medical terminology to effectively communicate with healthcare professionals and tourists.
- **Healthcare Services:** Students will have knowledge of various healthcare services, including medical, wellness, and spa treatments, catering to tourists' needs.
- **Patient Experience Management:** Students will be skilled in managing and enhancing the patient experience, ensuring tourists receive quality care and services.
- **Hospitality and Customer Service:** Students will excel in providing exceptional hospitality and customer service in healthcare settings.
- **Healthcare Laws and Regulations:** Students will understand healthcare laws and regulations in different countries and their impact on healthcare tourism.
- **Healthcare Marketing:** Students will be proficient in healthcare marketing strategies and tactics to attract medical tourists.
- **Medical Records Management:** Students will effectively manage medical records and maintain patient confidentiality.
- **Cost and Financial Management:** Students will be skilled in managing healthcare costs and financial aspects of medical tourism services.
- **Health and Safety:** Students will prioritize health and safety standards to ensure a safe environment for tourists and healthcare providers.

- **Medical Facilitation:** Students will assist medical tourists in obtaining necessary medical procedures, visas, accommodations, and transportation.
- **Healthcare Technology:** Students will be familiar with healthcare technologies such as telemedicine and electronic health records.
- **Patient Advocacy:** Students will advocate for patients' rights and provide support during their healthcare journey.
- **Crisis Management:** Students will be prepared to handle healthcare emergencies and crises, ensuring tourists' well-being.
- **Risk Assessment and Management:** Students will identify and mitigate risks associated with healthcare tourism operations.
- **Research and Trends:** Students will stay updated on healthcare tourism trends and conduct research to improve services and attract medical tourists.

These learning objectives and outcomes will equip graduates with the knowledge and skills needed to excel in the field of **Healthcare Tourism and Management**.

5.8 1-Year Diploma in Event Management

	Event Management	
SEM -1		No of Credits
1	Introduction to Event Management	3
2	Event Planning and Design	3
3	Event Budgeting and Finance	3
4	Event Marketing and Promotion	3
5	Event Logistics and Operations	3
SEM -2		
6	Event Production	3
7	Event Execution, Client and Vendor relations	3
8	Risk Management in Medical Tourism	3
9	Sponsored and Non- Sponsored Events	3
10	Public Relations, Media Relations and Social Media Management	3
11	Internship/Project work in Event Management	3
Total		33

Learning Objectives and Outcomes

- **Event Planning:** Students will demonstrate proficiency in planning events of various sizes and types, from corporate conferences to social gatherings.
- **Budget Management:** Students will be skilled in creating and managing event budgets, ensuring cost-effective planning and execution.

- **Event Concept Development:** Students will develop unique and innovative event concepts and themes.
- **Event Logistics:** Students will effectively handle event logistics, including venue selection, transportation, and equipment coordination.
- **Vendor and Supplier Coordination:** Students will excel in negotiating with and managing vendors and suppliers to secure necessary services and resources for events.
- **Event Marketing and Promotion:** Students will be proficient in developing marketing strategies to promote events and attract attendees.
- **Event Catering and Food Services:** Students will understand the principles of event catering and food service management.
- **Risk Management:** Students will identify potential risks associated with events and implement strategies to mitigate them.
- **Event Timeline Management:** Students will create and manage event timelines to ensure all tasks are completed on schedule.
- **Creativity and Design:** Students will demonstrate creativity in event design, decor, and theming to create memorable experiences.
- **Technical Proficiency:** Students will understand and operate event technology and audiovisual equipment effectively.
- **Sustainability Practices:** Students will incorporate sustainable and eco-friendly practices into event planning and execution.
- **Client Relationship Management:** Students will build and maintain strong client relationships, ensuring client satisfaction.
- **Team Leadership:** Students will demonstrate leadership skills in managing event teams and coordinating their efforts.
- **Entertainment and Talent Booking:** Students will be skilled in booking entertainment and talent suitable for different event types.
- **Event Portfolio Development:** Students will create a portfolio showcasing their successful event projects and experiences.

These learning objectives and outcomes will equip Students with the knowledge and skills necessary to excel in the field of Event Management and produce successful and memorable events.

Annexure - 8

SCHOOL OF HEALTH AND BIO-MEDICAL SCIENCES

- | | |
|------------------------------|---|
| 1. Name of the School | : School of Health and Bio-Medical Sciences |
| 2. Departments | : As provided in Section 10 of the Detailed Project Report (DPR) |

3. Courses offered: As provided in Section 10 of the Detailed Project Report (DPR)

4. Scope and Objectives of the courses

Scope: The proposed courses are a fast-emerging fields having substantial potential for applications in the 21st century in different areas varying from basic to medical sciences and various other frontiers of contemporary science and technology. These courses will offer diverse and rewarding career opportunities in research & development, diagnostics, therapeutics and drive innovation in the healthcare and biotechnology sector along with preparing students for entrepreneurship and start-ups.

