2021-2022 ANNUAL REPORT

IIITDM
KUR DO

INSTITUTE VISION AND MISSION

Vision of the Institute: To become a center of excellence pioneering in education, research & development, and the best in Design & Manufacturing. To become the epicenter of path-breaking innovations and novel ideas in Information Technology enabled Design and Manufacturing. To create an eco-friendly environment with state-of-the-art equipment where research and scholarship flourish in tandem, and where the leaders of a new tomorrow emerge.

Mission of the Institute: To work towards realizing our vision and become the torch-bearer of 'higher learning' in the field of Information Technology enabled Design & Manufacturing. To foster research, innovation and provide ample scope for outreach and leadership programs among students and faculty alike, thereby creating cutting-edge technologies and avant-garde technologists on par with the global standards.

Charter: To carry out unparalleled advanced research and development activities in Information Technology enabled Design and Manufacturing related technologies. To design, adapt and adopt suitable pedagogy for enhanced 'higher learning'. To excel and standout in the field of Information Technology enabled Design and Manufacturing by contributing towards knowledge-building and nation-building both exquisitely and on the basis consultation.

Director's Message

In order to realize afore mentioned vision and mission of the Institute, an ideal Design Ecosystem with modern curricula apt for the 21st century knowledge economy came into being. Efforts were put in with the aim of integrating various engineering streams under one umbrella. Furthermore, this umbrella would emerge to be a gangplank necessary to bridge the gap between industries and academia. The Indian Institute of Information Technology, Design and Manufacturing, Kurnool (IIITDMK) is an Institute which was set up to build a model Design Ecosystem, for which I am beholden to the MoE formerly known as the MHRD and the Government of India for bestowing me with this opportunity and responsibility to materialize their vision into a living reality, by serving as the founding Director.

I assumed charge in the month of February - 2019, and numerous challenges were laid ahead of me straight away. The Institute was in the nascent stages of development, having scope for immense and untapped potential. The foundation of an academic Institute depends on three factors, the duty to provide holistic education in addition to quality research (At IIITDMK, a new age digital research in order to provide comprehensive growth in a relatively new area of information technology) and a secure environment for faculty, students and representing industry bodies to live in harmony.

The boon and bane of the institution is the location of the Institute. IIITDMK is located at a hill top, named Jaganntha gattu, it has a scenic view and the eco-friendly environment provides peaceful and pollution free atmosphere positively impacting education and research. I took it upon myself to address the issue of providing a secure environment, by speeding up and completing the construction of structural facilities such as hostels and dining hall. The campus is being strategically developed and personnel

were hired to provide round the clock security to our students and faculty, in addition to having a doctor on campus from a reputed hospital. Advanced facilities such as having a pharmacy on campus, an ambulance in case of emergency, providing hygienic and nutritious meals in the mess for students, providing transport assistance are few of the notable short term achievements. I believe this has laid a strong foundation and an ideal blue-print for greater things in the near future.

To address the learning curve, faculty have been hired from reputed institutes (Top National Institutional Ranking Framework - NIRF ranking Institutes and Universities) who have contributed to the surge of synergy in this design oriented ecosystem. The Institute strives to maintain mutually beneficial relationships and partnerships with various industries by hiring individuals associated with reputed industries as visiting faculty. This established a balance between the industrial setting and academics, all the more benefitting the students. These efforts have created a unique place for IIITDMK amongst the 'Institutions of National Importance' and as time progresses, the gaps pertaining to academics will be slowly but surely filled. State-of-the-art Laboratory facilities are operative and cross majors are highly encouraged at our Institute in order to equip the students to progress onwards at a faster rate and gradually decrease the trend of specialization in an individual branch of engineering and make a shift towards a holistic learning and multi-disciplinary expertise as proposed by the NEP 2020.

The Institute's Training and Placement cell, despite having to face difficulties like fewer number of students when compared to other Institutes and the geographical location of the Institute, is competing with already established Institutes with a higher number of students. Overcoming all the odds owing to the dedication, sincerity and combined efforts of the faculty and students alike the placements percentage is increasing steadfastly. The innovative and specifically designed Curricula being taught

at IIITDMK is being welcomed by the industrial bodies in the same way as the competitive and hardworking spirit of the students is being appreciated and encouraged.

The teaching and learning process at the Institute is collaborative and synergic. The students are encouraged to take ownership and create efficient models to address the real time issues being faced locally and globally, and offer effective solutions in the field of information technology enabled design and manufacturing. The ideas of the students are brought to life through an innovation centre established in the campus named "Kurnool Innovation Technology and Entrepreneurship (KITE)" in collaboration with industry experts. The fundamental aim of research being carried out at the Institute is to be novel, qualitatively on par with global standards and interdisciplinary. I envision IIITDMK to be a guiding light in the field of Information Technology enabled Design and Manufacturing and will relentlessly endeavour to build the Institute par excellence in all the aspects required.

At IIITDMK we are highly motivated, committed and under a pledge to create a sustainable environment which promotes enhanced nurturing, progressive higher learning and character building of the students. Our motto is to build a better future for our nation through dedicated, confident, positive, skilled and world class intellectuals who by putting in their efforts will lead India to a better dawn.

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1.   INTRODUCTION

Indian Institute of Information Technology, Design and Manufacturing (IIITDM), Kurnool is the youngest among the five centrally funded IIITs and was established by the Ministry of Education as part of 'Andhra Pradesh Reorganization Act' in the academic year 2015-16. The Institute is located in the historical city of Kurnool in the Rayalaseema region. IIITDM and has been recognized as an 'Institution of National Importance by an act of the Parliament. At present, the Institute is functioning from its permanent campus at Jagannathagattu, Dinnedevrapadu, Kurnool, and Andhra Pradesh.
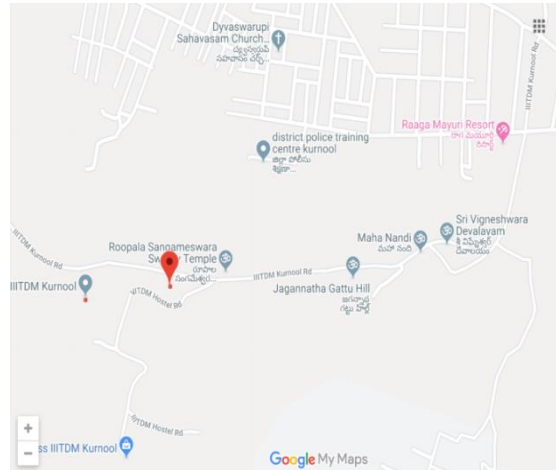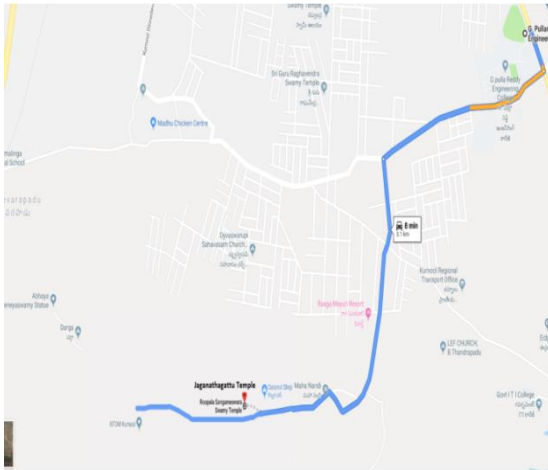
Location Map of Indian Institute of Technology, Design and Manufacturing, Kurnool, Andhra Pradesh, India.

| **Existing Campus** | **Proposed Campus** |

The campus is being developed in the allocated area of 190 acres for its construction on the hilltop located at Jagannathagattu, Kurnool city, adjacent to the Nandyal – Kadapa highway. The construction was initiated in 2016 and is expected to be completed by the year 2022 in all aspects. As part of this action plan, the central public works department (CPWD) took up the construction activity for two hostel blocks to accommodate 350 students and a mess block completed by the end of the year 2019. Higher Education Financing Agency (HEFA) has sanctioned INR 218 crores for ongoing and future

construction activities on campus. An agreement with HEFA and MoU with CPWD was signed on 30th August 2019 and 16th September 2019 respectively.

The Institute has initially started its academic programs through B. Tech. in the streams of Computer Science Engineering (CSE), Electronics and Communication Engineering (ECE) and Mechanical Engineering (ME). The current intake stands at 180 students per academic year and the total strength is 511 students. The institute started M. Tech. programmes related to emerging technologies from the academic year 2020-21. Department of CSE is offering M. Tech. in Data Analytics and Decision Sciences, Department of ECE is offering M. Tech. in Electronic System Design, while Department of ME is offering M. Tech. programme in Smart Manufacturing. The present intake in each of the course is 15. Also, all the departments are offering Ph.D. programmes.

Currently 20 regular faculty members, 12 Visiting/Guest/Contract faculty, and 12 non-teaching staff (supporting staff) are catering to the academic and administrative activities of the Institute. All our faculty members are Ph.D. holders from reputed institutes. In addition to providing facilities like medical, house-keeping, security, transportation and other allied services, personnel were hired through an external agency to create a safe and hygienic environment.

2. BOARD OF GOVERNORS

S. No.	Photographs	Description
1	**Chairperson**	**Prof.H.A. Ranganath,** MSc, Ph.D., FASCL, FNASCL, FNAI, FISEB Distinguished Professor of Mysore University (For Life) (Former Vice-Chancellor, Bangalore University; Former Director, NAAC)
2	**Member**	**Shri.J.Syamala Rao, IAS** Principal Secretary, Dept of Higher Education Govt. of AP.
3	**Member**	**Shri Rakesh Ranjan, IAS** Addl. Charge of IITs/IIITs. Department of Higher Education, Ministry of Education,Govt. of India
4	**Member**	**Dr Jaideep Kumar Mishra. Ph.D.** Joint Secretary and Group Coordinator Ministry of Electronics and Information Technology (MEITY), Govt. of India

S. No.	Photographs	Description
5	**Member**	**Prof. K. N. Satyanarayana, Ph.D.** Director-Indian Institute of Technology-Tirupati Tirupati, Andhra Pradesh.
6	**Member**	**Prof. M. Chandrasekhar, Ph.D.** Director Indian Institute of Management Vishakhapatnam, Andhra Pradesh.
7	**Member**	**Prof. D V L N Somayajulu,** Director IIITDM Kurnool & IIITDM Kancheepuram.
8	**Member**	**Shri. Venkata Narasimham Peri** Founder & CEO Cognitive care Hyderabad, Telangana
9	**Member**	**Prof. N V Ramana Rao, Ph.D.** Director, National Institute of Technology Warangal, Telangana
10	**Member**	**Smt. Sashi Sairaman** CEO, MTAB Chennai, Tamil Nadu
11	**Member**	**Prof. Sandeep Sancheti** Provost Vice-Chancellor, Marwadi University, Gujarat

S. No.	Photographs	Description
12	**Member**	**Prof. P. Nagabhushan** Former Director, IIIT Allahabad
13	**Member & Secretary**	**Dr. J. Krishnaiah** Registrar I/C Indian Institute of Information Technology Design and Manufacturing Kurnool Kurnool, Andhra Pradesh
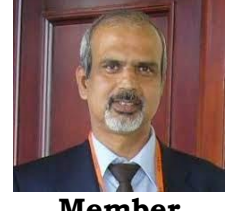
3.   ADMINISTRATIVE, ACADEMIC STATUTORY BODIES AND OTHER COMMITTEES:

The different administrative, academic statutory bodies and other committees constituted in the institute are given below:

3.1   Senate:

S. No.	Photographs	Description
1	**Chairman**	**Prof. D V L N Somayajulu, Ph.D.** Director
2	**Ex - officio**	**Dr. Korra Sathya Babu** Associate Professor and Head Dept. of Computer Science and Engineering
3	**Ex - officio**	**Dr. Mohamed Asan Basiri M** Assistant Professor and Head Dept. of Electronics and Communication Engineering

S. No.	Photographs	Description
4	**Ex - officio**	**Dr. Muvvala Pullarao** Assistant Professor and Head Dept. of Mechanical Engineering
5	**Ex - officio**	**Dr. Ravinder Katta** Assistant Professor and Head Dept. of Sciences
6	**Spl. Invitee**	**Dr. Akhtar Khan** Associate Dean (Academic, Research & Development)
7	**Spl. Invitee**	**Dr. S. Mani Prakash** Associate Dean (Faculty Affairs)
8	**Spl. Invitee**	**Dr. D. Murali** Associate Dean (Students Affairs)
9	**Spl. Invitee**	**Dr. Mohamed Asan Basiri M** Associate Dean (Planning and Development)

S. No.	Photographs	Description
10	**Member**	**Prof. Bheem Arjuna Reddy Tamma** Professor Dept. of CSE IIT, Hyderabad
11	**Member**	**Prof. P. Rajalakshmi** Professor IIT, Hyderabad
12	**Member**	**Prof. C. S. Kumar** Professor, Dept. of MED IIT, Kharagpur
13	**Member**	**Prof. K. Ramamohan Reddy** Professor, Dept of IT NITK, Suratkal
14	**Member**	**Prof. A. Shaija** Professor, Professor of MED NIT, Calicut
15	**Member**	**Prof. A. G. Keskar** Professor Of ECE VNIT, Nagpur

S. No.	Photographs	Description
16	 **Member**	**Dr. U. Chandrasekhar** Former Director, Wipro 3D Bangalore
17	 **Secretary**	**Dr. B. K. Murthy** Group Coordinator MeitY, New Delhi
18	 **Member**	**Dr. Vadlamani Ravi** Professor, IDRBT, Hyderabad
19	 **Secretary**	**Dr. J. Krishnaiah** Registrar I/c

3.2   Finance Committee:

S. No.	Photographs	Description
1	 **Chairperson**	**Prof. H. A. Ranganath**, M.Sc., Ph.D., FASc., FNASc., FNA., FISEB Distinguished Professor (for life) of University of Mysore (Former Vice Chancellor, Bangalore University; Former Director, NAAC), Karnataka.
2	 **Member**	**Shri. Priyank Chaturvedi** Deputy Secretary (IIITs), Department of Higher Education, MoE, Govt. of India
3		**Shri. Anil Kumar** Director (Finance) Dept. of Higher Education Ministry of Education

Member		Government of India Delhi.
4	 **Member**	**Shri. S. Goverdhan Rao** Registrar National Institute of Technology-Warangal, Warangal, Telangana.
5	 **Member**	**Prof. Y. Narasimhulu, Ph.D.** Former Vice Chancellor of RU and Director ASCI, UoH, Hyderabad
6	 **Member**	**Prof. D V L N Somayajulu, Ph.D.** Director Indian Institute of Information Technology Design and Manufacturing Kurnool, Andhra Pradesh
7	 **Member**	**Dr. D. Murali, Ph.D.** Faculty In-charge (Accounts) Indian Institute of Information Technology Design and Manufacturing Kurnool, Andhra Pradesh
8	 **Special Invitee**	**Shri. A. Chidambaram** Joint Registrar (Accounts) Indian Institute of Information of Technology Design and Manufacturing, Kancheepuram, Tamil Nadu

3.3   Building and Works Committee:

S. No.	Photographs	Description
1	 **Chairman**	**Prof. D V L N Somayajulu, Ph.D.** Director Indian Institute of Information Technology Design and Manufacturing Kurnool, Andhra Pradesh

