

ATRIA INSTITUTE OF TECHNOLOGY
Department of Mechanical Engineering

THE COMPUTATIONAL
MECHANICS
LABORATORY



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Harish.H

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THE COMPUTATIONAL MECHANICS LABORATORY is the newest addition in the center of excellence labs at the Department of Mechanical Engineering. This lab came into existence in 2019 and is currently supervised by **Harish.H, Assistant Prof.,** in the Department of Mechanical Engineering.

The Computational Mechanics Lab at Atria Institute of Technology was established in 2019 in collaboration with Dassault System Solutions. As a part of academia-industry interface, students are involved in projects across a gamut of domains such as aerospace, automotive, electronics, biomechanics and heavy equipment industries. The software package consists of the following:

- ABAQUS Suite - which provides complete numerical solutions for sophisticated engineering problems.
- FE Safe Suite – provides safety features for critical components with increased fatigue life, enabling users to include complex loading patterns and multi-axial fatigue and other safety capabilities.
- Tosca Suite - provides powerful optimization solutions for lightweight, stiff and durable parts to maximize performance and discover new design possibilities.

The following analyses are taught as part of the curriculum:

- Linear Static Analysis



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- Nonlinear Analysis
- Geometric Non-Linearity
- Material Non-Linearity
- Interaction (Contact) Non-Linearity
- Explicit Dynamic Analysis
- Thermal Analysis
- Fatigue Analysis
- Coupled Field Analysis
- Crash Analysis
- CFD Analysis

A student undergoing this training stands a good chance of securing employment in the “CAE-Driven Design Industries”.