Objectives:

- To explore and incorporate current developments and latest advancements in technologies in biological science, especially those relevant to basic and medical sciences.
- To provide diverse and rewarding career opportunities in research, development, innovation, healthcare, venture capital firms, and biotech industries.
- To nurture students' ability to contribute to scientific discoveries and innovations in Human Healthcare and Biotechnology.
- To encourage students to interpersonal skills and enhance critical thinking, which are mentally, emotionally, and logically balanced.
- To cultivate an entrepreneurial mindset and prepare students for leadership roles.

5. Structure of Course curriculum for each Diploma or Degree

One-Year Diploma in Diagnostics and Hospital Management

- Public Health and Healthcare policies
- Management in Healthcare Ecosystem
- Healthcare Analytics
- Types of Diagnostics and their Use in Disease Diagnosis
- General and Emergency/Traumacare Management in Healthcare Systems
- Importance of Hygiene and Hospital Management
- Traumacare, Intensivecare, Specialcare for Physically Challenged Patients

Practicals and Project Work (Practicals Everyday)

Maintenance of Case Sheets (Project work for 3-4-months)

One-Year Diploma in Protein Modeling and Structure-Based Drug Designing

- (a). Introduction to Proteins, Protein Foldings and Their Biological Functions
- (b). Biostatistics, BioPython, BioPERL Programming
- (c). Proteomics, Protein Chips in Disease Diagnosis
- (d). Molecular Modeling, Docking
- (e). Process of Ligand- and Structure-Based Drug Designing
- (f). Rational Drug Design to aid the Drug Discovery Process

Practicals/Dissertation = 10-12-weeks

Application of Skills related to In Silico Drug Designing on Various Drug Targets

UG (Hons) with Major and Minor Disciplines

- 4 Year – BSc (Hons) Biomedical Sciences (Major)
Medical Devices & Diagnostics (Minor)

First Year (Semesters I) (Major)

- (1). Bio-Organic Chemistry
- (2). Cell Biology
- (3). Molecular Biology
- (4). Principles of Genetics
- (5). Biochemistry
- (6). Medical Microbiology

Practicals/Lab

First Year (Semesters II) (Major)

- (1). Medicinal Chemistry
- (2). Medical Genetics
- (3). Medical Biochemistry
- (4). Basics of Toxicology
- (5). Genomics, Genes, Non-coding DNA and RNA
- (6). Basics of Human Anatomy

Labs/Practical Classes

Second Year (Semesters III) (Major)

- (1). Pharmacology
- (2). Basics of Endocrinology
- (3). Hormones and Reproduction
- (4). Basics of Immunology
- (5). Genetic Engineering –Principles and Advantages
- (6). Biophysics and its relevance to Medical Sciences

Labs/Practical Classes

Second Year (Semesters IV) (Major)

- (1). Principles of Cell and Radiation Biology
- (2). Human Pathology
- (3). Molecular Endocrinology
- (4). Advanced Immunology and Immunogenetics
- (5). Human Physiology
- (6). Methods in Lab Techniques

Labs/Practical Classes

Third Year (Semesters V) (Major)

- (1). Genome Sequences, Gene Chips, SNPs and Personalized Medicine
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genome Editing in Human Healthcare
- (4). Genetic Counseling
- (5). Basics of Drugs and Their Bioavailability
- (6). Clinical Pathology

Labs/Practical Classes

Third Year (Semesters VI) (major)

- (1). Medical Ethics and Hospital Management
- (2). Proteomics, Protein Chips and Their Role in Diagnosis

- (3). Genome Editing in Human Healthcare
- (4). Genetic Counselling
- (5). Basics of Drugs and Their Bioavailability
- (6). Clinical Pathology

Labs/Practical Classes

Fourth Year (Semesters VII) (Major)

- (1). Hospital Management
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genome Editing in Human Healthcare
- (4). Genetic Counselling
- (5). Biostatistics
- (6). Biological and Medical Databases and their Use

Labs/Practical Classes

Fourth Year (Semesters VIII) (Medical Devices and Diagnostics - Minor)

- (1) First Aid Equipment like Bandage, Thermometer, Blood Pressure Apparatus
- (2). Simple Medical Devices
X-ray, ECG, Echo, TMT, Pulse Oximeter, Pedometer, Nebulizers
- (3). Complex Medical Devices
PET Scan, CT-Scan, Pace Maker, MRI Scan
- (4). Medical Ethics, Biosample management
- (5). Disposal of Medical Material such as Needles, Cotton, Biomaterial, and Radio Active material
- (6). Diagnostics (PCR-based), Immunological diagnostic Techniques, ELISA Technique, Genetic tests, Biomarker tests, Biopsy, Colonoscopy

Dissertation/Internship (Students should submit their Research Work)