2		**Dr. M. Nithyadharan Ph.D.**
		Dept. of Civil Engineering
		Indian Institute of Technology-Tirupathi.
		Tirupathi, Andhra Pradesh.
	Member	
3		**Prof. N. V. Ramana Rao, Ph.D**
		Director
		National Institute of Technology- Warangal
		Warangal, Telangana.
	Member	
4		**Prof. T D G Rao, Ph.D.**
		Dept. of Civil Engineering
		National Institute of Technology- Warangal
		Warangal, Telangana.
	Member	
5		**Prof. V. Thiruvengadam**
		Professor
		School of Planning and Archicture - New Delhi
		Delhi
	Member	
6		**Shri. B. S. Reddy**
		Superintendent Engineer (Electrical)
	Member	Central Public Works Department (CPWD)-Hyderabad Division
		Hyderabad, Telangana.
7		**MR. G.K. Vijayanand**
		Consultant Civil Engineer,
		IIITDM Kurnool
		Kurnool, Andhra Pradesh
	Member	

3.4 Anti-Ragging Committee:

S. No.	Name of the Member	Designation	Role
1	Prof. DVLN Somayajulu	Director	Chairman
2	Dr. K Krishna Naik	Faculty in Charge (Student Affairs)	Convenor
3	Dr. J Krishnaiah	Registrar (I/C)	Member
4	Dr. Akhtar Khan	Associate Dean Academics and Research	Member
5	Dr. K Sathya Babu	Head of the Department (CSE)	Member
6	Dr. M A Basiri	Head of the Department (ECE)	Member
7	Dr. M Pullarao	Head of the Department (MED)	Member
8	Dr. Ravinder Katta	Head of the Department (Sciences)	Member
9	Dr. K Nagaraju	Faculty in charge (Boys Hostel)	Member
10	Dr. R Praneetha Sree	Faculty in charge (Girls Hostel)	Member
11	Dr. C Chandrasekhara Sastry	Faculty in charge (Sports & Games)	Member
12	Dr. R Kabaleeshwaran	Faculty Members Nominated by the Director	Member
13	Dr. Valluri Siva Prasad	Faculty Members Nominated by the Director	Member
14	Shri Vijay Kumar	Legal Advisor of the Institute	Member
15	Dr. P V Prakash Madduri	Public Relation Officer	Member

3.5. Internal Complaints Committee (ICC) under Sexual Harassment of Women at Workplace

S. No.	Designation	Name of the Member
1	Chairperson	Dr. B. Vijaya Laxmi, Principal (retd.), Law College, Warangal
2	Member	Prof. Venkata Sundaranand P, Rayalaseema University
3	External Member	Dr. S. Ravichandra, Associate Professor, CSE, NIT Warangal
4	Member	Ms. V Lakshmi Varsha, Junior Technician, Library, IIITDM Kurnool
5	Convenor	Dr. R Praneetha Sree, Assistant Professor, CSE, IIITDM Kurnool

4. STAFF DETAILS

4.1 Teaching staff:

a) Department of Computer Science & Engineering:

S. No	Photographs	Description
1		**Prof. D.V.L.N. Somayajulu, (Ph.D., IIT Delhi)** Professor & Director **Areas of Interest:** Databases, Information Extraction, Query Processing, Big Data and Privacy
2		**Dr. K. Sathya Babu, Ph.D. (NIT Rourkela)** Assistant Professor & HOD **Areas of Interest:** Natural Language Processing, Social Computing, Recommender Systems, Time Series Analysis
3		**Dr. Renjith P. (Ph.D., IIITDM Kancheepuram)** Assistant Professor **Areas of Interest :** Graph Theory, Graph Algorithms
4		**Dr. Anil Kumar R, Ph.D.(IIT Hyderabad)** Assistant Professor **Areas of Interest:** 4G, 5G, *High Efficiency* Wi-Fi networks, IoT and Edge computing, SDN and NFV

5		**Dr. Preeth R. (Ph.D., NIT Tiruchirapalli)** Assistant Professor **Areas of Interest:** Internet of Things, Network Security, Foreground Segmentation
6		**Dr. R. Praneetha Sree(Ph.D., NIT Warangal)** Assistant Professor **Areas of Interest:** Data Mining, Machine Learning, Data analytics, Data Sciences, Databases
7		**Dr. Shounak Chakraborty, (Ph.D., IIIT Guwahati)** Assistant Professor **Areas of Interest:** Artificial neural networks, remote sensing, pattern recognition and image processing.
8		**Dr. R. Kabaleeshwaran, Ph.D. (IISc Bangalore)** Assistant Professor **Areas of Interest:** Cryptography - privacy-preserving cryptography and zero-knowledge proof system.
9		**Dr. K. Nagaraju, Ph.D. (NIT Calicut)** Assistant Professor **Areas of Interest:** Theory of Computer Science, Automata Theory, Machine Learning, Deep Learning

S. No.	Photographs	Description
10		**Dr. Anjaneyulu Pasala, (Ph.D., IIT Madras)** Adjunct Professor **Areas of Interest:** Machine Learning, Data analytics, Social Networks, AR/VR, Cloud engineering, Software Engineering, Software testing, Entrepreneurship.

b) Department of Electronics & Communication Engineering

S. No.	Photographs	Description
1		**Dr. Mohamed Asan Basiri (Ph.D., IIITDM Kancheepuram)** Assistant Professor **Areas of Interest:** VLSI for Signal Processing, VLSI for Information Security
2		**Dr. K. Krishna Naik, Ph.D**. **(JNTUA Anantapur)** Assistant Professor **Areas of Interest:** Wireless and Mobile Communications and Adhoc Networks, Software Defined Radio/Cognitive Radio, Global Navigation Satellite Systems, Underwater Communication
3		**Dr.Eswaramoorthy K V (Ph.D., IISc Bangalore)** Assistant Professor **Areas of Interest:** Non-invasive monitoring of body fluids, Electrochemical biosensor and gas sensor, Biomedical Instrumentation & Industrial Automation, Internet of Things (IoT) for Agriculture, manufacturing industry and Smart City

S. No.	Photographs	Description
4		**Dr. Valluri Siva Prasad, Ph.D. (NIT Warangal)** Assistant Professor **Areas of Interest:** Wireless communication, Software defined radio, MIMO, Visible light systems, Physical layer design.
5		**Dr. Yaswanth K.N.G.B,** (Ph.D., IIT Madras) Assistant Professor **Areas of Interest:** Inverse Problems in Electromagnetics, Computational Electromagnetics, Non-destructive Evaluation, RFIC/MMIC Design, Antenna Design.
6		**Dr. Jagritee Talukdar (Ph.D., NIT Silchar)** Ad-Hoc Faculty **Areas of Interest:** Microelectronics Engineering; VLSI Design, Nanoelectronics; Semiconductor Devices.

c) Department of Mechanical Engineering:

S. No.	Photographs	Description
1		**Dr. Pullarao Muvvala (Ph.D., IIT Madras)** Assistant Professor & HOD **Areas of Interest:** Heat Transfer and Fluid Flow (Experimental and Computational), Electronic cooling, Optimization studies
2		**Dr. J. Krishnaiah, (Ph.D., IIT Kharagpur)** Associate Professor & Registrar I/C **Areas of Interest:** Applied Research and Development on data-driven systems to support industrial / business requirements in modeling, controlling and

		optimization based on Predictive Modeling, Advanced Control Techniques, Non-traditional Optimization, Pattern Recognition, Data mining, Information Retrieval, Document Classification, Analytics, Segmentation, Clustering & Classification, Image Processing, Handwritten/Optical Character Recognition.
3		**Dr. Maniprakash S (Ph.D., TU Dortmund, Germany)** Assistant Professor **Areas of Interest:** Continuum Mechanics, Constitutive Modelling, Smart Materials
4		**Dr. Akhtar Khan (Ph.D., NIT Rourkela)** Assistant Professor **Areas of Interest:** Machining of "difficult-to-cut" materials, Machine Tool Technology, Optimization Methods in Engineering Design (Single and Multi-Objective), Design of Experiments, Multi-Criteria Decision Making.
5		**Dr. C. Chandrasekhara Sastry, Ph.D. (Anna University CEG, Chennai)** Assistant Professor **Areas of Interest:** Conventional Machining; Non Traditional Process: Thrust area: AWJM, EDM, ECM, EBM; Nano Composite Coating; Mechanical Strengthening Mechanisms; Additive Manufacturing; Peening (Laser/Shot); Flux Machining.

6		**Dr. Vipindas K**., (**Ph.D., NIT Calicut**) Assistant Professor **Areas of Interest:** Conventional machining, Metal cutting, Micro machining, Micro end milling, Micro turning, Machining of composites, Surface texturing
7		**Dr. Somnath Dey (Ph.D., IIT Bombay)** Assistant Professor **Areas of Interest:** Vibrations, Dynamics and control, Nonlinear dynamics, Micro-scale devices, Scanning probe microscopy.
8		**Dr. Din Bandhu (Ph.D., IITRAM Ahmedabad)** Ad-Hoc Faculty **Areas of Interest:** Process-Structure-Property Relationship, Advanced Welding Techniques, Welding Metallurgy, Heat Treatment, Surface Analysis, Composite Materials, Mechanical and Metallurgical Characterization, Taguchi Method-based Analysis
9		**Dr. E. Hemachandan (Ph.D., IIT Madras)** Ad-Hoc Faculty **Areas of Interest:** Microfluidics, Multiphase flow, Microfabrication, MEMS, Bio-Microfluidics, Lab on a chip, Droplet Microfluidics, Convective Heat Transfer

S. No	Photographs	Description
10		**Dr. G. Praveen Kumar (Ph.D., BITS Pilani Hyderabad)** Ad-Hoc Faculty **Areas of Interest:** Incremental sheet metal forming, Incremental hole flanging, Incremental tube forming, CNC tool path generation & FE simulations

c) Department of Sciences:

S. No	Photographs	Description
1		**Dr. Ravinder Katta (Ph.D., IIT Roorkee)** Assistant Professor **Areas of Interest:** Mathematical Control Theory, Inverse Problems, Ill posed operator equations and Regularization Theory.
2		**Dr. D. Murali (Ph.D., IGCAR, Kalpakkam)** Assistant Professor & HoD **Areas of Interest:** Computational condensed matter, ab-initio electronic structure calculations, Photovoltaic effect in perovskite based solar cells, phonon transport, solid oxide fuel cells, nanostructure evolution in structural materials
3		**Dr. T. Pandiyarajan, Ph.D.** **(Physics, NIT, Tiruchirappalli)** Assistant Professor **Areas of Interest:** Optical nanomaterials, Bioactive nanostructured materials, Thin film fabrication, Raman spectroscopy, Photocatalysis

4		**Dr P. V. Prakash Madduri, Ph.D. (Physics, Central University, Hyderabad)** Assistant Professor **Areas of Interest:** Magnetism at nanoscopic and mesoscopic length scales / Core-Shell nanoparticles, Magnetic Skyrmions & Antiskyrmions / Magnetic excitations and Magnonics / Magnetotransport in bulk and nano materials / Ferromagnetic Resonance studies / Magnetic Refrigeration
5		**Dr. Anirban Majumdar, Ph.D. (Mathematics, IIT Guwahati)** Assistant Professor **Areas of Interest:** Parameter uniform numerical methods for singularly perturbed problems, Numerical solution of partial differential equation, Differential equation.
6		**Dr. Nittala Noel Anurag Prashanth, Ph.D. (English, EFLU, Hyderabad)** Assistant Professor **Areas of Interest:** Curriculum, Syllabus Designing and Materials Production, English as a Second Language (ESL), English for Specific Purposes (ESP), Medium of Instruction and Language Policy.
7		**Prof. ACHARYA G R K** Professor **Areas of Interest:** Fluid Mechanics; Bio-Fluid Mechanics; Heat and Mass Transfer

8		**Prof. V. Siva Rama Krishnaiah, Ph.D. (Management, IIT Delhi)** Adjunct Faculty **Areas of Interest:** Entrepreneurship and Management Functions, Software Project Management, Soft Skills, Knowledge Management, Professional Ethics and Human Values
9		**Prof. Subramanyam Sharma (Ph.D., Kakatiya University, Warangal)** Guest Faculty:
10		**Dr. D. Amaranatha Reddy, Ph.D. (Physics, S V University, Tirupati)** DST – Inspire Faculty **Areas of Interest:** The primary area of research interest includes the synthesis, manipulation, and the physico-chemical characterization of nanomaterials for, Solar Fuels: Hydrogen Production by photo/photoelectro catalytic Water Splitting, Photocatalytic decontamination of Gaseous/Aqueous pollutants for water/air purification, Photocatalytic CO_2 conversion into value-added chemicals, Biomass conversion into value-added chemicals

4.2 Non-Teaching Staff

(a) Administration Staff:	
1	**Dr. J. Krishnaiah** **Registrar I/C** **(Administration)**

2		**Mr. Surya Praveen Duvvada** **Assistant Registrar** **(Accounts & Finance)**
3		**Mr. Venkateswara Rao Dara** **Assistant Registrar** **(Administration)**
4		**Mr. Md. Azeemuddin** **Assistant Registrar** **(Stores & Purchase)**
5		**Mrs. A. Srivalli** **Junior Superintendent** **(Academics)**
6		**Mr. Konduru Vishnuvardhan Raju** **Junior Assistant** **(Administration)**

7		**Mr. Jeejula Charukesh** **Junior Assistant** **(Academic)**
		B) Central Library Staff :-
8		**Mr. Ashkar K.** **Junior Superintendent** **(Library)**
9		**Miss. V. Lakshmi Varsha** **Junior Technician** **(Library)**
		C) Engineering and Maintenance Unit staff :
10		**Mr. Mahankali Sreenath** **Junior Engineer** **(Civil)**
11		**Mr. Eeram Krishna Murthy** **Junior Engineer** **(Electrical)**

		D) Technical Staff:
12		**Mr. Mirza Hyder Ali Baig** **Junior Technical Superintendent** **(Stores &Purchase)**
13		**Mr. M. Nageswara Rao** **Junior Technical Superintendent**
14		**Mr. Boinapalli Venkanna** **Junior Technical Superintendent**
15		**Mr. P. Rosaiah** **Junior Technician** **(Electronics and Communication Engineering)**
16		**Mr. K. Suresh** **Junior Technician** **(CSE)**

Health centre and Placement cell details:

1	**Dr. Lakshmi Prasanna Reddy** **Doctor** **Health Centre**
2	**Deepak** **Training and Placement Coordinator** **Training and Placement Cell**

5 RESEARCH AND DEVELOPMENT ACTIVITIES

5.1 Journal Publications

IIITDM Kurnool is inclined towards research and encourages its faculty to participate actively in their research work in addition to their teaching responsibilities. The list of journal publications and conferences attended by the faculty of this institute during the academic year 2021-22 is as follows:-

Journal Publications from July 1st 2021 to June 30th 2022

(1) Manoj Kumar Somesula, Rashmi Ranjan Rou, and **D.V.L.N. Somayajulu,** "Cooperative cache update using multi-agent recurrent deep reinforcement learning for mobile edge networks", Computer Networks, Vol. 209, May 2022.

(2) Pradeep, N., **C. Chandrasekhara Sastry**, Lincoln Brandao, R. T. Coelho, Anil Bairapudi, Muthu Manickam, Hafeezur Rahman, and Sandeep Patil. "Surface Modification of Ti6Al7Nb Employing Pure Waterjet and Abrasive Waterjet Polishing for Implant Application: Comparison Study." *Surface Topography: Metrology and Properties*, 10, 015034

(3) Anil Bairapudi, **C. Chandrasekhara Sastry** and Chetan Varma. "Experimental analysis of 3D printed pallet model through fused deposition modeling". *Surface Review and Letters*

(4) **Anirban Majumdar** and Srinivasan Natesan, Parameter-uniform numerical method for singularly perturbed 2-D parabolic convection-diffusion problem with interior layers, Mathematical Methods in the Applied Sciences**,** 45 (5), 3039-3057, 2022

(5) Kuppuswamy, G. P., Pushparaj, K., Surya, V. J., **Varadharaj, Eswaramoorthy K.,** Kumar, S. S., Di Natale, C., & Sivalingam, Y. (2022). A ZIF-67 derived Co 3 O 4 dodecahedron shaped microparticle electrode based extended gate field-effect transistor for non-enzymatic glucose detection towards the diagnosis of diabetes mellitus. *Journal of Materials Chemistry C.*

(6) **Sundeep, D.**, **Varadharaj, Eswaramoorthy K.,** Ephraim, S. D., Sastry, C. C., & Krishna, A. G. (2022). Mechanical, morphological and thermal analysis of unidirectional fabricated sisal/flax hybrid natural fiber composites. *Surface Topography: Metrology and Properties*, *10*(1), 015028.

