

DEPARTMENT OF MECHANICAL
ENGINEERING

PLACEMENT BROCHURE

2019-20



INDIAN INSTITUTE OF TECHNOLOGY
TIRUPATI



ABOUT THE INSTITUTE

The Indian Institute of Technology at Tirupati, along with the other five 3rd generation IITs, was announced by the Government of India in 2014. In August 2015, the Institute rolled out the red carpet for its first batch of undergraduates in four core branches of engineering. The Institute has witnessed immense growth in terms of faculty recruitment, the start of new academic programmes, research initiatives and infrastructure development. MS (by research) and PhD programmes in the four engineering streams – Civil and Environmental Engineering, Computer Science and Engineering, Electrical Engineering and Mechanical Engineering, Mathematics, Sciences and Humanities were launched in July 2017. M.Tech programmes in three branches of engineering commenced in August 2018. Within a short period of time, IIT Tirupati has been able to build world-class infrastructure and acquire the latest equipment for carrying out advanced research. IIT Tirupati Transit Campus project has been awarded the GRIHA Council Award for exemplary demonstration of Sustainable Building Material/Technologies and it is the First Prize winner of HUDCO Design Awards 2018 under the category of Green Buildings.

Alongside academics, social service is also being given due importance, encouraging students to develop applications to better lives. The institute foresees a further accelerated growth with the enthusiasm and the involvement exhibited by the students, the faculty and the management.

Indian Institute of Technology Tirupati, Renigunta Road, Tirupati–517506, A.P.

<http://cdc.iittp.ac.in>



Prof. K.N. Satyanarayana

The establishment of Indian Institute of Technology Tirupati (IITT) was announced in 2014 by the Government of India along with five other new IITs at Palakkad, Jammu, Bhilai, Goa, and Dharwad (announced in 2015). IIT Tirupati launched its academic programme with the support of its mentor Institute, IIT Madras, on August 5, 2015 from a temporary campus situated on Tirupati-Renigunta Road,

MESSAGE FROM THE DIRECTOR

Tirupati. In the fourth year of its operations, IIT Tirupati has started partly functioning from its 530 acres Permanent Campus located in Merlapaka Village on Yerpedu-Venkatagiri Highway. The construction of the permanent campus is underway and the first phase of the construction is expected to be complete by 2020 that will cater to 1250 students and 120 faculty members. The complete campus to cater to 2,500 students, 250 faculty members and 275 staff members is planned to be built by 2024.

Currently, the Institute offers admissions to B. Tech programme against 203 seats in the branches of Chemical Engineering, Civil Engineering, Computer Science and Engineering, Electrical Engineering, and Mechanical Engineering, and M. Tech in Civil Engineering, Computer Science & Engineering, Electrical Engineering, and Mechanical Engineering. With the completion of the third round of faculty recruitment, the faculty strength of the Institute will reach around 90. Along with young and dynamic faculty, who have joined after completing their doctoral programs and postdoctoral training from top Universities/Institutes across the world, IIT Tirupati has several senior faculty from other established IITs. Being young and energetic, the faculty members have established their latest world-class research programs at



IIT Tirupati. This has given the students an opportunity to get involved in these research initiatives. The Institute has signed MoUs with various academic laboratories and institutions of international repute in India and abroad for the collaborative research and exchange of faculty and students. The students are fully availing these research opportunities outside IIT Tirupati. As part of their curriculum, the graduating batch students completed their summer internship between May and July 2019 in top class companies, academic and research institutions. The students actively participated in summer internship drive that ensured them 100% internship opportunity. This internship experience has provided them with an opportunity to connect the classroom knowledge with its real-world applications.

The Institute provides an environment that fosters curiosity and creativity within and beyond the classroom. With strong emphasis on theory and fundamentals, the

students have participated in various technical events around the country like Smart India Hackathon and Inter IIT Tech meet. Along with academics, we encourage our students to participate in extracurricular activities as well. The students actively participate in numerous clubs such as astronomy, music, social outreach, etc. Students have taken up excellent initiatives to set up the sports and cultural events on the campus that have helped the students to hone collective responsibility skills and leadership qualities.

Being a new Institute, IIT Tirupati is nimble and aggressively pursuing opportunities to collaborate with leading Indian & multi-national companies, public sector organizations, financial institutions and others. We highly value our partnership with the Industry and remain committed to making your recruiting experience with IIT Tirupati productive and positive. I cordially invite you to IIT Tirupati for the on-campus placement process.