UG (Hons) with Major and Minor Disciplines

- 4 Year – BSc (Hons) Biomedical Sciences (Major)
Biotechnology Entrepreneurship and Innovation (Minor)

First Year (Semesters I) (Major)

- (1). Bio-Organic Chemistry
- (2). Cell Biology
- (3). Principles of Genetics
- (4). Biochemistry
- (5). Medical Microbiology
- (6). Molecular Biology

Practicals/Labs

First Year (Semesters II) (Major)

- (1). Medicinal Chemistry
- (2). Medical Genetics
- (3). Medical Biochemistry
- (4). Basics of Toxicology
- (5). Genomics, Genes, Non-coding DNA and RNA
- (6). Basics of Human Anatomy

Labs/Practical Classes

Second Year (Semesters III) (Major)

- (1). Pharmacology
- (2). Basics of Endocrinology
- (3). Hormones and Reproduction
- (4). Basics of Immunology
- (5). Genetic Engineering –Principles and Advantages
- (6). Biophysics and its relevance to Medical Sciences

Labs/Practical Classes

Second Year (Semesters IV) (Major)

- (1). Principles of Cell and Radiation Biology
- (2). Human Pathology
- (3). Molecular Endocrinology

- (4). Advanced Immunology and Immunogenetics
- (5). Human Physiology
- (6). Methods in Lab Techniques

Labs/Practical Classes

Third Year (Semesters V) (Major)

- (1). Genome Sequences, Gene Chips, SNPs and Personalized Medicine
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genome Editing in Human Healthcare
- (4). Genetic Counseling
- (5). Basics of Drugs and Their Bioavailability
- (6). Clinical Pathology

Labs/Practical Classes

Third Year (Semesters VI) (major)

- (1). Medical Ethics and Hospital Management
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genome Editing in Human Healthcare
- (4). Genetic Counseling
- (5). Basics of Drugs and Their Bioavailability
- (6). Clinical Pathology

Labs/Practical Classes

Fourth Year (Semesters VII) (Major)

- (1). Hospital Management
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genome Editing in Human Healthcare
- (4). Genetic Counselling
- (5). Biostatistics
- (6). Biological and Medical Databases and their Use

Labs/Practical Classes

Fourth Year (Semesters VIII) (Biotechnology Entrepreneurship and Innovation -Minor)

This minor course basically prepares students to develop an entrepreneurial mindset and initiate start-up businesses with innovative strategies. Such start-up businesses will help to create jobs and improve National Economy. This course will help develop teamwork, and leadership. They should solve societal problems through Biotechnological approaches.

- (1). Opportunities in the Preparation of Diagnostic Kits
- (2). Opportunities in the Preparation of Simple Medical Devices and Implants
- (3). Opportunities in the Preparation of Pharmaceutically Important Recombinant Therapeutic Proteins
- (4). Commercial Preparation of Human Mono or Polyclonal Antibodies
- (5). Commercial Preparation of Peptides and Peptide Mimicking Hormones
- (6). Commercial Vaccine Production for Viral and Bacterial Diseases
- (7). Commercial Purification of Human Proteins/Enzymes

Dissertation/Internship (Students should submit their Research Work)

- 4 Year - BSc Medical Biotechnology (Major)

Biotechnology Entrepreneurship (Minor)

First Year (Semesters I) (Major)

- (1). Cell Biology
- (2). Principles of Bio-organic Chemistry
- (3). Basics of Genetics
- (4). Principles of Biochemistry
- (5). Basics of Microbiology
- (6). Molecular Biology

Practicals/Labs

First Year (Semesters II) (Major)

- (1). Medicinal Chemistry
- (2). Medical Genetics
- (3). Medical Biochemistry

- (4). Basics of Toxicology
- (5). Immunology
- (6). Human Physiology

Labs/Practical Classes

Second Year (Semesters III) (Major)

- (1). Pharmacology
- (2). Basics of Endocrinology
- (3). Hormones and Reproduction
- (4). Advanced Immunology and Immunogenetics
- (5). Genetic Engineering – Principles and Advantages
- (6). Biophysics and its relevance to Medical Sciences

Labs/Practical Classes

Second Year (Semesters IV) (Major)

- (1). Principles of Cell and Radiation Biology
- (2). Principles of Biophysics and Their Role in Medical Devices
- (3). Molecular Endocrinology
- (4). Genome Sequences, SNPs, Importance
- (5). Protein Sequences, Variations, Their Use as Biomarkers in Diseases
- (6). Biological and Medical Databases, Their Use in Biotechnology

Labs/Practical Classes

Third Year (Semesters V) (Major)