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A. Putta Rangappa, **D. Amaranatha Reddy,** Tae Kyu Kim, Applied Surface Science 587 (2022) 152895. SCI, ISSN: 0169-4332.

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(10) Ultrathin layered Zn-doped MoS2 Nanosheets Deposited onto CdS Nanorods for Spectacular Photocatalytic Hydrogen Evolution, D. Praveen Kumara, Sumin Seo, A. Putta Rangappa, Seunghee Kim, K. Arun Joshi Reddy, Madhusudana Gopannagari, P. Bhavani, **D. Amaranatha Reddy,** Tae Kyu Kim, Journal of Alloys and Compounds, 905 (2022) 164193, ISSN: 0925-8388.

(11) Nanocavity-assisted Single-Crystalline Ti3+ Self-Doped Blue TiO2(B) as Efficient Cocatalyst for High Selective CO2 Photoreduction of g-C3N4, D. Praveen Kumar, A. Putta Rangappa, Hyeong Seop Shim, Khai H. Do, Yul Hong, Madhusudana Gopannagari, K. Arun Joshi Reddy, Palagiri Bhavani, **D. Amaranatha Reddy**, Jae Kyu Song, and Tae Kyu Kim, Materials Today Chemistry 24 (2022) 100827, SCI, ISSN: 2468-5194

(12) CuPc nanowires PVD preparation and its extra high gas sensitivity to chlorine, Lianqing Yu, Yankun Wang, Jinhui Wang, Xingyu Zhao, Wei Xing, Liana Alvares Rodrigues, **D. Amaranatha Reddy**, Yaping Zhang, Haifeng Zhu, Sensors and Actuators A: Physical, 334, 2022, 113362

(13) Impact of the number of surface-attached tungsten diselenide layers on cadmium sulfide nanorods on the charge transfer and photocatalytic hydrogen evolution rate K. Arun Joshi Reddy, **D. Amaranatha Reddy***, Da Hye Hong, Madhusudana Gopannagari, A. Putta Rangappa, D. Praveen Kumar, Tae Kyu Kim, Journal of Colloid and Interface Science 608 (2022) 903-911

(14) Noble metal free few-layered perovskite-based Ba2NbFeO6 nanostructures on exfoliated g-C$_3$N$_4$ layers as highly efficient catalysts for enhanced solar fuel production, D. Praveen Kumar, A. Putta Rangappa, Khai H. Do, Yul Hong, Madhusudana Gopannagari, K. Arun Joshi Reddy, P. Bhavani, D. Amaranatha Reddy, Tae Kyu Kim, Applied Surface Science 572 (2022) 151406.

(15) **Mohamed Asan Basiri M,** "Efficient VLSI Architecture of 3D Discrete Transformation", Integration, the VLSI Journal, Elsevier, vol. 82, pp. 136-146, Jan 2022.

(16) Manoj Kumar Somesula, Rashmi Ranjan Rout, and **D.V.L.N. Somayajulu**, "Contact duration-aware cooperative cache placement using genetic algorithm for mobile edge networks", Computer Networks, Vol 193, July 2021

5.2   Conference Publications from July 1st 2021 to June 30th 2022

(1) **Mohamed Asan Basiri M**, "Hardware based Entropy Calculation in Crypto Applications", IEEE International Symposium on Smart Electronic Systems (iSES), pp. 18-22, Dec. 2021, MNIT Jaipur, India.

(2) **Mohamed Asan Basiri M**, Hardware based Order Book Design in High Frequency Algo Trading", IEEE International Symposium on Smart Electronic Systems (iSES), pp. 285-288, Dec. 2021, MNIT Jaipur, India.

(3) **Kowsyap Pranay Kumar and Mohamed Asan Basiri M**, "Correctness of Synthesis for Tree based Decomposed Algorithm in Semiconductor Memory Designs with Larger Decoders", 5th IEEE Conference on Information and Communication Technology, pp. 1-6, Dec. 2021, India.

(4) **Gulla Krishna Mohan an**d **Mohamed Asan Basiri M**, "High Throughput Folded Architecture of AES", 5th IEEE Conference on Information and Communication Technology, pp. 1-6, Dec. 2021, India.

(5) **Tadde Sandeep an**d **Mohamed Asan Basiri M**, "Versatile Circuit Designs of Digital Modulator and Demodulator", 5th IEEE Conference on Information and Communication Technology, pp. 1-6, Dec. 2021, India.

(6) **Harsha Vardhan Bathal,P.V.N Pooja Srihitha,Sai Greeshmanth Reddy Dodla, andAnjaneyulu Pasala**, "Zero-Day Attack Prevention Email Filter Using Advanced Machine Learning", 5th IEEE Conference on Information and Communication Technology, pp. 1-6, Dec. 2021, India.

5.3 Ongoing Sponsored R&D Projects from July 1st '21 to June 30th '22

(1) Project title: Synthesis of high-Tc and small-sized-skyrmion/antiskyrmion host bulk materials and to study their exotic magnetic properties.
PI: Dr Pavan Venu Prakash Madduri (IIITDM Kurnool)
Collaborator: Dr P D Babu (UGC-DAE CSR- Mumbai)
Funding Agency: UGC-DAE Consortium for Scientific Research (UGC-DAE CSR)
Amount sanctioned: Rs. 45000/- in the first year
Duration : April 2022 to April 2025

(2) Project title: D-Powerpad: Self configurable renewable Powered Autonomous Drone Charging Station with battery swapping system
PI: Dr. Eswaramoorthy K.V. (IIITDM Kurnool)
Co- PI: Dr. C. Chandrasekhara Sastry(IIITDM Kurnool), Dr. Prakash Kodali (NIT Warangal)
Funding Agency: TiHAN-IITH
Amount sanctioned: Rs. 17.80 Lakhs
Duration: May 2022 to Dec 2023

(3) Project title: Real Time Opinion Mining in Spark Environment using Deep Learning Models with Negation Handling
PI: PI: Dr. R. Praneetha Sree
Funding Agency: Brain4ce Education
Solutions Pvt Ltd,Bangalore

Amount sanctioned: Rs. 15 Lakhs
Duration: December 2021 to December 2023

(4) Project title: Development of Model prediction control algorithm based on the identified system using Koopman operator for SMA embedded soft robots.
PI: Dr. S Maniprakash
Funding Agency: DST-SERB, GoI
Amount Sanctioned: Rs. 15.8 Lakhs
Duration: March 2022 to March 2024

(5) Project title: Design of pilot scale hydrogen fuel generation device embedded with Quantum dot Solar Cells for high purity hydrogen fuel production
PI: Dr. Amaranatha Reddy
Co- PI: Dr. T. Pandiyarajan
Funding Agency: DRDO(ER & IPR)
Amount Sanctioned: Rs.38.89 Lakhs
Duration: Nov 2021 to Nov 2024

(6) Project title: Real-time Intelligent System Design for Secure Digital Communication
PI: Dr. Mohamed Asan Basiri M
Funding Agency: IHUB NTIHAC FOUNDATION, C3I Center, IIT Kanpur
Amount Sanctioned: Rs.17.44 Lakhs
Duration: Jan 2022 to Jan 2025

5.4   Patents

S.No	Name of the Inventors	Title of the Patent	Application No. & Date	Status	Patent Provider
1	**Dola Sundeep, Eswaramoorthy KV** and **C. Chandrashekara Sastry**	A process for the manufacture of nidirectional sisal/flax hybrid fiber composite	202241012699, 09 March 2022	Under Examination	Indian Patent Office, Chennai
2	**Vipindas K**, Abhishek Kumar, Thella Ashok Kumar, Mojeswara Rao Duduku, Anna Eswara Kumar	An electronic device for physically challenged persons	352349-001 & 29.10.2021	Accepted	Indian Patent Office, Kolkata

5.5   Conferences organized

Fifth conference on "Information and Communication Technology-2021 (CICT-2021)" is organized by IIITDM Kurnool during December 10th-12th, 2021, Technically co-sponsored by IEEE Hyderabad section.

5.6   Faculty Development Programmes & Workshops organized

- AICTE ATAL FDP on "Global Navigation Satellite Systems" is organized by IIITDM Kurnool during 26th July 2021 to 30th July 2021.

- AICTE ATAL FDP on "Emerging Trends in Photonics" is organized by IIITDM Kurnool during 10th July to 14th July 2021.

- AICTE ATAL FDP on "Zero-Emission Vehicles for Sustainable Mobility" is organized by IIITDM Kurnool during 20th December 2021 to 24th December 2021.

- DST NM-ICPS TiHAN Foundation Online Skill Development Program: Department of Electronics and Communication Engineering of our institute is organizing a DST NM-ICPS TiHAN Foundation-sponsored Online Skill Development Program on "Global Navigation Satellite Systems" from 25 July 2022 to 29 July 2022.

Notable Achievements:

a) Mr R. Abhishek, M. Tech. final year student from CSE Department has received a student travel support grant of USD 1120 to present a paper titled "Active learning based semantic segmentation for extraction of minute objects from multispectral satellite images". The paper (co-authored by Anisha Chakravorty, PhD Student, CSE Dept., and Dr Shounak Chakraborty, Assistant Prof., CSE Dept.) has been accepted to present at the 42nd Annual Conference of the International Geoscience and Remote Sensing Symposium going to be organized by IEEE as its flagship conference of Geoscience and Remote Sensing Society (GRSS).

b) Dr. D. Amaranath Reddy, DST-Inspire Faculty from the Department of Sciences was elected as an International Program Committee member for the 15th Asia pacific physics conference.

5.7 Campus Development: Building/Construction/Expansion

In the academic year 2021-22, various Civil, Electrical and composite works have been completed by CPWD with the coordination from Estate Section. The following are the works done in the present academic Year 2021-22.

5.7.1. Construction of Rooms in the Basement of Administration Block:

In the academic year 2021-22, various rooms were constructed in the basement of Administration Block. Rooms were operational from the month of December 2021. Various sections such as Examination Section, Scholarship Section and Stores & purchases were allocated temporarily.

5.7.2. Pitching Work all around the Existing Buildings:

Pitching work all around the Existing Administrative Building, Kalam Hall of Residence for Boys and Kalpana Chawla Hall of Residence for Girls was undertaken to control Soil Erosion and to improve the ambience, stability of the buildings.

5.7.3. Fire Escape Staircase for Kalpana Chawla Hall of Residence for Girls:

A separate Fire Escape Staircase was constructed for 'Kalpana Chawla Hall of Residence for Girls' as per the NBC Guidelines and was made accessible for Girl students in Fire safety point of view.

5.7.4. Installation of 13 No. Passenger Lifts in the Kalam Hall of Residence for Boys:

Two number of 13 No. Passenger lifts were installed in the Kalam Hall of Residence for Boys and was operational from 1st January 2022.

5.7.5. Installation of Goods Lift in the Hill Top Dining Hall:

One number of Goods/Passenger lift was constructed and installed in the Hill Top Dining Hall for lifting various goods from Ground floor to First floor with 0.5 Tons capacity.

5.7.6. Construction of Parking Shed at the Administrative Block:

A new Parking Shed at the Administrative Block was executed by Estate Section and made accessible to all the staff to park their vehicles (Two-Wheeler/Four-Wheeler).

Parking Shed at Administration Block

5.7.7. 11kV/220V substation at Administrative Block:

Existing LT supply from APSPDCL has been upgraded to HT supply and 11kV/220V substation is constructed at the Administration Block. New substation and was inaugurated by Director "Prof. DLVN Somayajulu" in the month of June 2022.

Inauguration of 11kV/220V Substation by Director Prof. DLVN Somayajulu

5.7.8. Other ongoing Works:

The following works are ongoing in the campus by CPWD and will be completed shortly, viz., IIITDM Phase II Projects that comprises of Hostel Block 7B, Access Road to the existing administrative block from the proposed main gate, Indoor Badminton Stadium and Sports Arena along with IIITDM Bulk Services.

6. ACADEMIC PROGRAMMES:

This section provides details about the undergraduate programmes offered, along with their year wise Enrolment with gender, caste break-up, admission statistics, student's total strength, scholarships/monetary assistance and examination results.

6.1 Bachelor's programmes

6.1.1 B. Tech in Computer Engineering

B. Tech. in Computer Science and Engineering curriculum is modelled on the ACM (Association for Computing Machinery) recommendations and is the first of its kind engineering program offered in India. This program is aimed at producing engineers equipped with skills required for efficient hardware-software interaction. The program encompasses a variety of topics related to computation, analysis of algorithms, programming languages, program design, software, and computer hardware. In addition to courses offered by the conventional Computer Science curriculum, this program also offers elective/core courses such as Embedded Systems, Human-Computer Interaction, Simulation and Modelling, Signals and Systems, Product Design, etc., that equip the students with both computing and electronics engineering skills that are very much required for the successful creation of products requiring hardware – software interactions. Our graduates would find wide scope in VLSI, Embedded Systems and Electronics Product Manufacturing related industries in addition to application development avenues and higher studies that are open to conventional Computer Science engineers.

6.1.2 B. Tech in Electronics and Communication Engineering with specialization in Design and Manufacturing

Today's electronic product design and development requires skillful blend of expert hardware and software engineering together with a spirit of creativity and innovation that is also tempered by the practical concerns of manufacturability, cost consciousness and reliability. The Electronics and Communication Engineering with specialization in Design and Manufacturing curriculum is designed to provide advanced theoretical and practical training of all aspects relevant to the design, development, and production of modern electronic systems and subsystems. The Electronics and Communication Engineering with specialization in Design and Manufacturing (EDM) program prepares you for a wide range of engineering study and career options, including business, Biomedical Engineering, Computer Hardware, Aerospace Industry, Computer Software, Nanoelectronic chips, Photonics, Nanoengineering, Robotics, and Solar Energy Harvesting and Distribution.

6.1.3 B. Tech in Mechanical Engineering with specialization in Design and Manufacturing

Mechanical Engineering with specialization in Design and Manufacturing (MDM) offered by IIITDM Kurnool augments the existing Mechanical Engineering curricula offered by IITs by offering design courses on conceptualization, visualization, and engineering simulations. Equipped with well-structured instruction and learning resources and research facilities, the institute aims to disseminate education in the inter-disciplinary areas of design and manufacturing engineering.

Design visualization imparted through graphic art practice and product design practice enables students to conceptualize, design, simulate and develop tangible products. Students undergo interdisciplinary courses such as embedded systems, instrumentation, controls, automation and advanced manufacturing technology that will help them to design and develop innovative engineering products. Students can choose courses among electives and pursue their interests. The program offers a blend of courses that impart knowledge on design thinking and interdisciplinary engineering in addition to basic sciences.

6.1.4 B. Tech in Artificial Intelligence and Data Science

B.Tech. in Artificial Intelligence and Data Science is the most sought-after degree programme with a curriculum specifically designed to nurture future-ready Artificial Intelligence and Data Science professionals. Expert members from academia and industry have provided inputs in introducing specialized courses in the curriculum to suit the in-demand, industry-relevant skills. To further enhance the quality of the programs, the department has academic collaborations with several Industrial Experts who are working in some of the prestigious companies across the world.

