

Online M. Tech. in Computational Mechanics

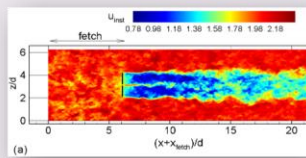
Department of Mechanical and Aerospace Engineering
Indian Institute of Technology, Hyderabad

Highlights

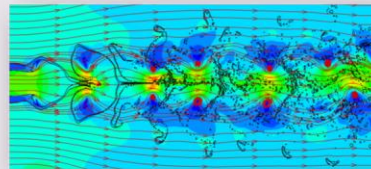
- **Industry-oriented learning.** Courses tailored for industry-working professionals.
- **Immense learning.** Hands-on learning with several state-of-the-art theory and lab courses to benefit their professional career.
- **Breadth.** Cover a broad range of topics on computational methods ranging from FEM, CFD, Optimization, Additive Manufacturing.
- **Immersive learning.** Live interactive sessions coupled with self-paced learning.
- **No GATE score required.** Selection based on an interview where the academic and professional background will be assessed.
- **Earn master's degree without leaving your job.** Learn while you earn, with the flexibility to complete the program between 2-4 years.
- **Learn from our expert faculty** from the Department of Mechanical and Aerospace Engineering, IIT Hyderabad.
- **Networking.** Opportunity to create a meaningful network with diverse professionals.

Program

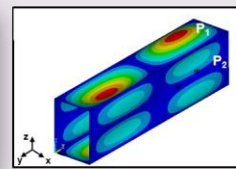
The online M. Tech. in Computational Mechanics is a unique program offered by the Department of Mechanical and Aerospace Engineering, started in August 2021, that will train students to solve multidisciplinary problems related to mechanical systems using computational techniques.



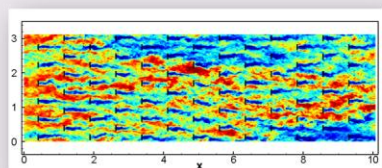
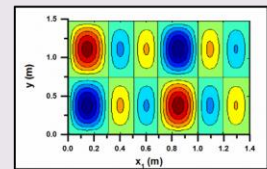
Large-eddy simulation of a multi-rotor wind turbine



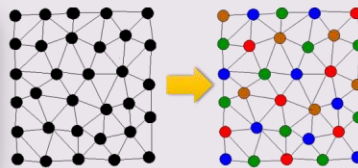
Computation of sprays and atomization



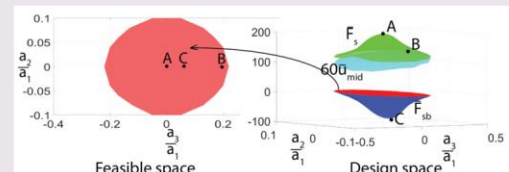
Duct and Equivalent Plate Mode Shapes



Turbine wakes simulation in large wind farms



CFD Solver Parallelization on CPU/GPU architectures



Design space and optimal profiles of bistable arches

Computational tools are ubiquitous in mechanical, aerospace and allied industries and form an integral part of the engineering design process today. Training in advanced computational techniques will greatly broaden the spectrum of opportunities available to graduates.



The program combines elements of numerical methods and scientific computing with fundamental principles in solid mechanics, fluid mechanics, design and vibrations. Courses covering fundamentals of numerical analysis will be complemented with hands-on training using wide-ranging examples drawn from various domains of engineering. The program will benefit industry professionals looking to build expertise in the area looking to address technological challenges in industries in the automotive, oil and natural gas, renewable energy, defense and manufacturing sectors.

Why choose this program?

“I am extremely grateful for the opportunity provided by IIT Hyderabad's Computational Mechanics program. It has allowed me to enhance my technical skills significantly. As a working professional, the program's flexibility has been instrumental in effectively managing both my career and studies. The faculty has been exceptionally supportive, readily available to assist me with my academic endeavors at any time.”

Mr. Akshay Rajan, Scientist at a leading Govt. space agency. Graduated in 2023.

Past and present students from leading government and private industries, R&D organizations. Some of these are:

1. Defence Research and Development Organization (DRDO)
2. MRF
3. Bharat Petroleum Corporation Limited (BPCL)
4. Collins Aerospace
5. Oil and Natural Gas Corporation (ONGC)
6. Safran Engineering Services
7. National thermal Power Corporation (NTPC)
8. Cyient
9. National Highways Authority India (NHAI)
10. Bosch
11. Telangana Power Generation Corporation (TSGENCO)
12. Honda R&D

Eligibility

- B. E./B. Tech. with first class (60%) in Mechanical, Aerospace, Civil or Chemical engineering or other equivalent degrees
- Should be currently working in industry with a minimum of 2 years of industry experience after B. Tech.

The selection will be based on the candidates' background along with performance in a written test and/or interview, which will be conducted online between April-May 2024.

Duration and Structure

Option 1: M. Tech. (CM) with thesis - up to 4 years.

- Total 48 Credits (Course Credits: 24 + Thesis Credits: 24)
- Courses can be done over up to three years.
- Thesis will be done in the final year (maximum 4th year) after course work.

Option 2: Executive M. Tech. (CM) without thesis - up to 3 years.

- Total 24 Course Credits.
- Courses can be done over up to three years.

Format

- Online live and self-paced sessions will be conducted.
- Classes will be separate from regular courses.
- Classes will be held in the evening and at weekends based on faculty availability.
- Examinations will be conducted online.
- Students will do their project in their own industry. The project can be started only after coursework worth 24 credits is completed. During the project, each candidate will have a guide from IITH and may have another from his/her industry.
- Opportunity to meet experts and experience IITH campus during campus visits.

Important Dates

Applications solicited starting 18 March 2024

Last date to apply 20 April 2024

Selection process May-June 2024

Classes start from 29 July 2024

Please check <https://www.iith.ac.in/academics/post-graduate/> for applying (starting 18 March 2024)

More Details

Curriculum, Courses, Fees: <https://mae.iith.ac.in/MTechCompMech.html>

Contact Us:

Course coordinator: Dr. Sai Sidhardh (ocm@mae.iith.ac.in)

Head, Mechanical and Aerospace Engineering,
IIT Hyderabad: Prof. Ashok Kumar Pandey (head@mae.iith.ac.in)

About IIT Hyderabad

Indian Institute of Technology Hyderabad (IITH) established by the Government of India in 2008. Within 15 years it is one of the top-ranked institutions in the country and has received global recognition.

- Ranked 3 in Innovation, 8 in Engineering, and 14 in Overall Category by NIRF 2023
- Built on world-class academic and research culture.
- Offer various undergraduate, post-graduate, integrated and research programs in engineering, science, management, and design.