- (1). Gene Chips, Analysis of SNPs and Personalized Medicine Importance of Non-coding DNA, Non-coding RNA, their Role in Diseases
- (2). Proteomics, Protein Chips and Their Role in Diagnosis
- (3). Genetic Engineering – Principles and Advantages, Genome Editing in Human Healthcare
- (4). Pre-Natal Diagnosis, Genetic Counseling
- (5). Basics of Drugs and Their Bioavailability
- (6). Clinical Pathology

Labs/Practical Classes

Third Year (Semesters VI) (major)

- (1). BioAnalytical Tools
- (2). Immunology-and Molecular Biology-Based Diagnostics
- (3). Medical Ethics and Hospital Management
- (4). Simple Medical Devices - Principles
- (5). Biostatistics, Bioprograming in Python and Perl
- (6). Protein Modeling, Molecular Dynamic Simulations, Drug Designing

Labs/Practical Classes

Fourth Year (Semesters VII) (Major)

- (1). Plant Cells for the Production of Cosmetics, Skincare Products and Food Ingredients
- (2). Bioprocess and Fermentor Technology
- (3). Production of Pharmaceutically Important Compounds and Antioxidant Molecules from Plant Cells (used in Pharmacy such as Astaxanthin)
- (4). Commercial Purification of Human Proteins/Enzymes
- (5). Human Cell Culture Technology and Screening of Drug-Like Molecules for Anticancer Activities
- (6). Stem Cell Therapy, Bioethics and Regulatory Issues

Labs/Practical Classes

Fourth Year (Semesters VIII) (Biotechnology Entrepreneurship – Minor)

- (1). Opportunities in the Preparation of Diagnostic Kits
- (2). Opportunities in the Preparation of Simple Medical Devices and Implants
- (3). Opportunities in the Preparation of Pharmaceutically Important Recombinant Therapeutic Proteins
- (4). Commercial Preparation of Human Mono or Polyclonal Antibodies
- (5). Commercial Preparation of Peptides and Peptide Mimicking Hormones
- (6). Commercial Vaccine Production for Viral and Bacterial Diseases

Dissertation/Internship (Students should submit their Research Work)

- 2-Year PG Course in MSc Biomedical Diagnosis and Therapeutic Sciences (Major)
Artificial Intelligence for Biomedicine and Healthcare (Minor)
Bio Entrepreneurship (Minor)

First Year (Semester I)

- (1). Principles of Biochemistry
- (2). Protein Conformations and Functions
- (3). Immunology
- (4). Molecular Biology
- (5). Toxicology
- (6). Human Pathology

Labs/Practical Classes

First Year (Semester II)

- (1). Genetic Disorders and Syndromes
- (2). SNPs, Long Non-coding RNAs, Piwi RNAs – Role in Diseases
- (3). Genes and Proteins as Biomarkers in Disease Diagnosis
- (4). Immuno-based Diagnostics
- (5). Molecular Biology-Based Diagnostics
- (6). Genetic Engineering – Principles and

Labs/Practical Classes

Second Year (Semester III)

- (1). Production of Selected Antibiotics and Vaccines
- (2). Gene Therapy, Genome Editing, CRISPR-Cas9 Technology for therapy
- (3). Production of Human Recombinant Proteins for Therapy
- (4). Production of Therapeutic Peptides
- (5). Production of Mono- and Polyclonal Antibodies
- (6). Stem Cells, and Stem Cell Therapy-Bioethics and Regulatory Issues

Labs/Practical Classes

Second Year (Semester IV)-Artificial Intelligence for Biomedicine and Healthcare (Minor)

- (1). Introduction to Artificial Intelligence (AI) and Artificial Neural Networks (ANN), Maintenance of Electronic Health Records
- (2). Biomedical Imaging and Diagnostics through AI (for Improving Movement Related to Injury, Birth Defects, Neurological Disorders)

- (3). Early Detection of Diseases through AI
- (4). Pattern recognition, and Machine Learning (ML) in Disease Detection
- (5). AI-Based Algorithms; Digitalized Histopathology for Precise Detection, Classification, and Prognostic Evaluation of Cancer Types
- (6). Challenges in the use of AI and ML

Second Year (Semester IV)-Bioenterpreneurship (Minor)

- (1). Opportunities in the Preparation of Diagnostic Kits
- (2). Opportunities in the Preparation of Simple Medical Devices and Implants
- (3). Opportunities in the Preparation of Pharmaceutically Important Recombinant Therapeutic Proteins
- (4). Commercial Preparation of Human Mono or Polyclonal Antibodies
- (5). Commercial Preparation of Peptides and Peptide Mimicking Hormones
- (6). Commercial Vaccine Production for Viral and Bacterial Diseases

Dissertation/Internship (Students should submit their Research Work)

- 2-Year PG Course in MSc Biomedical Diagnosis and Therapeutic Sciences (Major)
Artificial Intelligence for Biomedicine and Healthcare (Minor)
Bio Entrepreneurship (Minor)

First Year (Semester I)

