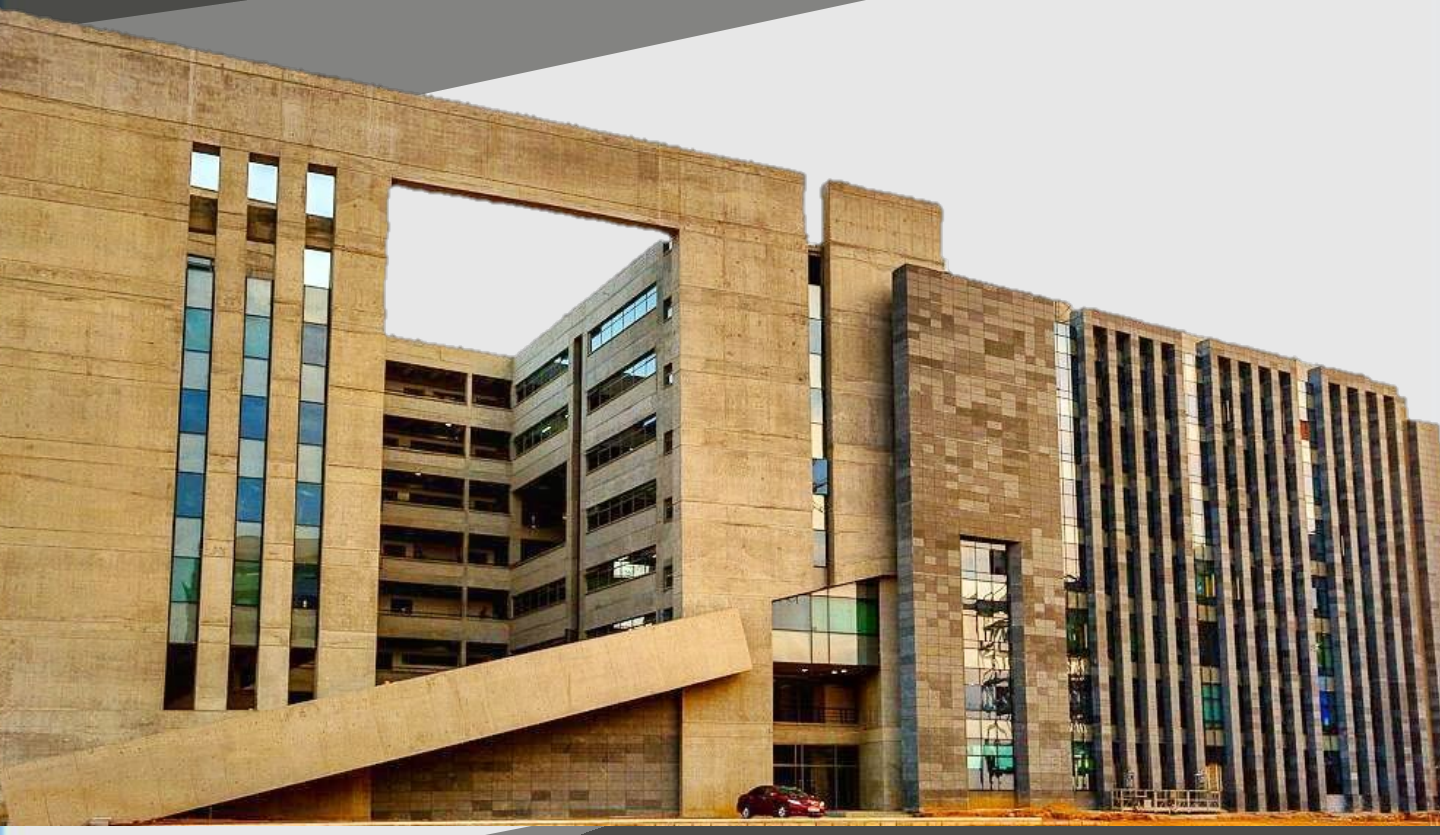
INDIAN INSTITUTE OF TECHNOLOGY - HYDERABAD

DEPARTMENT OF MECHANICAL & AEROSPACE ENGINEERING

PLACEMENT BROCHURE (2022-23)



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HOD'S MESSAGE

PROF. RAMJI MANOHARAN

Head of the Department,
Mechanical & Aerospace Engineering,
Indian Institute of Technology Hyderabad

The Department of Mechanical and Aerospace Engineering (MAE) is one of its kind in India as we are the only IIT that has a single department for Aerospace and Mechanical Engineering doing research and teaching. We were one of the three pioneering departments at IIT Hyderabad and had a modest beginning with a batch of 30 undergraduate students in 2008. The first permanent faculty member was hired in 2009 and since then, MAE has grown to be one of the largest at IITH with 32 faculty members, 200 undergraduate students, 55 post graduate students and about 150 PhD students.

We realized early on the need to cater to and benefit from Hyderabad's unique position as a hub for defence research in India with a number of DRDO laboratories like DMRL, DRDL, RCI etc. located here. It was for this reason that Aerospace Engineering was added to the Department which initially started with a focus on core Mechanical Engineering. Today, our faculty members collaborate extensively with DRDO scientists. The MAE department through its research projects and funding has a strong footprint. The DRDO cell at IIT Hyderabad which was set up to facilitate such collaboration. As on date, MAE faculty members are Principal Investigators in nearly half the projects funded under this cell. Accounting for nearly 40% of the total funding for FY 2020-21. A new Centre of Excellence in Additive Manufacturing, a first-of-its-kind research excellence centre in India, is being established at IITH, led by MAE faculty member Prof. S. Surya Kumar. Apart from DRDO, our faculty members also take projects regularly from leading MNC's. The computational and experimental facilities in the department are the state of art, and they help us conduct cutting-edge research and industrial project consulting.

In terms of teaching, the MAE department currently offers a B.Tech degree in Mechanical Engineering, a minor program in Aerospace Engineering.There are also honours and double major options for students who are more academically inclined. The curriculum is composed of 30% project-work, laboratory, and hands-on components, and we are confident that our undergraduates will learn their theoretical fundamentals as well as how to apply their theoretical understanding to applications.