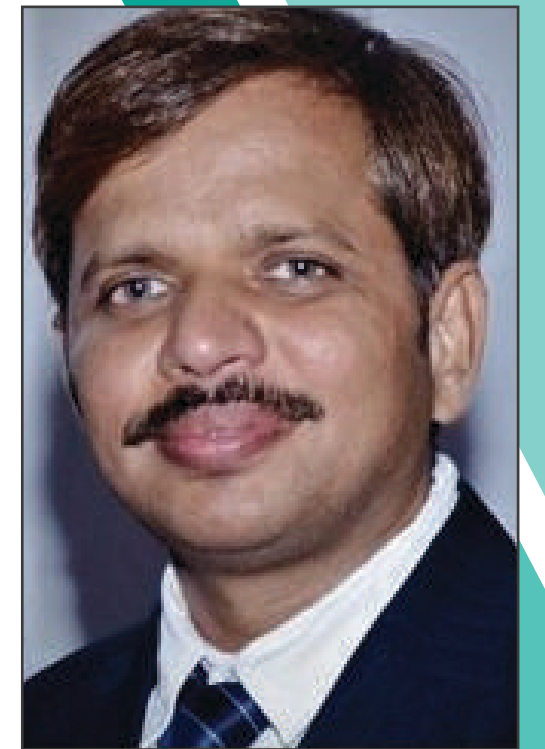


ABOUT THE DEPARTMENT

The department of Mechanical engineering is one of the first four departments introduced at IIT Tirupati. The courses have been structured to ensure students strong foundation in the fundamentals of Mechanical Engineering alongside with concerted lab work, projects and high-quality research on burgeoning subjects.

The department electives offered ensure students are introduced to thriving fields of Mechanical Engineering as well as have a chance to explore conventional subjects in-depth. The faculty members of the department work for the quality education of the students alongside contributing for their respective research areas which include Composite Materials, Computational Metrology, Contact Mechanics, Liquid Atomization, Hydrogen Storage, Thermal Energy Storage, Adsorption Heating and Cooling Systems.

MESSAGE FROM HEAD OF THE DEPARTMENT



Dr. E. Anil Kumar

The Department of Mechanical Engineering at IIT Tirupati is dedicated to provide high quality education. We have started our journey in the year 2015. We have a strong undergraduate program in Mechanical Engineering and masters (M. Tech) in Design and Manufacturing specialisation. We are also offering MS by research and PhD programs. We are in the process of developing state of art academic and research laboratories. The faculty of the Department are with excellent academic credentials and very active in research. Multi-disciplinary approach, global collaborations and industrial problem solving are integral part of our curriculum. We have active collaborations with R&D institutions and foreign universities.

WHY RECRUIT IIT TIRUPATI?

promoting an excellent
atmosphere to

think
create
study
research

IIT Tirupati aims to focus on the holistic development of the students by designing a curriculum which emphasizes knowledge, personality development and life-skills.

- Established in 2015 as a third generation IIT, the Institute is invested specifically in promoting an excellent atmosphere to think, create, study and do research. At IIT Tirupati, teaching and research go hand in hand reinforcing each other.
- The 2020 graduating batch of 113 students have officially registered 100% summer internships with students being offered diverse roles across various domains.
- Furthermore, students have also been awarded various fellowship programs such as Texas A&M research internship and Rowan University Internship.
- Last year, out of 91 students registered for placement 70 are placed in reputed companies with an average package of 9.18 LPA.
- IIT Tirupati has signed MoUs with a number of public and private organizations, which include CSIR labs, CMTI-Bangalore, SBI, CPWD, Nagaoka University of Technology, Texas A&M Engineering Equipment station, Toshiba Software India, Analog Devices India (ADI) Private Limited, etc., to ensure that the students get an opportunity to work in the leading labs and industries in the nation and the world.



B.TECH PROGRAMME

Courses Offered*

- Materials and Design
- Kinematics and Dynamics of Machinery
- Manufacturing Technology
- Engineering Mechanics
- Strength of Materials
- Turbomachines
- Internal Combustion Engines
- Design of Machine Elements
- Instrumentation and Control Engineering
- Refrigeration and Air Conditioning

Elective Courses

- Computational Fluid Dynamics
- Finite Element Analysis

- Mechanical Vibrations
- Design for Manufacturing and Assembly
- Advanced Manufacturing Processes
- Advanced solid Mechanics

Laboratory Courses

- Applied Mechanics Lab
- Engineering Drawing & Machine Drawing
- Manufacturing Lab
- Hydraulics and Pneumatics Lab
- Heat Transfer Lab
- Metrology Lab

B.Tech Project

- Duration : 1 Year

* (This is not the exclusive list of courses offered)

M.TECH PROGRAMME

Courses Offered*

- Mechanical Vibrations
- Advanced Mechanics of solids
- Additive Manufacturing
- Product Design and Development
- Advanced Manufacturing Process
- Design for Manufacturing and Assembly
- Finite Element Methods in Engineering Mechanics