- (1). Principles of Biochemistry
- (2). Protein Conformations and Functions
- (3). Immunology
- (4). Molecular Biology
- (5). Toxicology
- (6). Human Pathology

Labs/Practical Classes

First Year (Semester II)

- (1). Genetic Disorders and Syndromes
- (2). SNPs, Long Non-coding RNAs, Piwi RNAs – Role in Diseases
- (3). Genes and Proteins as Biomarkers in Disease Diagnosis
- (4). Immuno-based Diagnostics
- (5). Molecular Biology-Based Diagnostics
- (6). Genetic Engineering – Principles and

Labs/Practical Classes

Second Year (Semester III)

- (1). Production of Selected Antibiotics and Vaccines
- (2). Gene Therapy, Genome Editing, CRISPR-Cas9 Technology for therapy
- (3). Production of Human Recombinant Proteins for Therapy
- (4). Production of Therapeutic Peptides
- (5). Production of Mono- and Polyclonal Antibodies
- (6). Stem Cells, and Stem Cell Therapy-Bioethics and Regulatory Issues

Labs/Practical Classes

Second Year (Semester IV)-Artificial Intelligence for Biomedicine and Healthcare (Minor)

- (1). Introduction to Artificial Intelligence (AI) and Artificial Neural Networks (ANN), Maintenance of Electronic Health Records
- (2). Biomedical Imaging and Diagnostics through AI (for Improving Movement Related to Injury, Birth Defects, Neurological Disorders)
- (3). Early Detection of Diseases through AI
- (4). Pattern recognition, and Machine Learning (ML) in Disease Detection
- (5). AI-Based Algorithms; Digitalized Histopathology for Precise Detection, Classification, and Prognostic Evaluation of Cancer Types
- (6). Challenges in the use of AI and ML

Second Year (Semester IV)-Bioenterpreneurship (Minor)

- (1). Opportunities in the Preparation of Diagnostic Kits
- (2). Opportunities in the Preparation of Simple Medical Devices and Implants
- (3). Opportunities in the Preparation of Pharmaceutically Important Recombinant Therapeutic Proteins
- (4). Commercial Preparation of Human Mono or Polyclonal Antibodies
- (5). Commercial Preparation of Peptides and Peptide Mimicking Hormones
- (6). Commercial Vaccine Production for Viral and Bacterial Diseases

Second Year (Semester IV)

Industrial Tour and

Internship/Dissertation and Submission of Project Report

Structure of Course Curriculum for 3 Year B.Sc and 4-Year B.Sc (Hons) in Bio-Medical Sciences (Major)

Medical Devices and Diagnostics (Minor)

A	Major Stream courses (Core)	No of Credits
1	Bio-Organic Chemistry	1
2	Cell Biology	1
3	Molecular Biology	2
4	Principles of Genetics	2
5	Biochemistry	1
6	Medical Microbiology	2
7	Practicals/Labs (End of First Semester)	2
	Sub-Total	11
8	Medicinal Chemistry	1
9	Medical Genetics	2
10	Medical Biochemistry	2
11	Basics of Toxicology	2
12	Genomics, Genes, Non-coding DNA and RNA	1
13	Basics of Human Anatomy	1
14	Labs/Practical Classes (End of Second Semester)	2
	Sub-Total	11
15	Pharmacology	2
16	Basics of Endocrinology	1
17	Hormones and Reproduction	1
18	Basics of Immunology	2
19	Genetic Engineering – Principles and Advantages	1
20	Biophysics and its relevance to Medical Sciences	1
21	Labs/Practical Classes (End of III Semester)	1
	Sub-Total	9
22	Principles of Cell and Radiation Biology	2
23	Human Pathology	2
24	Molecular Endocrinology	1
25	Advanced Immunology and Immunogenetics	1
26	Human Physiology	1
27	Methods in Lab Techniques	1
28	Labs/Practical Classes (End of IV Semester)	2
	Sub-Total	10
29	Genome Sequences, Gene Chips, SNPs and Personalized Medicine	2
30	Importance of Transcriptomics and Metabolomics in Disease Diagnosis	1