HOD'S MESSAGE

For those UG students with an interest in research, the honors program gives them an opportunity to work on cutting-edge research projects under the supervision of a faculty member for a period of one year. The department also has collaborations with Purdue university and an Internship program where a select few students get the opportunity to spend the summer of their junior year at Purdue pursuing a research project.

As part of the post-graduate degree, we offers 4 different M.Tech programs in Mechanics and Design (MAD) , Thermo-Fluid Engineering (TFE) and Integrated Design and Manufacturing (IDM) and Aerospace Engineering (AE). From the last academic year, we started offering M.Tech in Computational Mechanics on online mode for the industry people. In addition, we also are the coordinating department for the newly started interdisciplinary M.Tech in Electric Vehicle Technology. Our faculty members also teach courses to a wide range of interdisciplinary M.Tech programs such as Climate Change, Integrated Sensors and Systems and Additive Manufacturing. There is also a strong collaboration with Japanese Universities where a M.Tech student can spend some time carrying out research at a Japanese university. An example is the collaboration with Hokkaido University (HU) where they get to spend 4 to 12 weeks at HU as part of a student exchange program. The department is also part of Joint Doctoral programs with Swinburne and Deakin University of Australia. The doctoral program in the department gives the student the flexibility to choose any advisor according to their background and interest. Our faculty members are involved in cutting edge research in a wide variety of fields and we strongly urge you to explore the individual faculty webpages to know more about them.

The department also encourages a strong entrepreneurial culture in both its faculty members and the students. One of the notable start-up companies incubated in MAE include PureENERGY, an Electric vehicle manufacturing company co-founded by Dr. Nishant Dongari. During the current pandemic, the department also had contributed its bit to the technology landscape and understanding through innovative development and commercialization of certain products.

If you are thinking of being a part of the vibrant ecosystem and culture in the department, we welcome you to explore your interests. We are sure that you will find something that will be interesting and get connected with us.

Wishing you all the best for this placement season.

Regards

Prof. M. Ramji

Programs offered

❖ Undergraduate Program

B.Tech in Mechanical Engineering

❖ Graduate Program

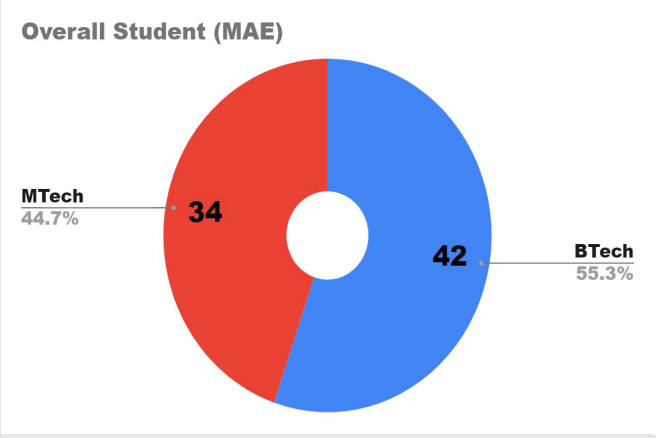
M.Tech (2-Year / 3-Year / Self-Sponsored / Dual Degree/ Industry Sponsored) in:

- Aerospace Engineering (AE)
- Integrated Design & Manufacturing (IDM)
- Mechanics & Design (MAD)
- Thermo-fluids Engineering (TFE)

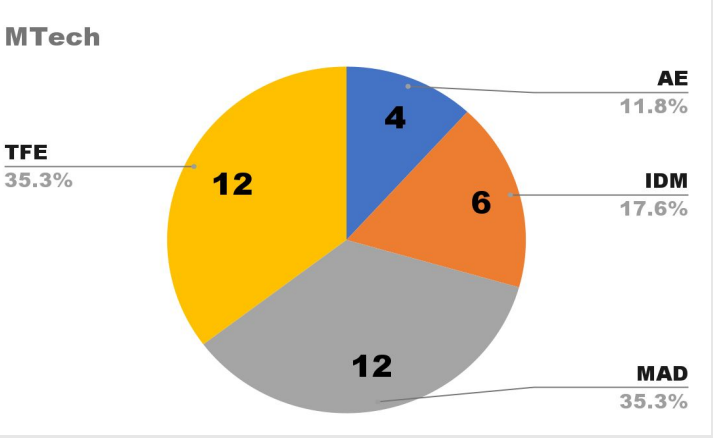
❖ Research Program

Ph.D in Mechanical Engineering
Ph.D in Aerospace Engineering

Graduating Batch Profile



B.Tech and M.Tech

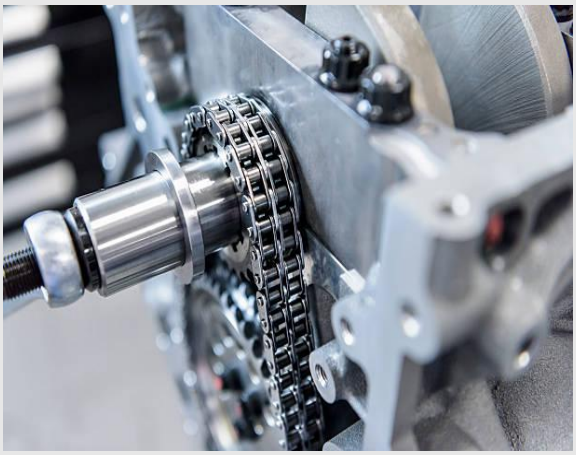


M.Tech specializations

BACHELOR OF TECHNOLOGY

About Us

The B.Tech program in IIT Hyderabad follows the Fractal Academic system with Minors and Majors in other disciplines.The Fractal Program at IITH atomizes the courses into breadth and depth, thereby enabling interdisciplinary learning with a wide choice of basic courses and advanced electives. Students can also graduate with an extra program/branch with the help of Major and Minor programs across different streams. Students are also encouraged to take part in Liberal and Creative arts through the curriculum. Fractal academic system provides the students with more free time which can be utilized in many ways like sports, SciTech clubs, projects etc. Through all these aspects, a person can achieve holistic education.