The curriculum is designed based on the design centric theme as given below:
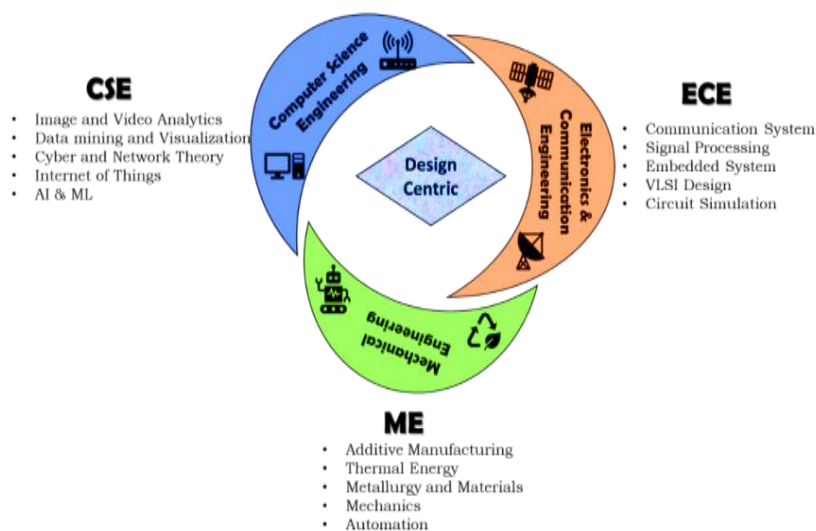
Theme of Undergraduate Programmes

6.2 Admission Statistics:

Details of statistics of admitted students along with male-female ratio and category wise admitted students of all the offered programmes are given below:

Admitted Students of UG programmes			Graphical representation
S. No	**Batch**	**No of students Admitted**	
1	2015	43	
2	2016	70	
3	2017	100	
4	2018	113	
5	2019	125	
6	2020	155	
7	2021	200	
Total No of Students		**806**	

Total no of Students Admitted

Category wise Statistics						
SI. No	**Batch**	**General**	**EWS**	**OBC**	**SC**	**ST**
1	2015	20		13	7	3
2	2016	30	---	16	15	9
3	2017	38	---	34	19	9
4	2018	49	---	39	17	8
5	2019	44	11	40	20	10
6	2020	62	17	40	24	12
7	2021	70	19	58	36	17
Total		**313**	**47**	**240**	**138**	**68**

Graphical Representation of GEN, OBC, SC, ST

CATEGORY WISE STATISTICS

	Gender wise Statistics			Graphical Representation

SI. No	Batch	Male	Female
1	2015	29	14
2	2016	53	17
3	2017	78	22
4	2018	93	20
5	2019	106	19
6	2020	134	21
7	2021	172	28
Total		665	141
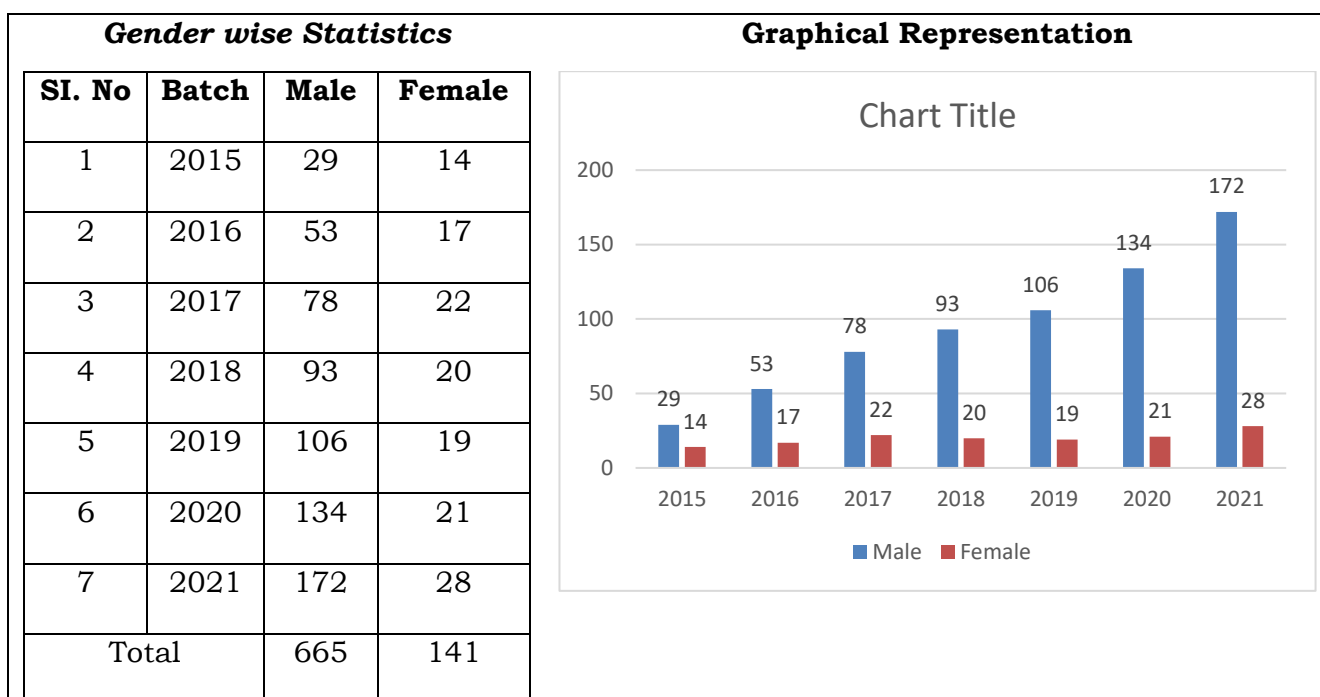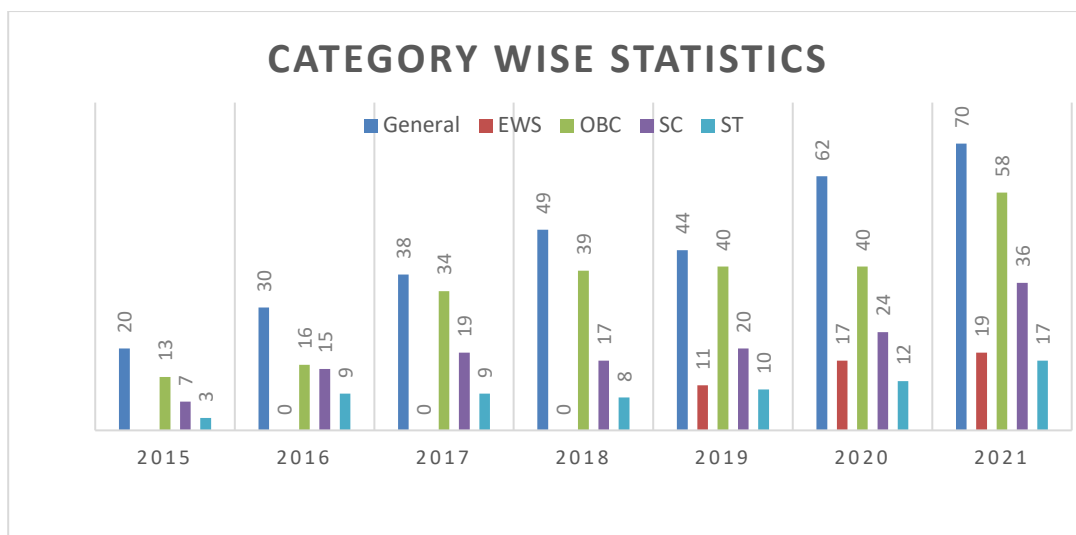
6.3 Master's programmes

6.3.1 M.Tech. - Computer Science and Engineering with specialization in Data Analytics and Decision Sciences

This Programme is designed by combining the fields of Data Analytics and Decision Sciences. Students will be given training on how to combine machine learning and deep learning techniques with mathematical optimization approaches, Data Exploration and Visualization, Decision Support System, Advanced algorithms with required programming skills, and simulation techniques to create value in specific industry-relevant application areas. In addition, a bunch of elective courses are

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being designed to offer deep-dives into specific industry application areas by integrating some of the demand and cutting-edge oriented topics with practical projects and challenges.

6.3.2 M.Tech. - Electronic System Design

Our M.Tech. programme is being offered with the specialization in "Electronic System Design". Our M.Tech. course is focused mainly on the recent trends in the electronic design automation industries. It's a four-semester full-time course with the relative credit system. In the first two semesters, the students will be undergone with core and elective courses. The course includes papers related to electronics and design theory. Here, advanced mathematics for electronic engineers, advanced digital VLSI design, advanced digital signal processing, embedded system design, and advanced electronic circuits/system design are offered as core courses. Also, we have offered elective courses such as IoT, electromagnetic interference and compatibility, digital image processing, wireless communication, and so on. In the last two semesters, the students will be undergone with the project dissertation work. Also, our M.Tech. programme includes laboratory courses such as advanced digital VLSI design, advanced digital signal processing, embedded system design, and so on. Since M.Tech. course gives the theoretical and practical aspects of recent trends of electronic design automation industries, it would be helpful for the students to acquire their career in reputed companies.

6.3.3 M.Tech. - Smart Manufacturing

The 21st century manufacturing facilities have ushered a new wave of manufacturing with an amalgamation of technologies from advanced robotics to fully integrated production systems. With smart manufacturing or Industry 4.0, manufacturers are moving towards a new level of interconnected and intelligent manufacturing system which incorporates the latest advances in sensors, robotics, big data, and controllers. To keep pace with the evolution of these "smart factories' requires highly skilled and nimble engineers to manage the increasing complexity and shorter mind-to market product cycles. Students will be trained in manufacturing processes, manufacturing systems, systems engineering, IT, Networks, and basic shop floor communications. The experiential learning approach will be followed and students will be gaining hands-on experience in many spheres of technology related to smart manufacturing.

7. STUDENTS AND SCHOLARSHIP DETAILS

7.1 Admission Statistics

Details of statistics of admitted students of all the offered programmes are given below:

Admitted Students of PG programmes							
S. No	Batch	No of students Admitted		S. No.	Branch	Students admitted	
						2020	2021
1	2020	11		1	M.Tech. - Computer Science and Engineering with specialization in Data Analytics and Decision Sciences	05	2
2	2021	3		2	M.Tech. - Electronic System Design	04	0
Total No of Students		14		3	M.Tech. - Smart Manufacturing	02	1

7.2 SCHOLARSHIPS FOR SC/ST /OBC/PWD/GEN STUDENTS

Since the inception, the institute made every effort to fill up the seats reserved for SC/ST /OBC/PWD/GEN candidates fully. These efforts included fee concession in payment of registration fee and relaxing the minimum eligibility requirements in admissions as per the Government of India norms.

Scholarships provided for Students:

For all admitted students belonging to SC/ST community tuition fee is waived since the inception and for the PWD category students who have been admitted from the AY 2020-21 onwards, the tuition fee is waived.

Following are the details of beneficiaries of various scholarship schemes for the **AY 2021-2022.**

Institute has also made full effort for implementing central sector scholarship and state government scholarship schemes for SC/ST /OBC/PWD/EWS/GEN students. The details are given in the Table 1.

Table 1: Central Sector Scholarships sanctioned/to be sanctioned for IIITDM Kurnool students

S. No.	Name of the Central Sector Scholarship Scheme	Number of Students to whom scholarship was/is sanctioned/to be sanctioned	SC		ST		PWD		OBC		GEN	
			Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1.	National Fellowship and Scholarship for Higher Education of ST Students - Scholarship (Formally Top Class Education for Schedule Tribe Students)	19	0	0	12	7	0	0	0	0	0	0
2.	Central Sector Scholarship of Top Class Education for SC Students	30	25	5	0	0	0	0	0	0	0	0
3.	Post Matric Scholarship for Students with Disabilities	9	0	0	0	0	0	0	4	0	4	1
4.	Central Sector Scheme of Scholarships for College and University Students	22	2	0	2	0	0	0	11	0	5	2
5.	Ishan Uday Special Scholarship Scheme For N.E.R	0	0	0	0	0	0	0	0	0	0	0
6.	Post matric Scholarship Schemes Minorities CS	2	0	0	0	0	0	0	0	0	2	0
7.	Prime Minister's Scholarship Scheme for Central Armed forces and Assam Rifles	1	0	0	0	0	0	0	0	0	1	0
8	Mukhyamantri Medhavi Vidyarthi Yojna (MMVY) scholarship from the Govt. of Madhya Pradesh	3	0	0	0	0	0	0	2	0	1	0
9	Post-Metric Scholarship Scheme for OBC Students by Govt. of MP	1	0	0	0	0	0	0	1	0	0	0
10	Scholarship to BC/MBC/DNC Students pursuing UG/PG courses in the institutions of Govt. of India(viz) IIT, IIM, IIIT, NIT and Central Universities	3	0	0	0	0	0	0	2	1	0	0

- 19 students have been benefited from the Central Sector Scheme "National Fellowship and Scholarship for Higher Education of ST Students – Scholarship (Formally Top Class Education for Schedule Tribe Students)" through Ministry of Tribal Affairs, Government of India.
- 10 fresh applicants were benefited through "Central Sector Scholarship of Top Class Education for SC Students" from the Ministry of Social Justice and Empowerment, Government of India. An amount of INR 1068000/-(Indian Rupees Ten Lakhs Sixty Eight Thousand Only) has been credited to their Aadhar mapped bank accounts via DBT mode.
- Twenty (20) renewal students got benefited through "Central Sector Scholarship of Top Class Education for SC Students" from the Ministry of Social Justice and Empowerment, Government of India. An amount of INR 942200/- (Indian Rupees Nine Lakhs Forty Two Thousand Two Hundred Only).
- From the Government of Tamilnadu, an amount of INR 331250/-(Indian Rupees Three Lakhs Thirty One Thousand Two Hundred and Fifty Only) has been sanctioned for three (3) students under the scheme "Scholarship to BC/MBC/DNC Students pursuing UG/PG courses in the institutions of Govt. of India(viz) IIT, IIM, IIIT, NIT and Central Universities"
- Some of the Ministries/Departments/Agencies under the State/Central Government are yet to sanction/release the scholarship amount to our students.

