

COMPUTATION FOR DESIGN AND OPTIMIZATION

Computation for Design and Optimization (CDO) is an interdisciplinary master's degree program that provides students with a strong foundation in computational methods for the study, design, and operation of complex engineered and scientific systems. The CDO program is administered by the Center for Computational Engineering (<http://catalog.mit.edu/mit/research/center-computational-engineering>).

The CDO SM program educates students in the formulation, analysis, implementation, and application of computational approaches in science and engineering. The curriculum's common core serves all science and engineering disciplines, while an elective component focuses on particular applications. The program emphasizes:

- Breadth through introductory courses in numerical analysis and simulation, and optimization
- Depth in optimization methods and numerical methods for partial differential equations
- Multidisciplinary aspects of computation
- Hands-on experience through projects, assignments, and a master's thesis

Participating faculty come from the Schools of Engineering, Science, and Management, including the Departments of Aeronautics and Astronautics, Biological Engineering, Chemical Engineering, Civil and Environmental Engineering, Electrical Engineering and Computer Science, Mathematics, Mechanical Engineering, and Nuclear Science and Engineering.

The research interests of CDO faculty cover a great variety of computationally intensive areas in engineering, science, and mathematics. Recent research has included such far-ranging topics as micromachined devices, guidance/control systems, imaging systems, distribution networks, telecommunications systems, and transportation systems. CDO faculty research encompasses applications in areas such as aircraft design, materials design, manufacturing operations scheduling, and applied optimization in operations and industrial engineering.

Inquiries

For more information about the CDO program, contact Kate Nelson (cdo_info@mit.edu), Room 35-434, 617-253-3725; or visit the website (<http://computationalengineering.mit.edu/education>).