Courses Offered

Core Courses

- Solid Mechanics
- Fluid Mechanics
- Dynamics and Vibrations
- Thermodynamics
- Heat and Mass Transfer
- Power and Refrigeration system
- IC Engines
- Turbomachines
- Operational Research
- Industrial Engineering
- Production Planning and Control
- Manufacturing Science
- Modelling and Simulation
- Machine drawing and Solid Modelling
- Design of Machine & Transmission elements

Electives

- Finite Element Method
- Computational Fluid Dynamics
- Robotics
- Vehicle Dynamics
- Sustainable Energy Technology
- Compressible flow and its computation
- Composites

Other Courses

- Electric Circuits
- Applied Digital Logic Design
- Introduction to programming

Lab Courses

Students get to experience the practical knowledge of their courses as they work in the labs as part of their curriculum where they get to learn operations such as Welding, Lathe machining, CNC Machining, Additive Manufacturing, Drilling and the experiments include FEM analysis, Thermodynamics, Analysis of fluid environment, Strength & Hardness of materials, Stress- strain relations etc.

- Additive & Subtractive Manufacturing Lab
- Physics Lab
- Solid Mechanics Lab
- Fluid Mechanics Lab
- FEM Lab
- CFD lab
- Manufacturing Science Lab
- IC Engines Lab
- Dynamics Lab
- Heat Transfer Lab

Major / Minor / Honors

Honors	6	Entrepreneurship Minor	5
CSE Major	1	Electrical Minor	5
Artificial Intelligence Minor	1	Economics Minor	2

Projects

Students with their keen interest in learning and developing their skills, take up some projects. Here are some of them:

- Analysis of a QZS isolator under prof.L.fredette and prof.R.singh of Ohio state university.
- Nonlinear analysis of hybrid formulation, damage for composites under Prof R Gangadharan.
- Deep Learning project on Brain Tumor Multi-Classification using scale space feature extraction technique.
- Project based on Agri Hub related to farmers in Scala.
- Seizure Detection through Granger Causality and Causal Network.
- PCM based battery thermal management system under Adiabatic Technologies.
- Project based on Gantt chart to create an angular library.

Internships

Some of the companies in which the students gained work experience during the summer are:

- Mathworks
- KLA Tencor
- Larsen & Toubro Infotech
- Wave labs
- Learn and empower - i-TIC IITH
- ZF India
- Scala
- ABB Global Industries
- TCS Research & Innovation
- OYO
- UST Global
- I-PAC
- JIO
- Lotusdew Wealth and Investment Advisors
- DG Takano
- Denso India

M.TECH MECHANICS AND DESIGN

Courses Offered

Solid Mechanics Courses

- Advanced Mechanics of Solids
- Analysis & Design of Composite Structures
- Experimental Solid Mechanics
- Fracture Mechanics

Dynamics Courses

- Dynamics and Vibration
- Vehicle Dynamics and Modelling
- Engineering Noise Control

Computational Courses

- Finite Element Method
- Advanced Finite Element Method

Robotics & Multi-Body Dynamics Courses

- Planar Multibody Dynamics
- Robot Manipulator : Kinematics & Dynamics
- Introduction to Machine Vision

Mathematical & Programming Courses

- Mathematical Methods for Engineers
- Advanced Topics in Mathematical Tools (nonlinear dynamics & optimization techniques)
- Machine Learning and its Applications.

Lab Courses

- Dynamics and Vibrations lab
- Data Acquisition and Control systems
- Computational Mathematics Lab

Lab facilities

- Micro Mechanics Lab
- CAE Lab
- Dynamics Lab
- Micro-Electro-Mechanical Systems Lab
- Vehicle Dynamics Lab
- Optics Lab
- Solid Mechanics Lab
- Composites fabrication Lab
- Material Characterisation Lab
- Impact Mechanics Lab
- Computational Solid Mechanics Lab
- Robotics and Intelligent Systems Lab
- Acoustics Lab

Ongoing & Completed Projects

SOLID MECHANICS & COMPOSITE MATERIALS

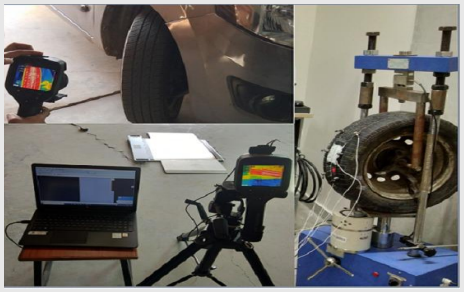
- Numerical studies on non-linear behaviour of CFRP laminates under shear loading
- Non linear FEM modelling of soft tissues under growth
- Deep learning to predict path-dependent plasticity.
- Fracture and fatigue analysis of 3D printed product.
- Non local damage modelling by the scaled boundary FEM.

DYNAMICS

- Multi-cable pendulum system for measuring inertia properties of a rigid body (DRDO)
- Nonlinear dynamics of a parametrically excited delay differential equation.
- Non linear dynamic modelling of vocal cord.
- Tire Modeling and Simulation using CARSIM
- Damper modeling using Modelica
- Design and Analysis of Inertial MEMS Sensors

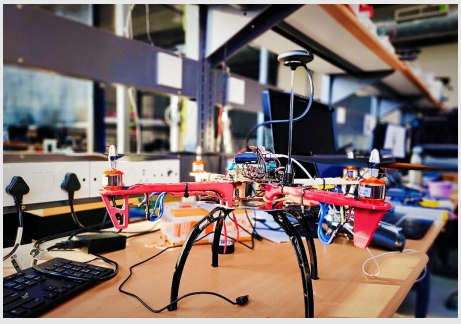
ACOUSTICS & VIBRATIONS

- Experimental study of high speed deep groove ball bearing acoustic characteristics.(National Engineering Industries Ltd)
- Acoustic performance of locomotive HVAC duct system (Alstom Metropolis)
- Low Noise,Energy Efficient, High Rpm Bearing for Electric Vehicle
- Prediction of Acoustic Environment in Fairing Cavity..