Central Sector Scholarship: Male/Female

Scheme	Total	Male	Female
1. National Fellowship and Scholarship for Higher Education of ST Students - Scholarship (Formally Top Class Education for Schedule Tribe Students)	19	12	7
2. Central Sector Scholarship of Top Class Education for SC Students	30	25	5
3. Post Matric Scholarship for Students with Disabilities	9	8	1
4. Central Sector Scheme of Scholarships for College and University Students	22	20	2
5. Ishan Uday Special Scholarship Scheme For N.E.R	0	0	0
6. POST MATRIC SCHOLARSHIP SCHEMES MINORITIES CS	2	2	0
7. Prime Minister's Scholarship Scheme for Central Armed forces and Assam Rifles	1	0	1
8. Mukhyamantri Medhavi Vidyarthi Yojna (MMVY) scholarship from the Govt. of Madhya Pradesh	3	3	0
9. Post-Metric Scholarship Scheme for OBC Students by Govt. of MP	1	1	0
10. Scholarship to BC/MBC/DNC Students pursuing UG/PG courses in the institutions of Govt. of India(viz) IIT, IIM, IIIT, NIT and Central...	3	2	1

Total Male Female

STATE-WISE DEMOGRAPHY OF CENTRAL SECTOR SCHOLARSHIP SCHEMES
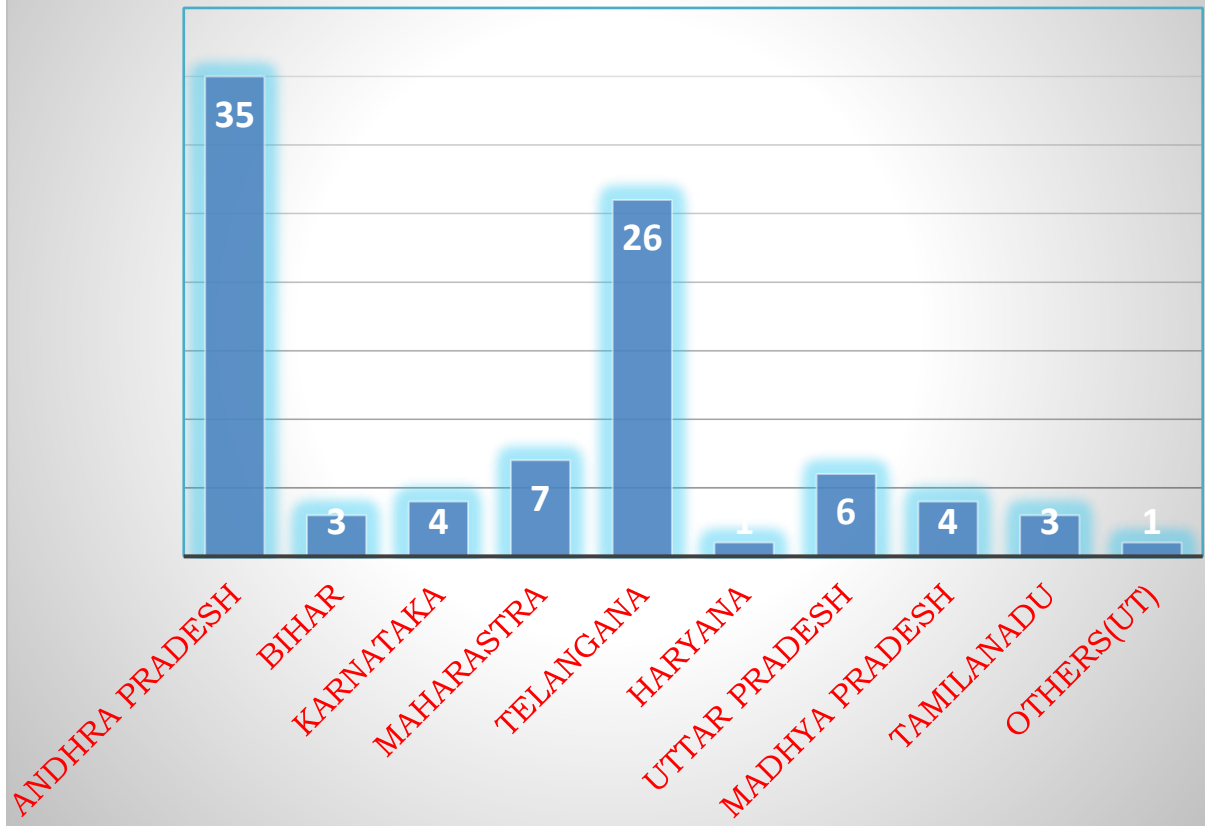
Fig 7.1: State-wise demography representation of Central sector Scholarship schemes

Fig 7.2: Pictorial representation of state-wise demography representation of Central sector Scholarship schemes

The Scholarship Section of the institute has made a full effort to facilitate sanction of Andhra Pradesh State government scholarship schemes namely **Jagananna Vidya Deevena** (**Tuition Fee Reimbursement Scheme)** and **Jagananna Vasathi Deevena (Mess & Hostel Fee reimbursement)** to our students.

Table 2: JVD Schemes beneficiaries for the AY 2021-2022

S. No	District	Male	Female
1	Anantapur	3	0
2	Chittoor	6	1
3	East Godavari	9	3
4	Guntur	7	0
5	Kadapa	6	1
6	Krishna	9	3
7	Kurnool	7	2
8	Nellore	4	2
9	Prakasam	5	1
10	Srikakulam	3	1
11	Visakhapatnam	10	0
12	Vizianagaram	3	0
13	West Godavari	6	0
	Total	78	14

➢ INR 2462950/-(Indian Rupees Twenty Four Lakhs Sixty Two Thousand Nine Hundred and Fifty Only) has been released to 85 students in Oct – Dec 2021 Quarter under Jagananna Vidya Deevena Scholarship Scheme.

➢ INR 2342195/- (Indian Rupees Twenty Three Lakhs Forty Two Thousand One Hundred and Ninety Five only) - has been released to 89 students in Jan – March 2022 Quarter under Jagananna Vidya Deevena Scholarship Scheme.

➢ INR 824700/ (Indian Rupees Eight Lakhs Twenty Four Thousand Seven Hundred only) - has been released to 93 students under Jagananna Vasathi Deevena Scholarship Scheme.

Fig 3: District-wise demography representation of JVD (Jagananna Vidya & Vasathi Deevena) Scholarship Schemes

7.3   Student Placements and Internships

The student placements were carried out successfully, even at the time of pandemic. The placement cell has worked efficiently and managed to place eligible students through offline and online mode. The average package offered was 9.51 Lakhs per annum and highest package was 1.3Crores per annum.
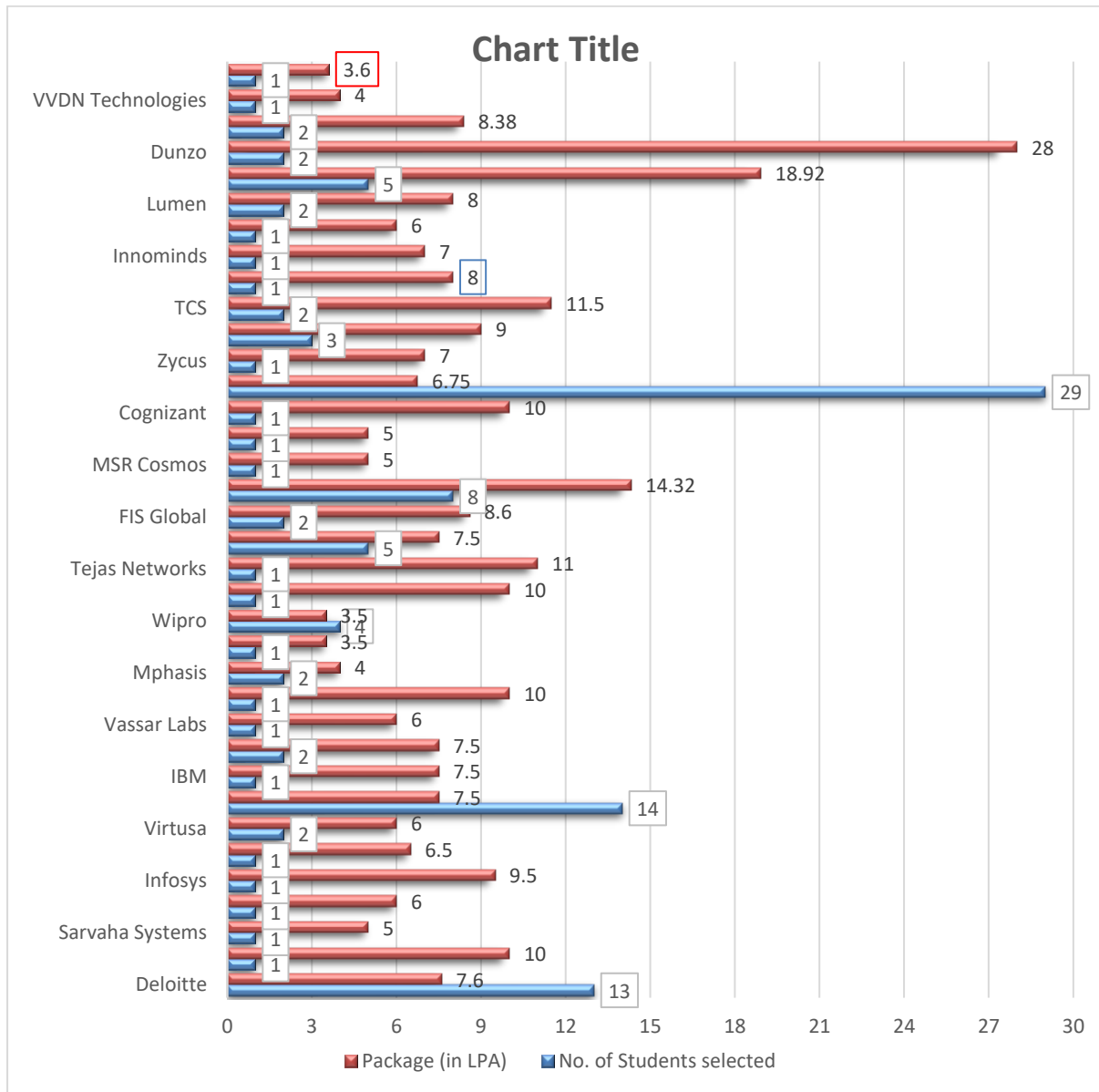
The detailed statistics of the placements secured through Placement Cell, IIITDM Kurnool is for the academic year 2021-2022 is given below:-

S. No	Details	Statistics
1	No. of students registered for the Placements	103
2	No. of offers received	118
3	No. of Students placed	80
3	% of offers received	77.66

S. No	Organization Name	No. of Students selected	Package (in LPA)
1	DELOITTE	13	7.6
2	PUBLICIS SAPIENT	1	10
3	SARVAHA SYSTEMS	1	5
4	LEOFORCE	1	6
5	INFOSYS	1	9.5
6	INFOSYS- OFF CAMPUS	1	6.5
7	VIRTUSA	2	6
8	CAPGEMINI	14	7.5
9	IBM	1	7.5
10	THRILLOPHILIA	2	7.5
11	VASSAR LABS	1	6
12	MAQ SOFTWARE	1	10
13	MPHASIS	2	4
14	TCS	1	3.5
15	WIPRO	4	3.5
16	TEJAS NETWORKS	1	10
17	TEJAS NETWORKS	1	11
18	CGI	5	7.5
19	FIS GLOBAL	2	8.6
20	LEGATO HEALTH TECHNOLOGIES	8	14.32
21	MSR COSMOS	1	5
22	ZYCUS	1	5
23	COGNIZANT	1	10
24	COGNIZANT	29	6.75
25	ZYCUS	1	7
26	TCS	3	9
27	TCS	2	11.5
28	PK GLOBAL	1	8
29	INNOMINDS	1	7
30	INNOMINDS	1	6
31	LUMEN	2	8
32	SYNOPSYS	5	18.92
33	DUNZO	2	28
34	IVY	2	8.38
35	VVDN TECHNOLOGIES	1	4
36	AMAZON	1	130
37	DATA PATTERNS	1	3.6

Total Number of offers Received = 118
Average Package Received = 9.52(LPA)
Highest Package = 1.3Cr PA

Graphical Representation of our Students who are got placed in different Companies:

No. of Students selected

- Deloitte
- Publicis Sapient
- Sarvaha Systems
- Leoforce
- Infosys
- Infosys- Off Campus
- Virtusa
- Capgemini
- IBM
- Thrillophilia
- Vassar Labs
- MAQ Software
- Mphasis
- TCS
- Wipro
- Tejas Networks
- Tejas Networks
- CGI
- FIS Global
- Legato Health Technologies
- MSR Cosmos
- Zycus
- Cognizant
- Cognizant
- Zycus
- TCS
- TCS
- PK Global
- Innominds
- Innominds
- Lumen
- Synopsys
- Dunzo
- IVY
- VVDN Technologies
- Data Patterns

Internships

As part of the curriculum, every B. Tech student needs to undergo an Internship for a period of Five months at reputed Industries / Institutions / Organizations after the completion of their III Year. Following are the statistics of the Internships secured through Internship and Placement Cell, IIITDM Kurnool during the academic year 2021-22.
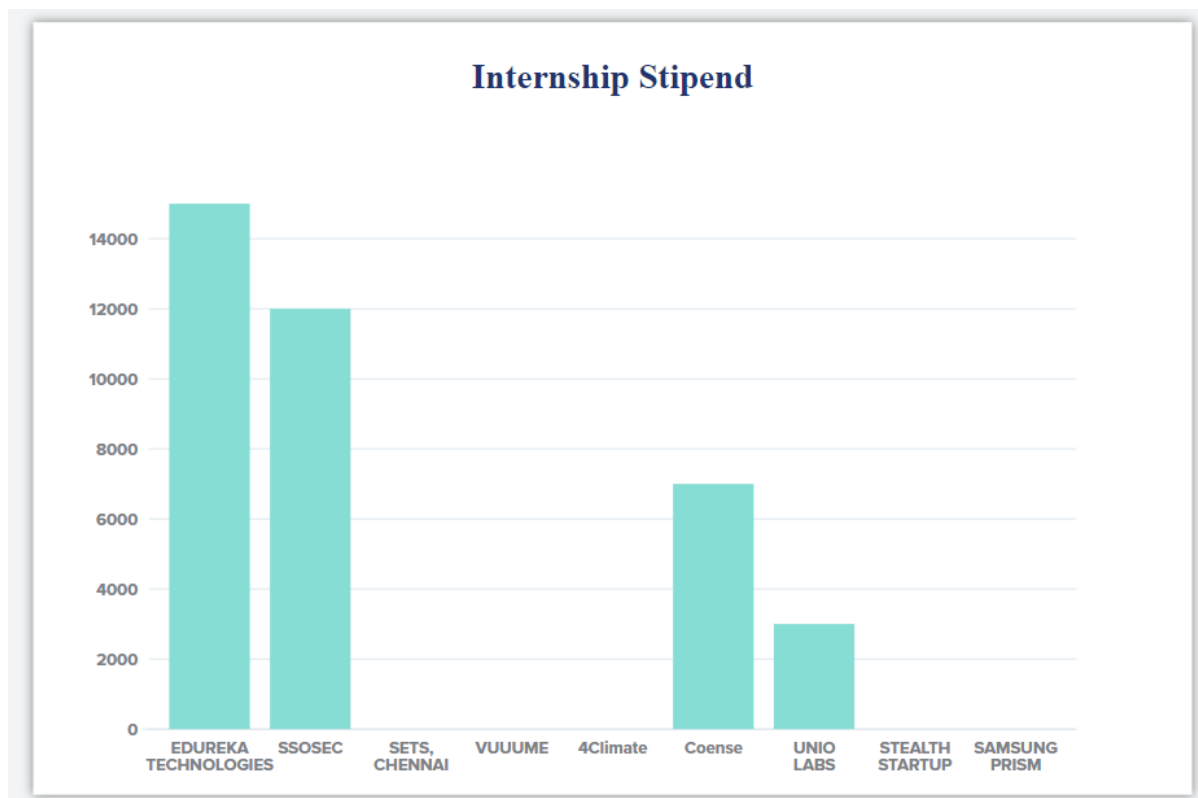
S. No	Details	Statistics
1	No. of students registered for the internship drives	103
2	No. of offers received	88
3	% of offers received	**85.4%**

S.NO	ORGANIZATION NAME	NO. OF STUDENTS SELECTED	STIPEND/MONTH
1	NIYO SOLUTIONS	3	40,000
2	EDUREKA TECHNOLOGIES	3	15,000
3	PHILIPS	5	30,000
4	CDAC- IISC BANGALORE	4	NIL
5	BOLTZMANN	1	10,000
6	KLIMB	1	12,000
7	EDVAK HEALTH PVT.LTD	1	20,000
8	CDAC – AI/ ML	5	NIL
9	AIROWIRE NETWORK PVT.LTD	1	20,000
10	ECHIBA LABS INSURANCE	1	2,000- 15,000
11	TERABEAM PROXIM WIRELESS PVT. LTD	1	15,000
12	WATERDIP LABS PVT. LTD	1	20,000
13	RACE ENERGY	1	20,000
14	BRAIN OVISION	1	NIL
15	CDAC – PUNE	4	NIL