31	Proteomics, Protein Chips and Their Role in Diagnosis	1
32	Genome Editing in Human Healthcare	1
33	Prenatal Diagnosis and Genetic Counseling	2
34	Basics of Drugs and Their Bioavailability	1
35	Labs/Practical Classes (End of V Semester)	2
	Sub-Total	10
36	Medical Ethics	2
37	Standard Operating Practices and Data Recording	1
38	Hospital Management	2
39	Clinical Pathology	1
40	Healthcare Economics	1
41	Health Administration	1
42	Labs/Practical Classes (End of VI Semester)	1
43	Sub-Total	9
Total Credits for the three-year Degree course (Major Only)		60
44	Advanced Molecular Biology	1
45	Biological and Medical Databases	1
46	Detection of Coding and Non-Coding Sequences, Detection of Promoter Regions using Software Technologies	2
47	Construction of Phylogenetic Trees and Evolutionary Tendencies	2
48	Algorithms Used for Searching SNPs, Chromosomal Localizations and Synteny	2
49		2
50	Labs/Practical Classes (End of VII Semester)	1
51	Sub-Total	11
52	Protein Structures and Importance of Protein Folding	1
53	Construction of 3-D Protein Structures	1
54	Ligand – Protein Binding, Construction of Ramachandran Plots	1
55	3D pharmacophore mapping, Molecular Docking and Interaction Networks	2
56	Quantitative-Structure Activity Relationship (QSAR) Comparative molecular field analysis (CoMFA)	1
57	Computational Drug Designing Comparative molecular similarity indices analysis (CoMSIA) Conformational analysis, Monte Carlo simulation Molecular Dynamic Simulations	2
58	Lab/Practical Classes	2
59	Sub-Total of Credits at the End of Semester VII	10
Total Number of Credits for the Four-Year Honours Degree Course (Major Only)		80 credits

		Medical Devices and Diagnostics (Minor Stream for 3-Year UG or 4-Year Honours Course)	
	60	First Aid Equipment (Bandage, Thermometer, Blood Pressure Apparatus)	2
	61	Use of Simple Medical Devices (X-ray, ECG, Echo, TMT, Pulse Oximeter, Pedometer, Nebulizers)	3
	62	Use of Complex Medical Devices (PET Scan, CT-Scan, Pace Maker, MRI Scan)	3
	63	Medical Ethics, Biological Sample Management	2
	64	Safe disposal of Medical Material such as Needles, Cotton, Biomaterial, Blood and Radio Active material	2
	65	Testing Eyes, Ear and Throat	2
	66	Labs/Practical Classes	2
	67	Sub-Total	16
	68	Basics of diagnostics, How to diagnose a disease or disorder	2
	69	Immunology-Based diagnostics, ELISA Technique	2
	70	Molecular biology-based diagnostics (PCR-based)	3
	71	Genetic tests, Screening for Chromosomal Number and Abnormalities	3
	72	Biomarker tests-based on SNPs	2
	73	Biopsies, Microtomy and Cytological tests, Microscopic studies	2
	74	Labs/Practical Classes	2
	75	Sub-Total of credits	16
	76	Total Number of Credits for the Minor Stream	32
		Role of Artificial Intelligence and Machine Learning in Biomedical Sciences (Multidisciplinary Stream for 3-Year UG or 4-Year Honours Course)	
	77	What are Neural Networks? Their Use in Biomedical Sciences	1
	78	Basics of Algorithms and their Use in Biomedicine	1
	79	Basics of Artificial Intelligence	2
	80	Principles of Machine Learning	2
	81	Diagnosis Based on Pattern Recognition	1
	82	Diagnosis Based on Machine Learning Techniques	1
	83	Labs/Practical classes	1
	84	Total Number of Credits for the Multidisciplinary Stream	9
		Total Number of Credits for the Major, Minor, and Multidisciplinary Course (3 or 4-Year Degree or Honours Course)	121

Learning Objectives and Outcomes

4-Year- B.Sc/B.S (Hons) - Bio Medical Sciences (Major) – Medical Device & Diagnostics (Minor)

- **Advanced Biological Knowledge:** Graduates will demonstrate a comprehensive understanding of advanced biological concepts, including genetics, cellular biology, and molecular biology.
- **Medical Device Development:** Students will gain knowledge of the process of developing medical devices, from concept to commercialization.
- **Regulatory Compliance:** Graduates will understand the regulatory requirements for medical devices and diagnostics and ensure compliance with relevant laws and standards.
- **Clinical Trial Management:** Graduates will learn the principles of conducting clinical trials for medical devices and diagnostics.
- **Quality Control and Assurance:** Graduates will implement quality control and assurance measures to ensure the safety and efficacy of medical devices.
- **Biomedical Research Skills:** Students will acquire proficiency in laboratory techniques, experimental design, and data analysis for biomedical research.
- **Medical Ethics:** Graduates will understand and apply ethical principles in biomedical research and clinical settings.
- **Disease Mechanisms:** Graduates will analyze the molecular and cellular mechanisms underlying various diseases, including cancer, cardiovascular diseases, and infectious diseases.
- **Diagnostic Techniques:** Students will be skilled in using advanced diagnostic techniques such as PCR, ELISA, and next-generation sequencing.
- **Immunology:** Graduates will have a strong foundation in immunology, including immune system function and the development of immunotherapies.
- **Advanced Microbiology:** Students will specialize in microbiology, including the study of pathogenic microorganisms and antimicrobial strategies.
- **Bioinformatics:** Graduates will utilize bioinformatics tools to analyze large-scale biological data and conduct genomic research.
- **Biomedical Imaging:** Students will understand and interpret biomedical imaging modalities such as MRI, CT scans, and PET scans.
- **Biomedical Instrumentation:** Graduates will be proficient in the use and maintenance of biomedical instruments used in diagnostics and patient care.
- **Medical Device Innovation:** Students will explore innovative approaches to solving healthcare challenges through the development of new medical devices.