ROBOTICS & UAV's

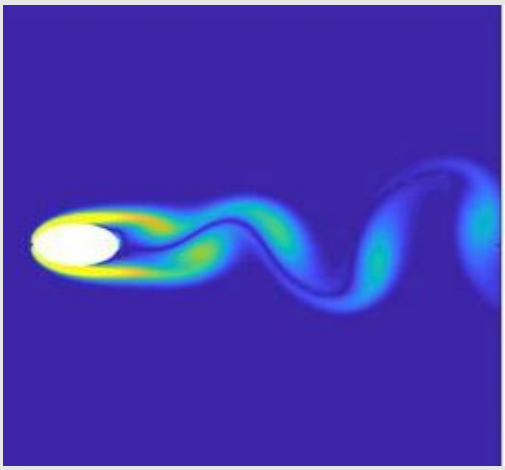
- Design and Simulation of reconfigurable prismatic quadruped robot.
- Development and Multibody Dynamics analysis of complex 3D Printed Robotic Arm Structure
- Biped dynamic walker modeling and control for underactuated gait cycle.



M.TECH THERMO-FLUIDS ENGINEERING

About us

The master's program in thermo-fluid engineering trains students in basic and applied areas of fluid mechanics, thermodynamics, heat transfer and combustion. The knowledge gained through the well structured theoretical and laboratory courses, coupled with a year long thesis work enables the students to be industry ready professionals. Various alumni from this specialization have been at the forefront of various organizations in the country and elsewhere.



Courses Offered

Fundamental Courses

- Incompressible fluid flow
- Advanced heat transfer

Mathematics & Programming Courses

- Mathematical methods for engineers
- Advanced topics in mathematical tools
- Introduction to parallel and scientific computing
- Machine Learning and Its Applications

Laboratory Courses

- Computational mathematics lab
- Computational fluid dynamics Lab
- Thermo-fluid engineering lab

Electives

- Computational fluid dynamics
- IC engines combustion and pollution
- Interfacial phenomenon
- Advanced Computational fluid dynamics
- Turbulence
- Compressible flow
- Introduction to combustion & reactor models
- Chemical kinetics and modeling in reactor flows
- Finite Element Method
- Hypersonic and High Temperature Aerodynamics

Lab facilities

IIT Hyderabad is equipped with the state, of the art lab facilities. The institute encourages its scholars to pursue cutting, edge research , under the guidance of eminent faculty members. The scholars undertake theoretical, computational and experimental research in the fundamental as well as applied areas. The laboratories, at IITH include:

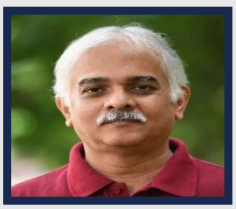
- Fluid Mechanics Lab
- Fluid Physics Lab
- Heat Transfer Lab
- Liquid Spray Lab
- CFD simulations Lab
- Combustion Lab
- IC Engines Lab

Fluid Mechanics Colloquium Series

The Fluid Mechanics group in the Department of Mechanical & Aerospace Engineering at IIT Hyderabad has started a new Fluid Mechanics Colloquium series from June 2021. In this bi-weekly series, all areas of fluid mechanics covering the whole range of length and time scales will be covered. An internationally renowned set of speakers were identified for the first round of lectures. The list of confirmed speakers are listed below.

Prof. Howard Stone
Princeton University

Prof. Rama Govindarajan
ICTS



Prof. Joseph Mathew
IISc Bangalore

Prof. Suman Chakraborty
IIT Kharagpur

Prof. Amit Agarwal
IIT Bombay

Ongoing & Completed Projects

- **Fundamental Fluid Mechanics & Heat Transfer**
  - Interaction of bubble with flat interface
  - Thermal Transpiration of Gas flows
  - Experimental investigation of cavitation & bubble dynamics.
  - Numerical analysis of Vortex Ring formation and starting jet problems
  - Artificial microswimmers in soft fluid micro confinements: Soft Matter and micro-swimmer
- **CFD**
  - Development of finite volume code for laminar incompressible flows
  - Development of body fitted grid generator for external flow over bluff bodies
  - Parallelization of non-linear partial differential equations system solver using MPI.
  - Development of finite difference code for viscous flow over ellipsoid using body fitted grid.
  - CFD modelling of combustion in Hypersonic Scramjet Engine
- **Turbulence**
  - Development and investigation of hybrid RANS/LES turbulence models for strongly separated fluid flows
  - Numerical study of turbulent flow and heat transfer characteristics of nanofluids in circular pipes
  - Study of Airfoil Stall using RANS & Hybrid RANS LES Methodologies
  - LES modeling of wind turbines and farms over complex heterogeneous terrain
- **Compressible fluid flow**
  - Examination of blast characteristics in a shock tube
  - Study of supersonic impinging jet flows
  - Numerical investigation on Aero-thermal characteristic of the blunt body with spike in supersonic flows
- **Combustion**
  - Numerical analysis of liquid fuel combustion of n-heptane.
  - Determination of Laminar Burning Velocity of a flat/conical flames
  - DST-IIT Hyderabad integrated clean energy material acceleration platform on Bioenergy and Hydrogen

M.TECH INTEGRATED DESIGN & MANUFACTURING

About us

The growing complexity of the challenges in Industry and Research these days demand an interdisciplinary approach. The industry today prefers a workforce versatile in both the analysis and practical implementation, in component as well as system design, in theoretical as well as computational approaches.

To address the needs, the department has blended the concepts of design and thermo-fluids into the manufacturing domain, aiming to produce diversified and effective manufacturing engineers.