16	SSOSEC	1	10,000
17	GANNET ENGINEERING	1	NIL
18	IISC BANGALORE	1	10,000
19	HABIB IT SOLUTIONS	1	10,000
20	RAMCO	1	15,000
21	BRIT / BARC	3	NIL
22	REPOZITORY	1	25,000
23	IISC BANGALORE	1	25,000
24	CVRDE, DRDO	4	NIL
25	IIT INDORE	1	NIL
26	IIT HYDERABAD	1	NIL
27	TATA HITACHI CONSTRUCTION	1	NIL
28	SAUMSUNG INTERNSHIP	38	NIL
TOTAL NO. OF OFFERS RECEIVED		**88**	

Internship Stipend

No. of Students Selected for Internship in Different Companies

Company	No. of Students
EDUREKA TECHNOLOGIES	3
SSOSEC	3
SETS, CHENNAI	2
VUUUME	4
4Climate	2
Coense	1
UNIO LABS	1
STEALTH STARTUP	1
SAMSUNG PRISM	10
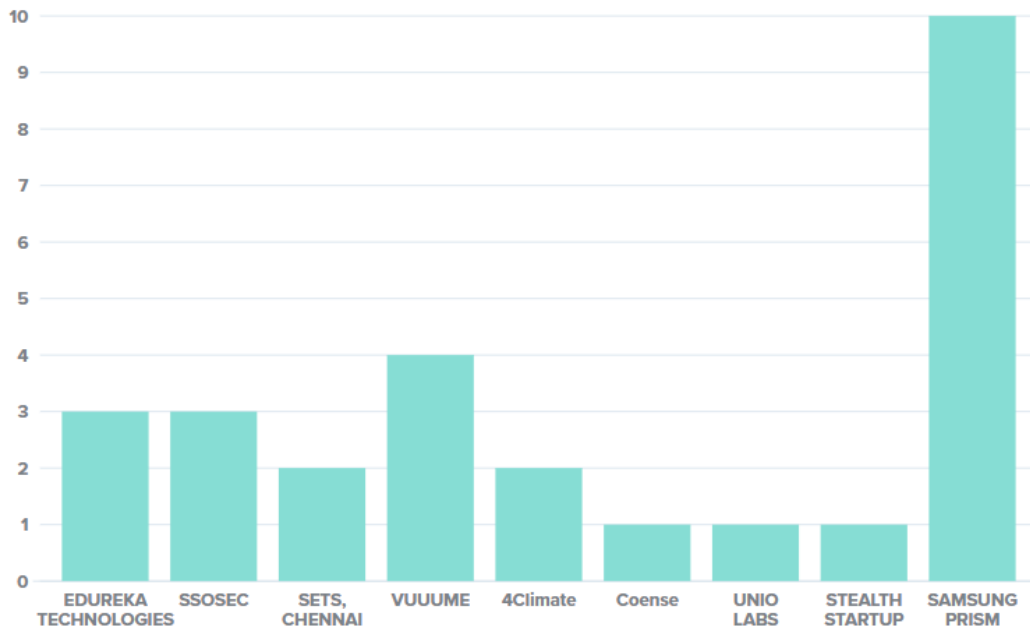
8 LABORATORIES

8.1 Mechanical and Manufacturing Laboratory

The objective of the manufacturing laboratory is to provide a comprehensive understanding of the field of conventional (traditional) machining processes, creating an emphasis on the techniques adopted in the industries. The laboratory holds equipment ranging from conventional numerically controlled lathe machines, which can be availed for internal and external threading operations for disparate machining parameters and respective values.

Numerically Controlled Lathe Machine

NC lathes were originally developed at a Japanese university in the late 1950s. Afterward, existing lathes were commonly equipped with servo-mechanisms, and both of these developments showcased and resulted in a significant evolution of the lathe up to the present day. A lathe is a machine tool that rotates a cylindrical material and cuts off unnecessary parts by putting a tool bit (cutting tool) against it. Besides turning using a basic right-cut tool, other lathe methods include drilling, boring, grooving, and threading. An NC lathe by comparison can selectively use several dozen types of tool bits in a preset procedure on numerical control-based automated machining. Not only does this make it possible to control the precise cutting or other machining positions through the use of a triaxial coordinate system, but it is also possible to achieve flexible machining by controlling the rotational speed and tool feed speed according to the material of the workpiece and the desired shape.

Numerically Controlled Lathe Machine

Drilling Machine

Drilling machines, also called drill press devices, are used for producing holes in hard substances. The drill is held in a rotating spindle and is fed into the workpiece, which is usually clamped in a vise resting on a table. The drill may be gripped in a chuck with three jaws that move radially in unison, or it may have a tapered shank that fits into a tapered hole in the spindle. Means are always provided for varying the spindle speed and on some machines for automatically feeding the drill into the workpiece.

Drilling Machine

Grinding Machine: Abrasive wheel

A grinding machine is a powerful tool that grinds or polishes the surface to make it free from any aberrations. The abrasive wheel rotates at a high speed that is used for the application of polishing. Grinding is used to finish workpieces that must show high surface quality (e.g., low surface roughness) and high accuracy of shape and dimension. As the accuracy in dimensions in grinding is of the order of 0.000025 mm, in most applications, it tends to be a finishing operation and removes comparatively little metal, about 0.25 to 0.50 mm depth.

Abrasive wheel grinding machine

Pocket Drill Machine

Pocket drills are similar to drilling machines with the goodness of easiness and portability. Such machines do not occupy much space during installation and can be mounted on any table for operation.

Pocket Drill

Drill Bits

A drill bit is a tool having a cutting point that makes a hole in the solid materials. It is made up of high carbon steel or alloy steel. For drilling, the drill bit is rotated with a downward press, which causes the tool to penetrate the material. It is also called a drill. For holding the drill bit a work holding device is used which is known as a drill chuck in a drilling machine.

Drill Bits

Bench Vice

Bench Vice is a mechanical device that holds an object in a place that is to be worked on. Bench Vice Material is made up of metal and is also known as woodworking or engineer's vice. Its main aim is to grip the object beneath and work on it. Planning. drilling. and sawing are a few examples of such works. The main use of a bench vice is a firm grip between the sawing/drilling/planning tool and the object. For such instruments, a bench vice is utilized to ensure a tight grip.

Bench Vice

Shaping Machine

A shaper is a machine designed for giving desired shapes to surfaces that may be horizontal, vertical, or flat. A shaping tool is used to cut in curves, different angles, and many other shapes. A disc is responsible for the tool rotation which results in forward and backward movement. The cutting tool is used to give the shape to the hard surface of metal or wood by removing the excess material.

Shaping Machine

Cutting Machine

A cutting machine is used to cut the metal rods, metal plates, and sheet metals into small pieces. The size of these pieces depends on the operator's preference. Such devices are power-driven and use human intervention for functioning. They have a cutter/blade in the moving position which is operated by a handle-type lever for descendence and ascendance.

Cutting Machine

- **Electric Switchboard**

  Electric switchboards are devices that are used to transmit electrical current from a power source to other points of termination that have some connection to the board. The source can be an electrical generator or some other device that feeds the current to the electric switchboard, which then allocates the current as needed to other devices. There are several features of the board that help to control the flow of current, making it easier to avoid overloads that could damage the board and any of the recipient devices.

Electric Switchboard

- **Arc Welding Machine**

  Arc welding machine performs arc welding on metallic materials. Arc welding is a type of welding process using an electric arc to create heat to melt and join metals. A power supply creates an electric arc between a consumable or non-consumable electrode and the base material using either direct (DC) or alternating (AC) currents.

Welding Machine

- **Measuring devices and tools**

  Measurement tools have various types; major products include vernier calipers, micrometers, dial gauges, gauges of varied types, bubble levels, protractors, and rulers; they are tools used in production processes and quality checks. Some of these products have inspection certificates or calibration certificates attached to them or conform to JIS standards, ISO standards, etc. Measuring instruments, on the other hand, include equipment to measure various states such as current/voltage, weight, temperature, hardness, water quality, viscosity, flow rate, and surface roughness. Some of them not only digitally display the measurement results, but also transmit data to record/display on external devices.

Measurement instruments

8.2 Thermal Laboratory

The main objective of a thermal laboratory is to illustrate the physical concepts and applications of Heat transfer, thermodynamics, and fluid mechanics. Heat transfer has profound application in the operation of numerous systems and devices. In a variety of situations, the temperature can be maintained, increased, or decreased by applying heat-transfer principles.

Heat transfer experimental facilities provide an opportunity to students to learn about the basics and application of different modes of heat transfer like conduction, convection, and thermal radiation. Different experiments such as thermal conductivity determination of non-metallic materials, Linear and Radial Heat Conduction system, Drop and Film wise condensation unit, Free and Forced Convection Heat Transfer Setup, Heat Transfer Through Pin Fin Apparatus, and

Insight Solar. Air Conditioning and Refrigeration kits provide practical hands-on experience and demonstrate how the heat moves from low temperature to high temperature

Combined Heat Exchanger Setup

Friction in Pipe Flow

Air Conditioning Tutor

Free and Forced Convection; Thermal Conductivity of Non Metallic Materials

The goal of the fluid mechanics facilities is to carry out experiments involving both compressible and incompressible flow. To improve our students' hands-on learning, we have facilities for researching the kinematics and kinetics of fluid flow as well as the principles of fluid statics. Different facilities available are Venturi and Orifice Combined Setup, Bernoulli's Theorem Apparatus, Wind Energy Training System, and Fluid Friction in Pipe flow. The objectives of the experiments include determining the forces produced when fluid flow occurs over a solid object, applications of the control volume approach, flow measurements based on the continuity equation and Bernoulli's equation, Major and minor losses in the flow,

Wind Energy Training Kit


Solar PV Training Kit

IC Engines

A detailed grasp of an IC engine's operation is made possible by its cut section view of CI and SI engines. A section of practically every component of the engine is taken to show the interior functioning elements for better comprehension. Students will be able to observe the effect of air-fuel ratio's on the operation of IC engines (both SI and CI engines), performance and characteristics in terms of heat balancing, and speed fluctuations.

Linear and Radial Heat Conduction Unit

Drop and Film wise Condensation unit
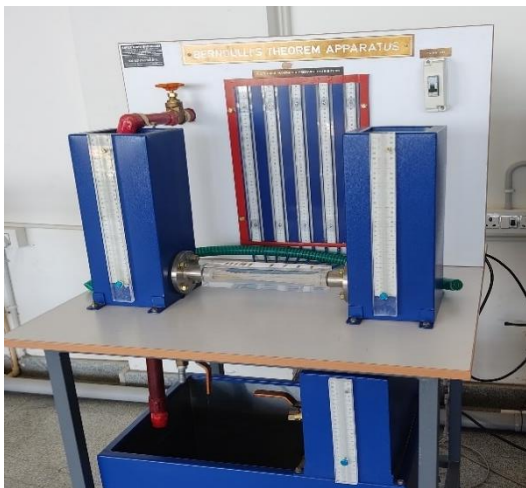
Bernoulli's theorem apparatus

Venturi and Orifice Meter

In this laboratory, disparate equipment ranging from solar harvesting rig, refrigeration (air conditioning) tutor, wind tunnel experiments, and diesel cycle study, a synergy is created between fluid mechanics and heat transfer laboratory as a combination of research and numerical modeling of the complex engineering task. This synergy created helps the students understand the environmental systems. As they progress, they tend to develop advanced tools that can be predictive by adopting interdisciplinary research. This abridgment of the gap between different branches of engineering is the focal point of our work at the Indian Institute of Information Technology, Design, and Manufacturing, Kurnool. This leads to erasing the boundaries of each engineering branch and leads to one module of work corresponding to the engineering spectrum.

8.3   Mechanical Design Laboratory

A branch of applied science that highlights the relationship between geometry and relative motion of the parts of the machine in consideration is broadly classified in the field of design practice laboratory.

- **Journal Bearing Apparatus**

  The apparatus consists of a plain steel shaft encased in a bearing and directly driven by a small electric motor. The bearing is freely supported on the shaft and sealed at the motor end. The motor speed is precisely controlled by a control unit and sealed at the motor end. The motor speed is precisely controlled by a control unit and can be run in both directions. The bearing contains twelve equi-spaced pressures tapping around the circumference and four along the axis. All are connected by a light flexible plastic tube to the manometer so that the pressure head of all sixteen points can be observed at a time. The bearing can be loaded by attaching a weight to the arm supported beneath it.

Journal Bearing Apparatus

- **Critical Speed Apparatus**

  The Critical Speed Apparatus is used to study rotating shaft criticality by practical experiment. The apparatus is equally suitable for student experiments or demonstrations. The bench-mounted apparatus consists of a flexible steel shaft that is driven by a variable speed motor. The shaft is mounted in two pivoting bearings which can be clamped in any position along the machine bed. A flexible coupling links the shaft to the motor and permits the shaft to adopt its true shape.

Critical Speed Apparatus

- **Balancing Apparatus**

  The apparatus allows us to do experiments in balancing a rotating mass system and check their results against the accepted theory. A sturdy base unit holds a test assembly on four flexible mounts. The test assembly includes a balanced steel shaft mounted horizontally on low friction bearings. The equipment includes a set of four rotating masses (balance blocks). The balance blocks fix in any horizontal position and relative angle on the shaft. Each block contains a different (and removable) circular insert, allowing students to create four blocks of different mass and moment. Without the inserts, the blocks become four identical masses for simple balancing tests.

Balancing Apparatus

- **Motorized Gyroscope Apparatus**

  The setup consists of a stainless-steel disc mounted on a horizontal shaft, rotated by a variable speed motor. The rotor shaft is coupled to a motor mounted on a trunion frame having bearings in a yoke frame, which is free to rotate about a vertical axis. A weight pan on the other side of the disc balances the weight of the motor. The rotor disc can be moved about three axes. Torque can be applied by calculating the weight and distance of weight from the center of the rotor. The gyroscopic couple can be determined.

Motorized Gyroscope Apparatus

- **Universal Vibration Setup**

  This system contains all the necessary parts to undertake free and forced vibration, resonance, and damping. A beam pivots at one end from a bracket and bearing attached to the HVT12F Vibration Frame. A spring is attached to the free end of the beam to enable the beam to vibrate. The horizontal position of the spring can be adjusted using the integral adjustment system, and vibration travel is restricted via factory set "stops". The beam can vibrate freely by displacing the free end by a known amount, or the beam can be forced to vibrate using the supplied Motor Exciter. The motor exciter has integral imbalanced masses, which when rotated excites the beam to vibrate. The excitation frequency of the beam is controlled using the Speed Controller and its output is displayed with the Tachometer. The excitation frequency and beam displacement are both fed into the Data Acquisition System.

Universal Vibration Setup

- **Cam Analysis Apparatus**

  The machine allows studying cams and followers. It shows how they convert rotary to linear motion and helps students understand their limits of use before the onset of 'bounce'. It also introduces students to key topics of cam terminology such as 'nose', 'flank', and 'dwell'. The main part of the product has a precision machined heavy steel base that holds a high-torque direct-drive variable-speed motor. The motor shaft connects through coupling to the main

shaft which then passes into the cam test area. Self-aligning heavy-duty bearings support the shaft which has a substantial flywheel. The flywheel reduces speed variations as the torque demand changes during the cam rotation cycle. The cam under test fits to the end of the main shaft, accurately mounted both axially and radially to ensure repeatability. The follower fits the bottom of a vertical shaft running in low-friction linear bearings. TecQuipment includes a tool for easy changeover of a choice of two followers. Students may also fit one of a choice of two compression springs and adjust their preload. These add to the mass of the follower and vertical shaft pushing the follower onto the cam face. Students may also add different masses (included) to alter the mass of the follower and thus the force applied to the cam. The selection of springs, followers, and cams allows for a wide range of investigations.

