Department of Mechanical Engineering
About The Department

The Department of Mechanical Engineering at BITS-Pilani – Hyderabad Campus is one of the premier departments in the institute that provides a unique educational and research environment. Its various Bachelor’s, Master’s and Doctoral Programs namely B.E Mechanical Engineering, B.E Manufacturing Engineering, M.E. Thermal Engineering, M.E Design Engineering and Ph.D. (Mechanical Engineering) are designed with an aim to keep pace with the rapidly evolving mechanical industry that demands unwavering passion and urge to innovate. The department is one of the largest departments on campus and caters to the requirements of pre-requisite subjects like Thermodynamics, Mechanics of Solids, Engineering Graphics and Central Workshop. The broad spectrum of courses is taught by a group of highly experienced faculty members active in research work in the respective areas. The syllabus-rigorous in design and content- is in keeping with the latest developments in the industry.

The department has been funded by UGC-DRS-CSIR and DST and is in a continuous process of strengthening its University-Industry ties. Keeping this in mind, the department has focused on industry-defined problems for thesis work. Numerous collaborations and MoUs signed with various organizations like FMC, Bharath Dynamics Limited, etc. are testament to this commitment.

Message from Head of the Department

“Mechanical Engineering Department of BITS Pilani, Hyderabad Campus offers broad based and up to date curriculum, with an optimum balance of theoretical and practical aspects of Mechanical Engineering. Students are imparted coaching in core areas of Mechanical Engineering, allowed to work on study oriented, Lab oriented and Design projects with total relevance to the course content they are exposed to in order to make them ready for the industry and also enable them to be entrepreneurs. Department feels pride that an ample number of our graduating students are placed well.”
Programs Offered by the Department:

1. B.E (Hons.) Mechanical Engineering
2. B.E (Hons.) Manufacturing Engineering
3. M.E Thermal Engineering
4. M.E Design Engineering
5. Ph.D. Mechanical Engineering

B.E (Hons.) Mechanical Engineering
Advanced Mechanics of Solids
Kinematics and Dynamics of Machinery
Prime Movers and Fluid Machines
Computer Aided Design
Fluid Mechanics
Heat Transfer
Production Techniques I
Production Techniques II
Material Science and Engineering
Mechanics of Solids
Applied Thermodynamics
Machine Design and Drawing
IC Engines
Mechanical Vibrations
Engineering Optimization

B.E (Hons.) Manufacturing Engineering
Material Science and Engineering
Fluid Mechanics
Mechanics of Solids
Applied Thermodynamics
Machine Design and Drawing
Kinematics and Dynamics of Machinery
Manufacturing Processes
Manufacturing Management
Mechanics and Automation
Tool and Fixture Design
Metal Forming and Machining
Design of Machine Tools
Casting and Welding
Computer Aided Design
Engineering Optimization

M.E Thermal Engineering
Conduction and Radiation Heat Transfer
Refrigeration and Air Conditioning
Fluid Dynamics
Convection Heat and Mass Transfer
Energy System Engineering
Thermal Equipment Design
Computational Fluid Dynamics
Computational Heat Transfer
Turbo Machinery

M.E Design Engineering
Finite Element Methods
Fracture mechanics
Dynamics and vibrations
Material testing and technology
Theory of elasticity and plasticity
Product design
Computer aided analysis and design
Tribology
Mechanisms and robotics

Elective Courses
Machine tool engineering
Mechatronics
Automobile engineering
Lean manufacturing
Precision engineering
Renewable energy
Gas Dynamics
Power Plant Engineering
Computer Aided manufacturing
Mechanical Vibrations and Acoustics
Product Design and Development
MEMS
NDT techniques
Solar thermal process engineering
Labs and Facilities in the Department

The department has various labs aimed at providing practical knowledge to the students in different areas of mechanical engineering. State of the art machinery, numerous experimental set ups and workstations installed with advanced simulation software are some of the highlights here. The labs are established with best interest of the students in mind. The lab courses are introduced at appropriate stages of the engineering programmes enabling the thought process needed for the making of a good mechanical engineering graduate. The students gain practical knowledge which shall serve as a background for the complete understanding of their core subjects and somehow prepare them in a way so that they can face the industry world once they graduate. The labs are handled by the respective faculty in charge of the course and managed by a particular faculty as regards for periodic maintenance and improving the infrastructure from time to time. Highly qualified technicians and teaching assistants of the department help the faculty in charge for conducting the lab and student evaluation.

In addition to the basic academic labs, a few research labs and centres are also established in the department. The research labs houses advanced equipment for carrying out projects by the PhD scholars and higher degree students of the department under the supervision of the respective principal investigator from the department faculty. Research labs are also provided with licensed servers of sophisticated simulation software using which funded research projects as well as student course projects are carried out. A Centre of Excellence for Product Design and Realization is a recent addition to the list.

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<td>Central Workshop</td>
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<td>Mechanical Engineering Lab</td>
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<td>IC Engines</td>
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<td>Prime movers and fluid machinery</td>
<td>CAM Lab</td>
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Current Areas of Research

- Rapid Prototyping and Product Design
- Sheet Metal Forming and Metal working
- Tribology
- Electro-static lubrication and solid lubrication
- Computational fluid dynamics and heat transfer
- Mechanisms and Robotics
- Mechatronics and MEMS
- Friction-Stir Welding and advanced machining

Sponsored Projects

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Current Projects

- UGC Major Research Project on “Rapid Asymmetric sheet metal Forming”
- BARC Young scientist Research Grant on “High Temperature Tensile Testing on Special Sheet steel materials”
- ABG Research Seed Grant on “Environmentally sustainable micro-lubrication in machining”.

Student Activities:

Mechanical Engineering Association (MEA)

MEA was established in 2009 mainly aimed at increasing student and faculty activities within the department. It focuses on interaction of students with various academic experts and industrial personnel. Majority of its activities, encourage students to actively involve themselves in organizing events. Since its existence, a number of guest lecture from renowned people in different fields of mechanical engineering have been conducted. Industrial visits are also arranged by the students in charge of the MEA, for the students so as to gain practical exposure.
Society of Automotive Engineers (SAE) India Chapter – BITS, PILANI
– Hyderabad Campus

About hundred students (comprising all the first degree students) are registered members of SAE INDIA. Every year, different intramural competitions like technical quiz, modelling in Pro engineer etc are conducted. AUTO-FACTORY workshop has been conducted in the past. Our department students have been representing the college in different prestigious competitions of SAE India like SAE-BAJA, EFFI-Cycle, Autobot etc. A guest lecture was recently organized by inviting Professor P N Rao (University of Iowa).

Work Integrated Learning

Apart from the regular academic and research activities, the Department faculty also make significant contribution towards WILP related courses pertaining to various programs by delivering online lectures and mentoring the students in their dissertation work. The department also conducts M.E (Mechanical Engg.) course for the benefit of working professionals.

Contact US:

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