Courses Offered

Fundamental Courses

- Finite Element Analysis
- Elasticity & Plasticity
- CAD\CAM
- Scaling Laws & Multiscale Manufacturing
- Fluid Mechanics & Heat Transfer

Mathematics & Programming Courses

- Mathematical methods for engineers
- Computational Fluid Dynamics Tools

Electives

- Additive Manufacturing
- Metal Forming
- Advance Material Joining Process
- Design for Manufacturability and Assembly
- Material Removal Process
- Industry 4.0

Laboratory Courses

- Finite Element Analysis Lab
- Computational fluid dynamics Lab
- Integrated Design & Manufacturing lab

Lab facilities

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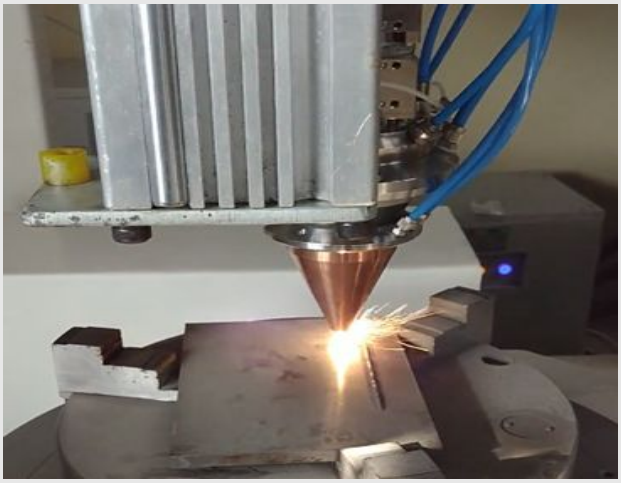
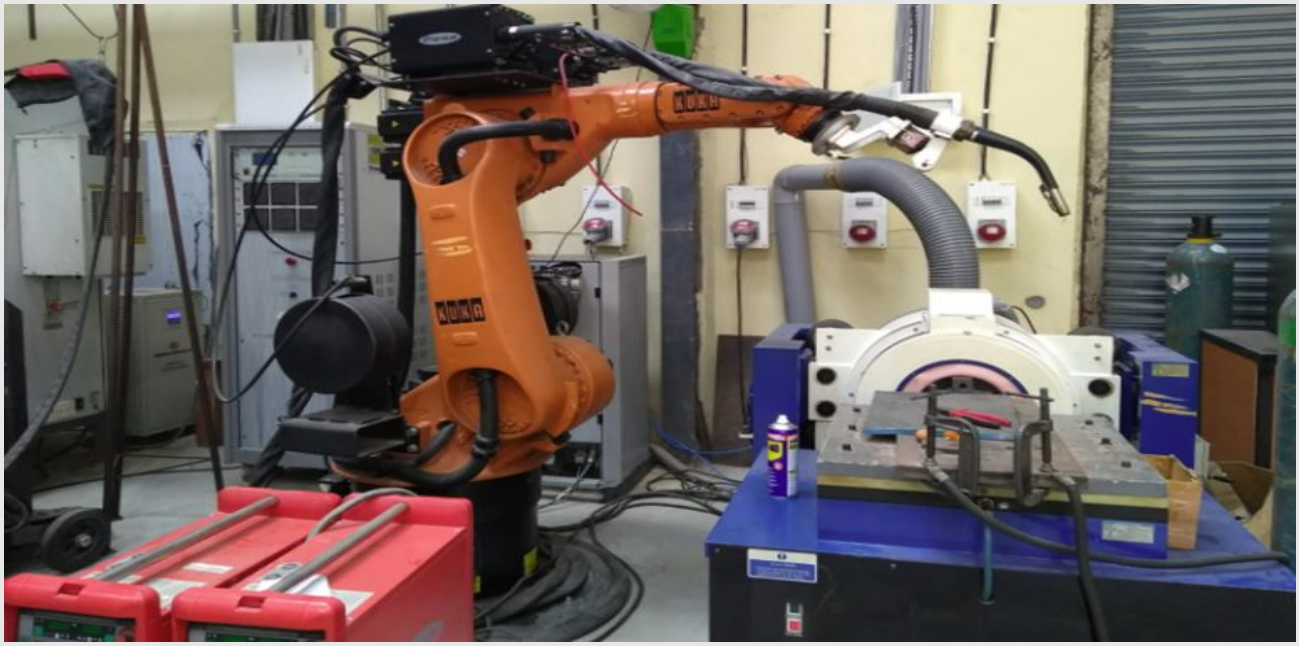
- Machining and Metrology Lab
- Manufacturing Science Lab
- Robotics & Intelligent system Lab
- Additive and Subtractive Manufacturing Lab
- CAE Lab





Ongoing & Completed Projects

Additive Manufacturing.

- Large Area Additive Manufacturing (LAAM): Design and Development of Powder based Directed Energy Deposition System for Direct Fabrication of Rocket Components, DRDO.
- Machine Learning Approach for Decision Making in Metal Additive Manufacturing Components, Boeing (Bangalore).
- 3D Printing : Design & Development of 3D Printer Accompanied by Feasibility Studies.
- Additive Manufacturing of Large Size Metal Components with Wire & Powder Hybrid Direct Energy Deposition (WP-DED) Process.
- Thermal Management Approaches for Distortion Control in Metal Additive Manufacturing Component, Boeing (Bangalore).
- Development of an Integrated Metal Additive and Formative Manufacturing System to Enhance Product Complexity and Properties, AMT-DST.
- Manufacture of Functionally Gradient Objects through Weld-Deposition, DST under Fast Track scheme for Young Scientist.
- Laser cladding of functionally graded ceramic coatings for high temperature and wear applications: Assessment of mechanical properties and their correlation with molten pool thermal history and its improvement through laser shock peening, DRDO.
- Post-Processing of Direct Energy Deposition Components: Need Identification and Process Selection, CRG-DST.
- Evaluation of Laser weld joint of E16NCD13 for Aero Engine Gear Application, GTRE - DRDO.