- Biostatistics: Graduates will apply statistical analysis to evaluate the effectiveness and safety of medical devices and diagnostic tests.
- Market Analysis: Graduates will assess market trends and analyze the commercial viability of medical devices and diagnostics.
- Healthcare Entrepreneurship: Graduates will understand the entrepreneurial aspects of bringing medical devices and diagnostics to the market.

These learning objectives and outcomes will prepare graduates to excel in the field of Biomedical Sciences with a focus on Medical Devices and Diagnostics, contributing to advancements in healthcare and biotechnology.

6. Employment Opportunities for the Graduates in Bio-Medical Sciences.

The graduates and honours degree holders can discover the medical developments which are a fast growing field since the pandemics are surfacing and resurfacing. This can improve the lives of humans suffering from many diseases and disorders. The skills of graduates in Biomedical Sciences can be applied to a range of scientific, medical, and research careers. Following are the job opportunities for the course:

- Biomedical scientist in any research organization or University or Hospital.
- Clinical scientist, and especially in clinical biochemistry
- Clinical scientist in haematology
- Clinical research associate
- As a Microbiologist in the research organizations or in the diagnostic centers
- As a Biotechnologist in diverse Biotech Companies and Start-Ups
- As Clinical Scientists in Immunology
- As Forensic Scientists
- As an Associate of Physician
- Genetic Counsellors
- As Research Scientist (medical field)
- As Research Scientist in Life Sciences
- As Toxicologist
- As a Scientific Laboratory Technician
- As a Diagnostic Scientist

- As a Hospital Management Executive
- As a Crime Scene Investigators
- As Business Executives in Start-Up Businesses
- Medical Sales Representative
- Medical Science Liaison Officer
- Neuroscientist
- Teaching Associate
- Technician
- As Occupational Hygienist
- As a Professional in Scientific Writing

Annexure - 9

CENTER FOR RESEARCH AND INNOVATION

1. **Name of the School** : MNR Center for Research and Innovation (MNR-CRI)
2. **Departments** : As provided in Section 10 of the Detailed Project Report (DPR)

3. **Courses offered:** As provided in Section 10 of the Detailed Project Report (DPR)

4. **Scope and Objectives of the courses**

The MNR Center for Research and Innovation (MNR-CRI) aims to develop a comprehensive research and development platform for the students, scholars and clinicians to perform research based studies and innovation in the field of biomedical science. The institute aims to be a premier research and innovation hub, fostering a culture of excellence, curiosity, and creativity in the field of medical science and technology. It is envisioned as a vibrant and dynamic space where scholars, researchers, clinicians and innovators from interdisciplinary fields can collaborate, exchange ideas, and contribute to cutting-edge research and development. The center will be an integral part of the proposed MNR University, dedicated to advancing knowledge, solving real-world challenges, and making significant contributions to the health care sectors, industries and help to improve the quality of life among patients.

Objectives:

- To organise, execute and monitor the Research Internships for all the programmes offered by all departments.
- Promote research excellence across all disciplines.
- Produce high-quality research publications and encourage conference presentations.
- Facilitate the transformation of research outputs into marketable products and services.
- Forge strong industry partnerships to bridge academia and the corporate world.
- Provide a platform for student collaboration, research participation, and skill enhancement.
- Focus on addressing global health care challenges for societal impact and sustainability.
- Build research capacity through workshops and training programs.

- Foster collaborations with renowned international institutions and research organizations.
- Uphold ethical guidelines, data privacy regulations, and responsible research practices.

5. Existing Research Grants that will strengthen our claim of introducing the unique and first of their kind courses

The institution is already existing in a multidisciplinary university setup with ongoing multiple research activities in health care and innovation funded by Govt. of India as follows:

- Department of Science and Technology, SERB, Govt. of India (2 grants sanctioned),
- IKS Division of All India Council for Technical Education (AICTE), Govt. of India, (1 grant sanctioned)
- Indian Council of Medical Research (ICMR), Govt. of India (1 grant accepted).
- Has high-quality research publications in international peer reviewed journals.
- The MNR Medical College & Hospital has also been selected by ICMR for participation in a multicentric collaborative study examining the causes and risk factors for stillbirths in a USG-confirmed pregnancy cohort.