Elective Courses

- Fracture and Fatigue
- Advanced Engineering Dynamics
- Composite Materials
- CAD/CAM
- Numerical Modelling of Manufacturing Processes
- Non-linear Dynamics
- Continuum Mechanics
- Robotics and Manipulators
- Joining Technologies

Laboratory Course

- Advanced Mechanical Engineering Lab

M.Tech Project

- Duration : 1 Year



LABS AND FACILITIES

The institute has set up laboratories with advanced equipments to aid the students in learning and research. An applied mechanics lab which supports the learning of Fluid Dynamics and Solid mechanics, a heat transfer lab which supports the learning of Heat Transfer, Hydraulics and Pneumatics lab, Workshop and Metrology lab have been set up in the institute. As the students “learn-by-doing”, they map their theoretical knowledge to practical world easily and develop confidence to make their own projects independently.

AREAS OF RESEARCH

- Advanced Manufacturing
- Design and Robotics
- Sustainable Energy and Tech.
- Food processing

CO-CURRICULAR AND EXTRA CURRICULAR ACTIVITIES

Robotics Club

The Robotics club of IIT Tirupati promotes friendly learning of many difficult tasks and topics, and encourages young minds to develop different kinds of robots and, in the process, gain inter-disciplinary knowledge. The club believes in promoting technology and innovation in the college. This is a student run club that conducts various competitions through the academic year. Alongside competitions, the club ensures conduction of workshops to help introduce newer students to the construction and design of robots to get them to be more involved and help encourage their interest.

Technical Festivals

The students have avidly participated in contests held at various technical festivals across the country like Shaastra, TechFest, and Technex along with Inter IIT Tech Meet. Students in large numbers participate in competitions conducted in Tirutsava, our annual techno-cultural festival. The competitions encompass various fields like coding, robotics, computer vision, quizzing, software development etc.

Literary, Quizzing, Sports and Music clubs

Students have taken a keen interest in various cultural and sports activities. The Literary club is among the most active clubs at the Institute. It helps develop an interest towards humanities and sciences and encourages participants to work on bettering their communication skills and bringing a clarity of ideas. The music club conducts various competitions and events throughout the year, helping the students to hone their skills in music.





Achievements

IIT Tirupati participated in the 7th Inter IIT Tech Meet 2018 held at IIT Bombay and secured 8th position out of the 23 participating IIT's in Overall General Championship.

Some of the key highlights of the events were,

1. BETiC medical innovation challenge - Gold medal
2. PlutoX Hackathon-Gold medal (Only IIT in this event with Gold)
3. Campus Sustainability challenge - Bronze medal

The students also outperformed in the SMART INDIA HACKATHON and secured First prize of ₹1 Lakh for the problem statement "App Based Solution for Digitization of Valuation of Mobile Assets", followed by teams NightHawks, OnebyZero and InnovationHunters all securing second place in their respective problem statements.

IIT Tirupati as an active member of Google DSC (Developer Student Club) organised 6 workshops this year which mainly focussed on App development and eventually ended the year with a Summer Project on the same.



TOP RECRUITERS FOR PLACEMENTS 2018-19



TOP RECRUITERS FOR SUMMER INTERNSHIPS 2019



ABOUT FACULTY



Dr. Anil Kumar Emadabathuni

Associate Professor

PhD : IIT Madras

Areas of Interest : Hydrogen Storage, Thermal energy storage



Dr. Degala Venkata Kiran

Assistant Professor

PhD : IIT Bombay

Areas of Interest : Welding Technology



Dr. N.N. Kishore

Professor

PhD : IIT Kanpur

Areas of Interest : Composite Materials



Dr. Madan Mohan

Assistant Professor

PhD : IISc Bangalore

Areas of Interest : Liquid Atomization, Combustion



Sriram Sundar

Assistant Professor

PhD : The Ohio State University, Columbus, Ohio, U.S.A .

Areas of Interest : Vibrations, Contact Mechanics



Dr. N. Venkaiah

Associate Professor

PhD : IIT Madras

Areas of Interest : Computational Metrology, Optimization Techniques



Dr. P. Venkatraman

Assistant Professor

PhD : Nan yang Technical University

Areas of Interest : Hydraulic Fracturing, Multiscale Modelling



Dr. Balaji Subramanian

Assistant Professor

PhD : Swiss Federal Institute of Technology(ETH) Zurich, Switzerland

Areas of Interest : Wind Energy, Fluid Mechanics, Aerodynamics and Signal-Conditioning Circuits

ABOUT FACULTY



Dr. Mamilla Ravi Sankar

Associate Professor

PhD : Indian Institute of Technology Kanpur, India

Areas of Interest : Advanced Materials and Manufacturing, Ultra Precision Machining



Dr. Girish Kumar Rajan

Assistant Professor

PhD : Pennsylvania State University, PA, USA

Areas of Interest : Fluid Mechanics and Applied Mathematics



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