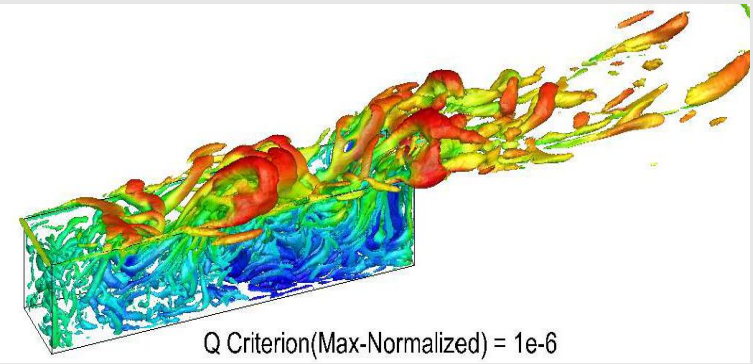
Bulk Sheet Metal Forming

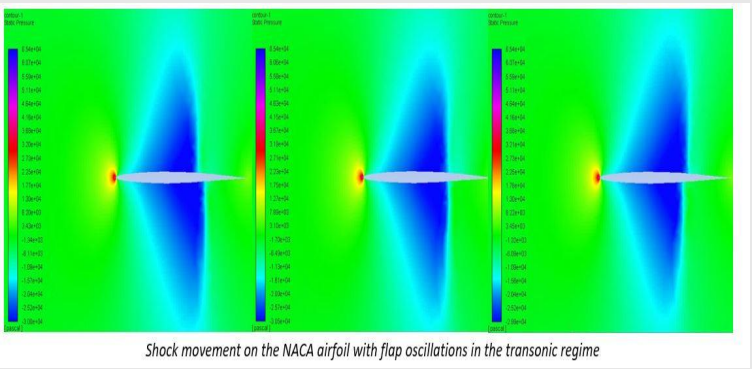
- Research and development work on Double Sided Incremental Forming (Boeing Global).
- Development of Electric Pulse Aided Forming Processes, UAY Project (Government of India Initiative)
- Intelligent Circular Manufacturing research and educational collaboration with India and Japan (INMAN, supported by Norwegian Research Council).
- Forming of Thermoplastic Composites using Reconfigurable Tooling (Boeing Global).
- Development and Validation of Predictive Models for Forming of Large Components using DSIF and Studies on Difficult to Form Material, SERB DST (Government of India)
- Circular Manufacturing research and educational collaboration with India and Japan (CIRMAN, supported by Norwegian Research Council).

M.TECH AEROSPACE ENGINEERING

About Us

The master's program in Aerospace Engineering trains skilled engineers for their careers in the Aerospace industry and related fields. At present, the program specialization is offered in Aerospace Structures.




Shock movement on the NACA airfoil with flap oscillations in the transonic regime

Courses Offered

Core Courses

- Introduction to Flight
- Aerospace Structural Mechanics
- Flight Vehicle Aerodynamics
- Analysis and Design of Composites Structures
- Finite Element Method

Mathematics & Programming Courses

- Mathematical Methods for engineers
- Advanced Topics in Mathematical Tools
- Machine Learning and Its Application

Electives

- Experimental Solid Mechanics
- Aeroelasticity
- Advance Finite Element Method
- Fracture Mechanics
- Computational Fluid Dynamics
- Introduction to Combustion & Reactor Models

Lab Facilities

IIT Hyderabad is equipped with the state of art lab facilities. The institute encourages its scholars to pursue cutting edge research , under the guidance of eminent professors. The laboratories at IITH include:

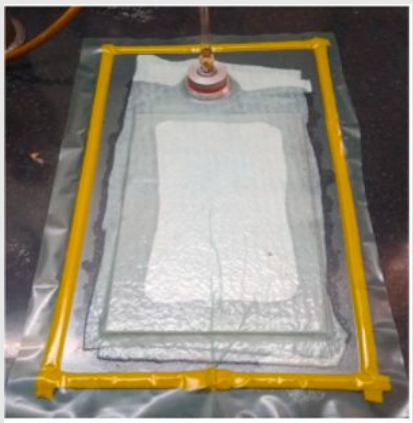
- CAE Lab
- Computational Aerodynamics Lab
- Composite Fabrication Lab

Schlieren Image of diamond shockwaves at Mach 2

Ongoing & Completed Projects

ACOUSTICS

- Prediction of bifurcation in thermoacoustic coupled oscillatory system(Ongoing)
- Vibration analysis of Rayleigh beam undergoing coupled Stretching-Bending, Bending-Torsional motion(Ongoing)
- High Speed Impact Mechanics for warhead applications(Ongoing)
- Development of Analytical Model for Multi Layered Fragment Separation (Armament Research and Development Establishment(ARDE), Pune), (2018-19)
- Study of cavity acoustics of weapons bay and a passive noise reduction approach (Aeronautical Development Agency(ADA)), (2020-2021)



Fabrication of CFRP laminate with embedded delamination Vacuum bagging process

STRUCTURAL MECHANICS

- 3-D Stress analysis using hybrid brick element (Ongoing)
- Design and fabrication of autonomous passenger drone(2019-present)(MeitY)
- Radar Cross Section of Aerial vehicles(Ongoing)
- Experimental and Numerical investigation of low velocity impact on CFRP laminates (Ongoing)
- Study of supersonics gas jet ejecting under water,(Defence Research and Development Organisation(DRDO)), (2019-present)

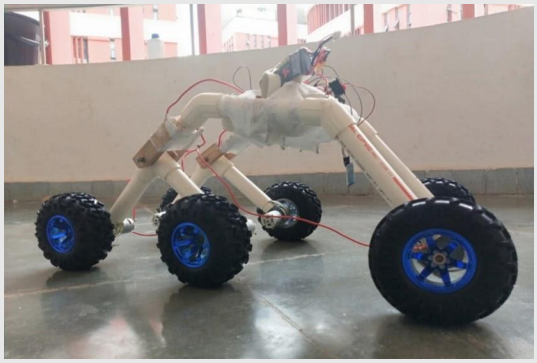
STUDENT ACTIVITIES

Torque Club

Torque, a club started by automobile aficionados, is aimed to nourish the passion of automobile enthusiasts. We aim to motivate the students, to coordinate and participate in co-curricular activities along with their regular academics which helps them to be more competitive in the era of industrialization and gain a hand-on experience. We do projects in all fields of mechanical engineering which includes automobile, pneumatics, aerospace, industrial, etc.