6. Structure of Course Curriculum for each will be designed after consulting the Schools since it has to take up multi-disciplinary and inter-disciplinary teaching and research

7. Learning Objectives and Outcomes

2- Year-MSc/M.S in Biomedical Research & Innovation

Learning Objectives and Outcomes

4-Year- B.Sc/B.S (Hons) - Bio Medical Sciences (Major) –

Medical Device & Diagnostics (Minor)

- Understanding Biomedical Principles: Postgraduate students will enhance their solid understanding of fundamental biomedical concepts and principles.
- Biomedical Literature Review: Postgraduate students will critically evaluate biomedical literature to identify gaps in knowledge and research opportunities.
- Biostatistics: Postgraduate students will apply advanced statistical techniques to analyze and interpret biomedical data effectively.
- Research Methodology: Postgraduate students will master advanced research methodologies, including experimental design, data collection, and analysis.
- Biomedical Imaging: Postgraduate students will understand and utilize various imaging modalities, such as microscopy and medical imaging, in their research.
- Experimental Techniques: Postgraduate students will gain proficiency in laboratory techniques relevant to biomedical research, such as PCR, Western blotting, and cell culture.
- Ethical Research Practices: Postgraduates will adhere to ethical principles and guidelines in conducting biomedical research, including informed consent and data privacy.
- Hypothesis Development: Postgraduate students will formulate research hypotheses and design experiments to test these hypotheses.
- Experimental Execution: Postgraduate students will conduct experiments, collect data, and troubleshoot issues that may arise during research projects.
- Interdisciplinary Research: Postgraduate students will undertake interdisciplinary research with the Schools involved in Medical Education, Engineering Education, the School of Allied Health Science, and the School of Community Wellness and Lifestyle Management.
- Intellectual Property: Postgraduate students will acquire knowledge about intellectual property rights, patents, and technology transfer in biomedical innovation.
- Biomedical Product Development: Postgraduate students will participate in the development of biomedical products, from concept to prototype.

- **Data Management:** Postgraduates will effectively manage and organize biomedical data, ensuring accuracy and accessibility.
- **Biomedical Entrepreneurship:** Postgraduate students will explore the entrepreneurial aspects of bringing biomedical innovations to market, including business plans and funding strategies.
- **Project Management:** Postgraduate students will apply project management principles to plan, execute, and evaluate biomedical research and innovation projects.
- **Critical Thinking and Problem-Solving:** Postgraduate students will develop critical thinking skills to address complex biomedical challenges and propose innovative solutions.

These learning objectives and outcomes reflect the comprehensive nature of a 2-Year MSc program in Biomedical Research and Innovation, covering both theoretical knowledge and practical skills needed in this field.

Proposed Institution Deemed to be University (Distinct Category) to meet 21st Century Global Requirements

Way Forward.....

- Shall implement NEP 2020 guidelines in letter and spirit duly incorporating in the Statutes, Ordinances, Academic Regulations of the University towards more Holistic and Multi-Disciplinary Higher Education right from the start of the University
- Shall introduce the Curriculum and Credit Framework for the Undergraduate Programs (CCFUP 2022) of the UGC from very beginning to enable the students to choose the subjects of their interest in all disciplines
- Shall adopt Learning Outcomes based Pedagogical approach with paradigm shift from teacher-centric to learner-centric and from passive to participatory pedagogies to achieve Quality Higher Education
- Shall have multi-disciplinary institutions of Intelligence and Computing, Agriculture, Indian Knowledge Systems, Languages and Cultural Heritage, Technology-led Agriculture, Health and Bio-Medical Sciences, Management and Law, Community Wellness and Lifestyle Management, Medicine, Dentistry, Homoeopathy, Pharmacy, Physiotherapy, Nursing Education and Center for Research and Innovations in single campus needed for a multi-disciplinary and stimulating learning environment from very beginning
- Shall offer Skill Enhancement, Value-Added and Ability Enhancement subjects in all courses at undergraduate level to develop well-rounded individuals with critical 21st Century capacities which enhance their employability.
- Shall offer 4-Year Bachelor's Degree (Hons with Research) to enable the students to possess research bent of mind to independently take up and work on collaborative research projects on contemporaneous researchable issues
- Shall establish an exclusive Center for Research and Innovation for conducting multi-disciplinary and inter-disciplinary research and for guiding the students across the disciplines offered by the Schools
- Shall provide Strong and Effective Governance and Successful Leadership based on the experience of about five decades since 1974 with fifty educational institutions in India and Abroad
- Shall revisit Choice Based Credit System (CBCS) for instilling innovation and flexibility for optimal learning environment and support to students in their chosen area of discipline
- Shall gear up to prepare professionals to meet the 21st Century challenges in cutting edge areas that are fast gaining prominence such as AI, ML, DS, IoT, Additive Manufacturing, Robotics with applications in all courses related to Health Care, Agricultural, Technical, Indian Knowledge Systems, Languages & Cultural Heritage, Bio-Medical Sciences, Energy, Management and Law Education for enhancing employment potential of all courses