Cam Analysis Apparatus

The Design Laboratory consists of the theory of machines where the laboratory equipment is utilized to equip students with the basics of machine engineering (motion) to the advanced field of studies which corresponds to free and forced vibration entity, friction in bearing, geared system, and governors. A wide range of equipment is available ranging from static and dynamic balancing equipment which is used to study the balance of masses statically and dynamically of a single rotating system (observation is to find the effect of unbalance in the rotating mass), to motorized gyroscopic is used to study the gyroscopic effect of a rotating disc, the gyroscopic effect of a rotating disc, the universal vibration setup provides a comprehensive unit to perform the vibration experiments, the universal frame present in the laboratory facility is quick to assemble and can be modified based on the experiment performed by the students ranging from simple relation of the pendulum, the radius of gyration (compound pendulum, b-filar suspension), undamped free vibration of the spring-mass system, longitudinal vibration of helically coiled spring, torsion, damping coefficients, forced damp system, etc. A cam analysis equipment is present to study displacement vs. angle of rotation, and follower weight on the bounce and also to study the effect of compression (spring) bounce. The journal bearing setup is provided, which is used to study the pressure profiles of lubricating oil at various conditions of load and speed, plotting the Cartesian polar pressure curves, and measuring the frictional torque and power

transmit. Apart from this in the Design laboratory, students perform Industrial sketching, Modelling of objects, and analysis of materials using Sketching Tool, AutoCAD, MatLab, and ANSYS tools. This helps the students to proactively work on real-time modeling problems and helps them attain knowledge in a wide database of the framework.

8.4   VLSI Laboratory:

VLSI Lab is highly equipped with upto date industry standard VLSI Tools and hardware resources. The lab facility includes course lab which provides projects and assignments for VLSI design and synthesis. The VLSI lab implements the theoretical concepts studied as part of subjects CMOS VLSI Design, Microelectronics Circuits and Verilog, for students to experience in practical with the help of Xilinx Vivado and LTSpice.

The lab introduces a complete custom IC design flow, ASIC design flow and AMS (Analog and Mixed Signal) flow for Analog circuits, Digital circuits and Analog and mixed signal circuits are designed respectively. The analog design involves schematic (standard cell), test schematic capture and symbolic representation of circuit topologies using LTSpice. Simulation of the test circuit to perform various analyses such as transient, DC and AC is facilitated.

The digital design involves the realization of various digital circuit components using Register Transfer Logic (RTL) code, Compilation of the same using Xilinx Vivado, The synthesis of the verified RTL code to obtain the gate level netlist is performed thereon. Synthesizing the design (Synthesis, netlist generation, place and route etc..) in to output files that FPGAs can understand and program the output file to the physical FPGA device (ZedBoard) using the available

programming tools is done. In the same facility embedded systems, microprocessors and controllers, communication systems and digital signal processing lab is carried out. This shows multi facility equipped laboratory for amalgamation of students learning.

S. No	Equipment	Images of the equipment	Description
1	ZED BOARD - 7000		1. Can switch the between the two video inputs or different video formats. 2. Maximum input and output resolution 2048pixel to 2048 pixel. 3. Real time scale upto 64X. 4. Built in YCrCb to RGB converter, YUV to RGB. 5. Converter and RGB to YCrCb converter.
2	SPECTRUM ANALYSER		1. 1.9 kHz – 6.2 GHz frequency range 40 MHz real time bandwidth External reference and trigger/sync inputs USB3.0 2. Power/control/data interface to PC Publicly-accessible software application programming interface (API) for Windows and Linux operating systems 3. RSA306B-SMA model provides a SMA connector. 4. RSA306B-SMA with the No-Shell option ships without the plastic housing, allowing, integration

S. No	Equipment	Images of the equipment	Description
3	8086 MICROPROCESSOR		1. INTEL 8086CPU AT 4.77 MHZ CLOCK SPEED. 2. 16KB for monitor EPROM upgradable to 64 KB. 3. 16KB RAM expandable to 64KB. 4. Battery backup provision for RAM upto 64KB compatible keyboard 5. 24 TTL I/O lines brought out to two nos., of 26 pin FRC connector number of standard RS232C compatible serial port brought out to a pin D type male connector 6. 3 channel 16 bit counter/timer using 8253 7. 8 numbers of interrupt lines are terminated at a 10 pin connector. 8. Kit operates with a single +5V/DC supply 9. Built-in line assembler & Disassembler.
4	ARM- LPC 2148 KIT		1. 16-bit/32-bit ARM7TDMI-S microcontroller in a tiny LQFP64 package. 2. 8 kB to 40 kB of on-chip static RAM and 32 kB to 512 kB of on-chip flash memory. 3. 128-bit wide interface/accelerator enables high-speed 60 MHz operation.

S. No	Equipment	Images of the equipment	Description
5	TIVA C SERIES TM4C123G		1. Frequency-80 MHz 2. 32 –bit ARM dual 12 bit ADC. 3. 256 kb flash /32bit Kbsrm/ 2 Kbeeprom.

8.5   Digital Logic Design Laboratory:

The Digital Logic Design Lab (DLD Lab) is one of the most important and well-equipped lab of the Department. This lab is re-designed such that the students get an opportunity to learn across the course regarding Digital systems course. This is an undergraduate course which deals with the basics of digital systems design. It provides the prerequisites for advance courses in digital electronics. Because of the significance of this course the DLD Lab has been carefully designed to meet the course requirement. Analog Circuit Laboratory is also conducted in the DLD lab facility were, disparate analog circuits are designed (Amplifiers, Filters, Oscillators). The Analog electronic circuit includes an analog signal with any continuously changeable signal. While working on an analog signal, an analogcircuit alters the signal in some manner. Analog circuit can be used to convert the original signal into some other format such as a digital signal.

S. No.	Equipment	Images of the equipment	Description
1	DIGITAL TRAINER		1. On-Board Digital input (switches). 2. BCD to seven segment. 3. IC 555 timer, Edge trigger. 4. IC 74121 Multivibrator 5. On-Board Bread Board for external circuits. 6. LED Output indication.

S. No.	Equipment	Images of the equipment	Description
2	FUNCTION GENERATOR		1. Dual-channel, 25 MHz or 60 MHz sine waveforms. 2. 12.5 MHz or 30 MHz square waveforms 3. 14 bits, 125 MS/s or 300 MS/s arbitrary waveforms with 8 k points or 1 M points record length. 4. Amplitude 1 mVp-p to 10 Vp-p into 50 Ω loads.
3	DIGITAL STORAGE OSCILLOSCOPE		1. Dual time base Math Fast Fourier Transform (FFT) 2. Pulse Width trigger capability 3. Video trigger capability with line-selectable triggering 4. External trigger Setup and waveform storage 5. Variable persistence display 6. RS-232, GPIB, and Centronics ports with the optional TDS2CMA 7. Communications Extension Module
4	REGULATED POWER SUPPLY		1. 3 channel DC supply. i)dc supply of 15V (variable). ii) 5V(fixed). iii)30V (Variable).

8.6   Electrical Drives and Sensor Instrumentation Laboratory

Current Sensing of Electrical Drives is required for the implementation of current limit control, inner current control loop of closed-loop speed control, closed-loop torque control of a dc drive, for sensing fault conditions, and for

sensing speed in dc drives by back emf sensing method. In order to avoid interaction between control circuit, carrying low voltage and current, and power circuit involving high voltage and current and sometimes harmonics and voltage spikes, isolation must be provided between the two circuits.

S. No.	Equipment	Images of the equipment	Description
1	MIXED DOMAIN OSCILLOSCOPE		MODEL NO: MDO36024, 4 CHANEL NON ISOLATED,200MHZ,2.5Gs/s
2	CURRENT PROBE		MODEL NO: N2783B, 30A/100MHZ
3	EMC PROBE SET(4-PIECES		MODEL NO:TBPS01, LESS THAN75V DC OR AC(UPTO 50V)
4	20dB WIDEBAND AMPLIFIER		MODEL NO:TBWA2_20, 20dB

S. No.	Equipment	Images of the equipment	Description
5	VOLTAGE PROBE (PERIPHERAL FOR MDO		MODEL NO:TPP0250, 250MHZ,300V
6	LINE IMPEDANCE STABILISATION NETWORK LISN		MODEL NO:TB0H01, 5uH
7	LAPTOP		MODEL NO:15g-br001tu, intel i3 prosessor,1TB HD

8.7 Internet of Things (IOT) Laboratory

The Internet of Things (IoT) is emerging as the next technology and the technocrats are working to develop smart solutions for applications in the field of cyber physical systems, surveillance operations and Industry 4.0. The internet is used to connect billions of everyday devices, ranging from fitness bracelets to industrial equipments. It also opens up a host of new opportunities and challenges for companies, governments and consumers. The objective of the IoT laboratory is to impart knowledge about the recent advancements that merges the physical and online worlds with various devices. The real-world problems will be solved by developing a smart system that encompasses sensors, actuators, microcontrollers, and microprocessors. The collected data and decisions can be fed for analysis using cloud platforms. The laboratory has desktop systems to generate test datasets and to perform simulation using open-source software.

Arduino Microprocessor


Zigbee unit

Raspberry Pi unit

Passive infrared sensor

The laboratory has onboard computers that help to witness the results in different environments. It can be embedded with several devices to incorporate machine intelligence. The smart network can be used to perform data collection, data forwarding and result processing. The wireless network relies on the light-weight networking protocol. The gateway application can be implemented is implemented to store the information gathered from the routers. The laboratory concentrates to provide a complete understanding about the architecture of IoT setup. The merits of the abstract layers in the architecture are taught to a student that helps them to design an end to end solution. The lab is also equipped with network interfaces and devices required to perform data communication. The laboratory has 20 units of fabricated IoT kits for doing experiments with the available data.
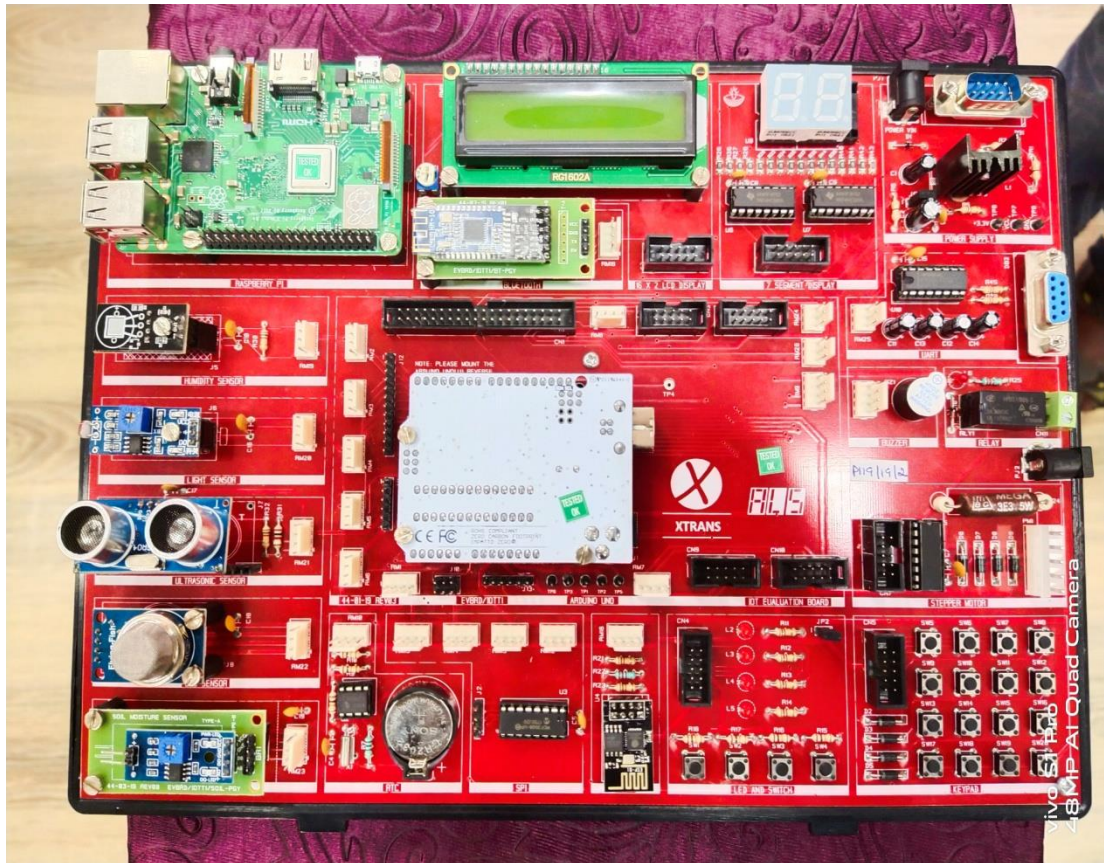
8.8   Computer Science and Engineering Laboratory

At present, there are 41 systems with wired connectivity and sufficient access points are provided for wireless connectivity. All computer labs and servers are supported UPS system with good backup. Most of the CSE lab courses such as Problem solving and computer Programming, Data Structures and Algorithms, DBMS, Design and analysis of algorithms, Compiler Design, etc, are conducted in this lab. All the conventional software to run the CSE courses are installed in these systems.

To provide high-quality education and learning, two new laboratories named Language Laboratory and High-Performance Computation Laboratory have recently been established at our Institute. Prof. H. A. Ranganath, Hon'ble Chairman, Board of Governors, IIITDM Kurnool, was virtually present as the Chief Guest at the inaugural ceremony.

8.9   Physics Laboratory: Fundamentals of Science
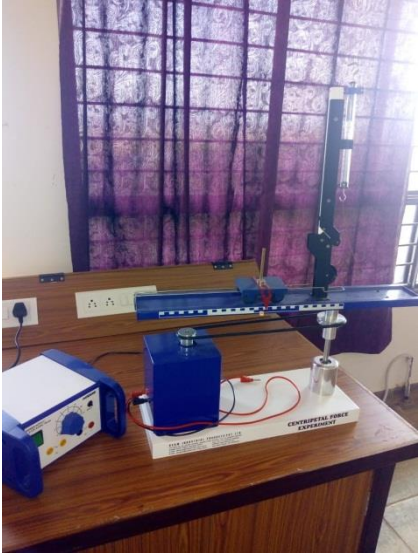
The General Physics Lab is a teaching lab catering to fresher's joining the three B. Tech programmes offered by the institute. The lab has a set of experiments mainly in the areas of mechanics, wave mechanics, electricity and magnetism, and

thermodynamics. A set of ten to eleven experiments form the lab course taken by every first year student in the B. Tech programme.

S. No.	Equipment	Images of the equipment	Description
1	TORSION PENDULEM 1. Stand 2. Steel disc 3. Wires		A torsional pendulum consists of a disk (Of mass 250g) suspended from a wire (of material Stainless Steel, Nichrome wire, Magnium, Brass), which is then twisted and released, resulting in an oscillatory motion to find out the Torsional rigidity of wire.
2	BAR PENDULUM 1. Metal bar 2. Knife edge 3. Bar holder		Bar pendulum: It is a weight suspended from a pivot so that it can swing freely. When a pendulum is displaced sideways from its resting, equilibrium position, it is subject to a restoring force due to gravity that will accelerate it back toward the equilibrium position.
3	STRAIN GAUGE 1. Strain gauges 2. Wooden rules 3. Power supply machine 4. Wheat stone bridge		A strain gauge producing current in milli amps and voltage in milli volts connected through a wheatstone bridge to a strain gauges attached over wooden specimen to find out Young's modulus of a wooden rule.