Aero Club

This club nurtures all the aviation enthusiasts sharing a unique passion for flying and an innate desire to push the bounds of airspace. We organized one session on "basics of aerodynamics and RC flight" and one workshop on "make your RC plane"



RESEARCH AT OUR DEPARTMENT

The department is gifted with a right blend of young and experienced faculty members who carry out cutting edge research in fundamental as well as applied areas of research in the field of mechanical and aerospace engineering. The projects done at various labs at IIT Hyderabad are well funded by various governmental and industrial organizations

Dr. Anurup Datta
Process monitoring of manufacturing processes,
laser based micro and nano- manufacturing and applications of subwavelength laser spot using nanoscale optical antenna

Dr. Ashok Kumar Pandey
Vibration, MEMS, Vehicle Dynamics.

Dr. Badarinath Karri
Experimental fluid mechanics,
high-speed imaging,
bubble dynamics and cavitation.

Dr. Chandrika Prakash Vyasarayani
Structural Dynamics, MEMS, Delay Differential Equations, Parameter Identification, and Optimization

Dr. Gangadharan Raju
Non-destructive testing and evaluation,
Structural Health Monitoring,
Variable angle tow composites

Dr. Gopinath Muvvala
Additive Manufacturing, Laser Material Processing,
Underwater laser material processing,
Solid state welding

Dr. Harish Nagaraj Dixit
Interfacial fluid mechanics,
Vortex dynamics,
Hydrodynamic stability theory,
Geophysical flows

Dr. Lakshmana Dora Chandrala
Transient supersonic flows Blast waves Multi-phase flows Development of optical diagnostic tools
Marine aerosols

Dr. Mahesh M S
Aeroelasticity,
Acoustic-Structure Interaction,
Computational Mechanics

Dr. Niranjan S Ghaisas
Wind Energy, Turbulent Flow Simulations, Computational Mechanics

Dr. Nishanth Dongari
Microfluidics, Rarefied Gas Dynamics, Compressible Gas Flows, Thin Film Coatings, Molecular Dynamics

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Dr. Nizamuddin Khaderi Syed
Computational solid mechanics, fluid structure interaction.

Dr. Prabhat Kumar
Topology Optimization,Structural Optimization,Complaint Mechanics,Inverse problem,Computational contact mechanics

Dr. Pankaj Kolhe
Alternative fuels, combustion, and optical diagnostics in dynamic flows.

Dr. Prakhar Gupta
Multiscale and Multiphysics Modelling, Computational material science,Nonlinear elasticity, Biomechanics,Computational Mechanics

Dr. Prasanth Kumar R
Multibody Dynamics, Legged Robotics, Control Theory, and Mechatronics.

Dr. Raja Banerjee
Multiphase Flow, Heat and Mass Transfer, Thermodynamics, CFD

Dr. Ramji Manoharan
Experimental Solid Mechanics, Finite Element Analysis, Fracture Mechanics, Composite Structures, Damage Mechanics

Dr. Ranabir Dey
active soft matter- specifically behaviour of microswimmers, capillarity and wetting, and low Reynolds number hydrodynamics.

Dr. Sachidananda Behera
Turbulence,Turbulence Modelling of Incompressible Flows,Computational fluid dynamics,Study of bluff bodies and jets

Dr. Safvan Palathingal
Nonlinear mechanics of slender structures, Compliant mechanisms, and Optimization

Dr. Sai Sidhardh
Solid mechanics, constitutive models, designing new computational methods, and conducting experiment

Dr. Saravanan B
Fluid Mechanics, Premixed and Stratified Combustion, Oxyfuel Coal Combustion, Thermoacoustic Instabilities, Laser Diagnostics

Dr. Sayak Banerjee
Combustion Kinetics, Kinetic Model Reduction, Bio-fuel Combustion and Emission, Combustion Diagnostics

Dr. Suryakumar S
Additive Manufacturing , Design for Additive Manufacturing; Circular Manufacturing and Industry 4.0..

Dr. V.K. Saraswat
Missile development, Radars, Cyber security research

Dr. Venkata Reddy N
Analysis of Manufacturing Processes at Multi-scales; Development of IPPDS, Manufacturing processes for Mass Customization; CAD/CAM

Dr. Venkatasubbaiah K
CFD and Heat transfer, Stability Analysis of Flows with and without heat transfer, Cooling of Electronic Devices and Aerodynamics.

Dr. Venkatesham B
Engineering Acoustics, Sound Quality, System Design

Dr. Vinayak Eswaran
Computational Fluid Dynamics (CFD) of incompressible and compressible flows, Turbulence modeling

Dr. Vishnu R Unni
Reactive fluid dynamics,particularly focusing on the characterization and control of complex self-organized dynamics of turbulent reactive flows

Dr. Viswanath Chinthapenta
NEMS, MEMS, Fracture Mechanics, Contact mechanics, Bio-Mechanics Structural Health Monitoring

TALKS FROM INDUSTRIAL EXPERTS

Dr. Anurag Rajagopal

- Sr. OptiStruct Developer (finite element solver), Altair Engineering, Irvine, CA.
- Advancements in Rotor Blade Cross - Sectional Analysis Using the Variational Asymptotic Method

Jaikumar Subramanian

- Executive Director / Partner – Go To Market & Market Activation Global Capability Centers Business Unit, IBM India.
- Industry 4.0

Dr. Lokesh Agrawal

- Vice President and Head R&D, National Engineering Industries Ltd (NEI)
- Technology landscape in bearings and key skills to be a core engineering professional

Dr. Suneel TS

- Dr. Suneel TS from Tata Group Innovation Office is leading Innovation for the select Tata group companies and leading open innovation for the Tata group.
- Tata InnoVerse – Do you have solutions for our Wicked problems?