S. No.	Equipment	Images of the equipment	Description
4	MICRO STRUCTURE 1. Belt grinding machine 2. Disc polishing machine 3. Micro scope (RMM88) 4. Specimens		To find the micro structure of the given specimen using belt grinding machine (1200rpm) and Disc polishing machine (1800rpm) and various etchant solutions.
5	FRICTION SETUP 1. Inclined plane 2. Masses 3. Different surfaces		An inclined of length 1m is used to find out the static friction coefficient for different masses over different surfaces like Rubber sheet, metal sheet, wooden sheet, and Acrylic sheet.
6	SPRING CONSTANT SETUP 1. Frame 2. Spring 3. Masses (20g)		A spring supported by a beam and suspended with masses (20g, 40g, 60g, 80g, 100g) to find out the stiffness of spring.

S. No.	Equipment	Images of the equipment	Description
7	FLY WHEEL SETUP 1. Fly wheel 2. Suspended masses (100g) 3. Stop watch		A fly wheel is mounted on an axle on which is also supported by suspended masses (100g, 200g, 300g, 400g & 500g).
8.	Linear Air Track kit 1. Compressor 2. Photo gates 3. Air track 4. Masses		A linear air track carrying 2 bodies with or without masses and the speed can be calculated using photo pickup gates.
9	Laws of motion kit 1. Track 2. Timing cars 3. Photo gates		To demonstrate the Newton's Laws, two timing cars with photo pickup gates mounted on a straight levelled track.
10.	SCI Comprehensive timing car kit 1. Tracks 2. Timing cars		Timing cars were mounted on two different kinds of paths as shown in figure.

S. No.	Equipment	Images of the equipment	Description
11	Free fall apparatus		A stand with 2 photo pickup gates does study the motion of freely falling body.
12	Centripetal force setup		Centrifugal force is studied to demonstrate centripetal force.
13	Melde's Setup 1. Tuning fork 2. Electro magnets 3. Power module 4. masses		Apparatus to test the relationship between the tension, mass per unit length, frequency, and wavelength.

| S. No.	Equipment	Images of the equipment	Description
14	Gravitational balance 1. Masses 2. Oil		Determining G, the fundamental universal gravitational constant and verifying inverse-Square law.

9. CENTRAL FACILITIES AND SERVICES

The Central Library|IIITDMK is designed to give access to high quality instructional and research materials to the users of the institution. IIITDM intends to establish a model library that will be the principal academic facilitator of the institution. The library will play a vital role in the development and diffusion of knowledge in the academic institution. The central library contains a comprehensive variety of materials in the disciplines of Electronics and Communication Engineering, Computer Science and Engineering, Mechanical Engineering, Physics, Mathematics and English language and literature. The materials include reference books, textbooks, CDs/DVDs etc. The library offers technical services such as classification, cataloguing, and documentation to the users of our institution with the purpose of providing research and instructional assistance. Library contains a large choice of publications and eresources linked to the relevant fields.

Facilities offered at the Central Library, IIITDMK: A Prelude

S. No.	Library facility
1.	Online Public Access Catalogue (on-campus access only)
2.	Circulation
3.	Reference Service
4.	Reading Hall
5.	Table of Content Service
6.	Project & Competitive Examination Collection
7.	Similarity & Plagiarism Software – Turnitin iThenticate & Ouriginal
8.	IRINS
9.	IEEE Xplore, South Asia Archive, DELNET

Membership & Resource Access

In addition, the Central Library is a member in the illustrious DELNET. It has been founded with the primary purpose of fostering resource sharing among the libraries through the establishment of a network of libraries, which is the primary mission of the organisation. It strives to gather, preserve, and distribute information in addition to providing users with computerised services, coordinate efforts for appropriate collection growth, and, if feasible,
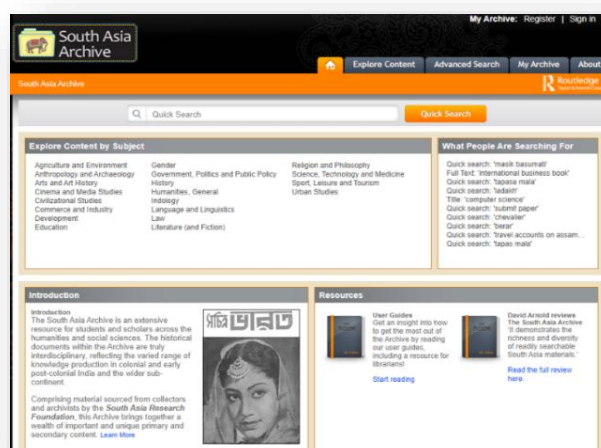
minimise needless duplication.

The Central Library now has access to the South Asia Archive, which offers online access to millions of pages of rare primary and secondary materials across the social sciences and the humanities. This database became available at the beginning of this academic year. The South Asia Archive is a genuinely multidisciplinary resource that spans the Humanities and Social Sciences. It covers topics as diverse as economics, politics, and anthropology, as well as cultural studies, history, education, and literature. Due to the extensive collection of content, investigation and study may be conducted across all of the various topics.

IEEE Computer Society Digital Library

The IEEE Xplore digital library is a powerful resource for discovery of scientific and technical content published by the IEEE (Institute of Electrical and Electronics Engineers) and its publishing partners. IEEE Xplore provides web access to more than five million full-text documents from some of the world's most highly-cited publications in electrical engineering, computer science, and electronics. IIITDM Kurnool subscribed IEEE CSDL for the benefit of the students, research scholars and faculties.

Services

The Central Library provides various user-oriented services and functions as the centre of information of the Institute. Additional services of the library include circulation service which issues books from the library collections and recollection, apart from shelving and arranging books and materials as per the standard norms. New Arrivals, Table of Content Alert and Article Sharing Services are the major alerting services that are offered at the library.

As per the recommendations and guidelines of 'COPE – Committee on Publication Ethics' for promoting integrity in scholarly research and publications, the library provides access to plagiarism software 'OURIGINAL' & Turnitin iThenticate thereby reducing the scope for plagiarism and increasing the quality and originality of the research work being conducted on campus.

Library is also maintaining **IRINS** website of the institute where it facilitates the academic, R&D organizations and faculty
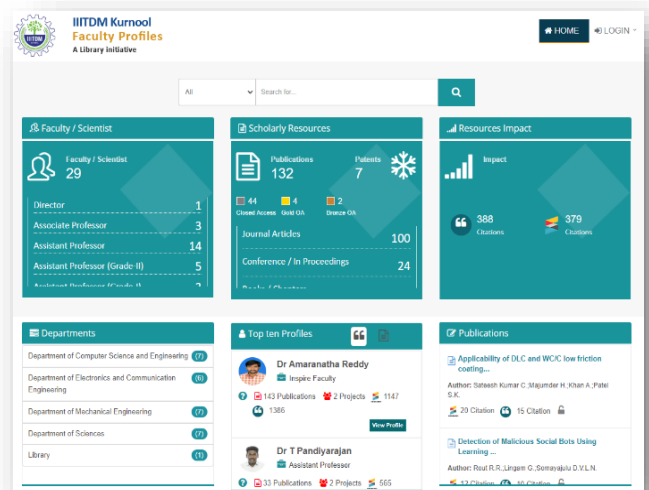
members, to collect, curate and showcase the scholarly communication activities and provide an opportunity to create the scholarly network. As per the current publication profile, 56 new research articles, other publication added to the IRINS portal. The current citation of the institute is 388 and 379 from Scopus and CrossRef respectively.

Koha, an open-source library automation programme, is used by the library to manage its collection using barcodes. The Online Public Access Catalogue (Campus-Access only), the fastest and most precise instrument for information retrieval, available to the users to search our catalogue. Additionally, there is free Wi-Fi access provided for patrons within the library.

Library Collection

Sl. No.	Item Description	2018-2021	2021-2022
1.	Books	3606	762
2.	Reference Books	110	118
3.	Audio / Video Collection	156	2
4.	Project & Thesis	10	137
5.	Gratis	201	182
	Total	4083	901

User Statistics

Visitors statistics: The information hub of the Institute is the library! Despite of pandemic situation, library use has increased. Students regularly coming to

the library for a variety of reasons, including assistance with research, access the Eresources and study spaces, finding course reserves, and borrowing books and other resources. The statistics of the current period is showing below.

LIBRARY USERS STATISTICS

	JUL	AUG	OCT	JUL	AUG	OCT	JUL	AUG	OCT	JUL	AUG
			2021						2022		
Series1	23	109	396	309	366	170	13	210	165	629	216

MONTH | YEAR
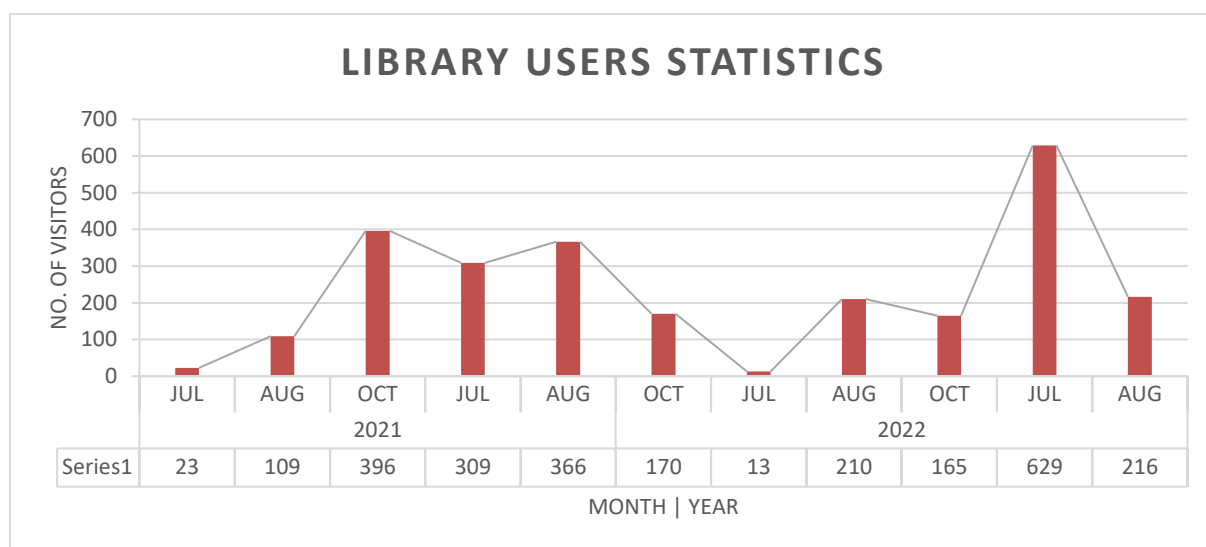
Transaction statistics: Circulation continues to rise as students access materials from library including submit, Borrowing. In 2021-2022, the 3586 transaction carried out which includes issue, return, and renewal of books.

TRANSACTION TYPE	NO. OF TRANSACTION
ISSUE	1383
RENEW	652
RETURN	1551
TOTAL TRANSACTION	**3586**

Programme Organized

National Library week – 2021 is celebrated annually highlighting the valuable role libraries, librarians, and library workers play in transforming lives and strengthening our communities. In this regard our Institute central Library conducted the **National Library Week- 2021** from November 14th -20th. By inaugurating the events, Honorable **Director Prof. D. V. L. N. Somayajulu** started the National Library week-2021. Faculties, staffs, and students are presented in the inauguration ceremony. Central Library conducted various events throughout the week. During 05 – 15th November, 2021: - Book donation campaign was organized. The campaign was a successful drive. We also conducted 'Story Narration' competition on same occasion where **Sai Prakash (118ME0021)** from Final year Mechanical Engineering won the prize. "Puzzle Solving Competition "was conducted in connection with NLW on 17th November, 2021 where **Mithilesh Handrale (118CS0003)** from final year Computer science Engineering won the prize.

Turnitin iThenticate online workshop was arranged in connection with the National Library Week Celebration to the student's, research scholars, staff and faculty. The event itself had a good turnout. The response was overwhelming. In the Closing ceremony took place in the seminar hall, prizes and certificates were distributed to winners and participants by Honorable Director.

9.2   Health Center

The Institute Heath Centre is located within the campus

TIMINGS:

On Working Days   **:** 9:00am to 1:00pm and 5:00pm to 7:00pm.

IIITDMK Health Centre is a unit with one medical officers, one duty doctor who are assisted by paramedical staff. The students, employees and their dependents almost 696 members are getting benefited with the daily OPD

FACILITIES:
The Health Centre is having well established facilities where blood, urine tests will be collected and sent to laboratory at Kim's hospital. The other facilities are ECG, pulse oximeter, nebulizer, oxygen support, o2 masks.

The laboratory at KIMS hospital is equipped with hematology analyzer, Biochemistry analyzer, urine analyzer, hot air oven, R-8C laboratory centrifuge, Blood mixer, binocular microscope. All the routine blood tests (Hemogram, LFT, RFT, lipid profile, thyroid profile) are done.

We have an observation room for emergency and first aid of patients.

SPECIALIST SERVICES:

The Service Provider shall arrange visit of medical specialists in Pediatrics, Obstetrics, General Medicine, Orthopedics and other as per requirement of the Institute. Such visit would be paid on market rates as mutually agreed.

WASTE DISPOSAL:

We are also following the rules of Bio medical waste as per Ministry of Environment and Forests.

AMBULANCE SERVICE:

Ambulance service is provided 24X7. Ambulance is equipped with O2 cylinder, nebulizer and first aid box with routine medicines, essential lifesaving drugs.

CONTACT NO.:

Ambulance can be contacted from the Phone numbers given below.
Phone: 9885261736; Alternate Contact Number: 9959031516
Emergency phone number is displayed in all buildings and hostels.

Name	Designation
Dr.K.Niharika	Medical Officer-1 (9AM-1PM)
Dr.Pooja Rani	Duty Doctor(5PM – 7PM)
Mr.Suresh	Nurse
Mr.Gopi	Nurse
Mr.Narendra	Nurse
Mr.Naga Raju	Ambulance Driver
Mr.Yesanna	Ambulance Driver

ACTIVITIES DONE IN MEDICAL UNIT

'A single pint can save three lives; a single gesture can create a million smiles.' With an initiative to remove the demand -supply gap of blood units, IIITDM KURNOOL medical unit and NSS in association with Indian Red Cross society blood centre ,kurnool conducted blood donation camp on14/06/2022.A huge number of people participated voluntarily in blood donation camp.There were around 100 registrations by students and staff and 40 blood donations done.Along with blood donation blood grouping and matching has been done for free of cost.

10 MoUs Signed

S. No.	Name of the Organization	Date of Signing the MoU	Duration	Activities Planned	Single Point of Contact	Progress
1	IIM Visakhapatnam	18 Sep 2021	Five Years	Joint Programmes, Collaborative Research, and Exchange of Academic Faculty & Researchers	Dr. J. Krishnaiah	(1) Joint programmes are being planned.
2	Mtab Technology Pvt Ltd, Chennai	21 Aug 2021	Two years	Assessments, Workshops, Virtual labs, and nternships in the areas of IoT, Industry 4.0, CNC, Electric Machines, and so on.	Dr. J. Krishnaiah	(1) Module co-ordinators are identified. (2) Workshops are being scheduled.

INDIAN INSTITUTE OF INFORMATION TECHNOLOGY DESIGN AND MANUFACTURING KURNOOL

Jagannathagattu, Kurnool, Andhra Pradesh, India- 518 008