C. Navin Kumar

- Sr. Lead at TCS, Bangalore
- Advanced Driver Assistance Systems

U. Chandrasekhar

- Program Director AddWize Wipro 3D, Bangalore
- Laser powder bed fusion based additive manufacturing of components for industrial and strategic sectors

Juban Thomas

- Currently heading the CEAT's Global Testing Department.
- How new technologies are driving tyre industry research & development

Shreyans S. Khot

- Senior Manager - Additive Manufacturing, Amace Solutions Pvt. Ltd.
- Basics of additive manufacturing and part selection for additive manufacturing

Shengbai Xie

- Senior Research Engineer, Convergent Science Inc., USA
- What to expect as an industrial CFD engineer?

G.V. Sarath Kumar

- Senior Manager Materials Engineering in Ashok Leyland
- Steels used for Automotive industry

Ganesan Subramanian

- Engineering Manager, TCS
- Current Role of CAE in Powertrain development process

Sarath Reddy

- Currently associated with Techno and infra team in Dassault Systemes.
- Problem Solving Approaches in PLM Industry

Shraman N Goswami

- Shraman has been working for Honeywell in the field of Gas Turbine Engine Fan & Compressor and Turbine
- Propelling Urban Air Mobility

Dr. Ravi Annapragada

- Associate Director, Disruptive HVACR Innovation at Carrier Global Corporation
- Refrigerant Free Electrocaloric Air-Conditioner

TALKS FROM INDUSTRIAL EXPERTS

Mr. Sachin Srivastava

- DevOps Engineer, Jaguar Land Rover
- Digital and Automation Solutions for Industrial Car Problems

Dr. Rajavel Balaguru

- Sr. Mechanical Engineer,Johnson Controls Advanced Development and Engineering Center.
- Key Factors of Fan System Wire-to-Air Efficiency

Dr. Rahul Kumar Verma

- Chief Product Applications Research Group, TATA Steel
- Sheet metal forming research at TATA Steel

Mr. Sunil Kulkarni

- Sr. Technical Manager at Dassault Systemes
- Trends and Challenges in Automotive and Aerospace Industry

Mr.Swapnil Tatwawadi

- R&D Senior Manager at Dassault Systemes
- Design Collaboration in the age of experience

Mr. Swapnil Sapkale

- Deputy Manager in the Design & Engineering Division at Bharat Dynamics Ltd.
- Aerodynamic design of ATGM

Dr. Jagannathan N

- National Aerospace Laboratory, Bangalore
- Aircraft Material and Structural Testing-An overview

Mr.Rahul Mundada

- Imaginarium India Pvt Ltd.
- Overview of Laser and Electron Beam Powder Bed Fusion Metal Technologies

Dr. Guruprasad Rao

- Director & Mentor at Imaginarium India Pvt Ltd.
- 3D Printing-a new way of making things

Mr. Tirumala Rao Koka

- Honeywell Technology Solutions,Bangalore
- Soft foreign object damage assessment in aero engines

SOFTWARES

ACEGEN
ANSYS
ANSYS ICEM CFD
AnuPravaha
ARDUINO
ARDUPILOT
AUTODESK AUTOCAD
C++
Cantera
CarSIM
CATIA
COMSOL MULTIPHYSICS
Creo
Dymola
Fortran
Fusion 360
LabVIEW
LS DYNA
Maplesoft
MATLAB
MATLAB SIMULINK
Mechanical Simulation
Minitab
MODELICA
MuJoCo
OpenCV
OpenFOAM
PLC
POINTWISE
PyroSim
Python
ROS
SIEMENS LMS Virtual.Lab
SIEMENS NX
Simcenter Nastran
Simspace
Simufact
Simulia ABAQUS
SOLID EDGE
SOLIDWORKS
SUS code
Tecplot
Wolfram Mathematica

PAST RECRUITERS

3DPLM
AM/NS India
Accenture
Affluence
Airtel
Altair
Arup
Bajaj Auto
Baker Hughes
Bank Of America
BeeHyv
Bosch
Byjus
Caterpillar
Defence Research and Development Organization
Deloitte
Eaton
Flipkart
Fractal
GE Group
Goldman Sachs
HCL Technologies
HSBC
Hero Motocorp
Hindustan Petroleum Corporation Limited
Honeywell
IBM
Indian Oil Corporation Limited
Indian Space Research Organization
Infotech
Innominds
Jaguar Land Rover India Limited
KPIT
Larsen & Toubro Limited
Leoforce
Mahindra & Mahindra
Maruti Suzuki
Mercedes Benz
Mobis
Oracle
Paninian
Pepsico
Rakuten
Siemens Gamesa
Spiral Japan
Svaya
Takano
Tata Advanced Systems Limited
Tata Consultancy Services
Thermofisher
Volvo
Whirlpool
Zenoti

WHY MAE, IIT HYDERABAD?

- **Well-trained students**: The students (admitted via JEE, GATE exams) are trained rigorously through the fractal academics system
- **Student activities:** Various technical clubs such as Torque, Robotics club, Aero club are run by the students, which stimulate them to conceive out-of-the-box solutions to real world problems
- **Research output**: The department boasts of its eminent faculty members, who are highly cited researchers and most sought after in their respective fields.
- **Among the best in India**: IITH has consistently ranked in the top 10 of the NIRF rankings and is currently ranked 8th best engineering institute all over India
- **Startup ecosystem**: Successful incubation of start-up 'PUR Energy' co-founded by Dr. Nishanth Dongari (Professor of department of MAE).

CONTACT INFORMATION

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