

# Master of Science in Engineering Mechanics

## INTRODUCTION

A degree in Engineering Mechanics will prepare students to solve “unusual and non-routine” problems in engineering. Students will learn analytical, computational, and experimental methods in mechanics of solids, structures, and materials and fluid mechanics. The objectives of the program are to enable the student to attain a deeper understanding of engineering mechanics fundamentals, knowledge of recent developments, and the ability as a master's degree student to participate in research and as a doctoral degree student to conduct individual research. The goals are accomplished through coursework, seminars, and active research programs.

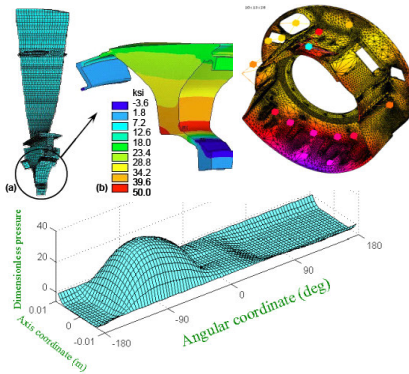
## PROGRAM DESCRIPTION

The program is interdisciplinary in nature with contributions from the Chemical, Civil and Environmental, and Mechanical Engineering graduate programs. It also prepares students for continued study in the Doctor of Engineering program. Two areas of specialization are available:

1. Structural Mechanics
2. Mechanics and Materials

The Structural Mechanics track considers analytical and computational approaches to mechanics and materials. It emphasizes numerical formulations and computer simulations of basic

structural and material phenomena from a stress/strain viewpoint. The Mechanics and Materials track concentrates on the material science aspects of materials, including the laboratory testing and development and investigation of new engineered materials. All students must complete a common set of core courses specified.



## RESEARCH

The Engineering Mechanics program involves faculty members from other engineering departments. Students may become active participants in the following areas of faculty research:

- Research in nonlinear finite-element analysis.
- Deformation processing of materials.
- Non-Destructive Evaluation (NDE) of material properties.
- Structural reliability and probabilistic mechanics,

inelastic deformation, analysis of powdered metals, metal matrix composites, and ceramic matrix composites.

- Construction materials, including high-performance concrete, concrete paving materials and tests, performance of materials, and composites.
- Advanced structural dynamics of structures.

## DEGREE REQUIREMENTS

In addition to meeting other University requirements, a master's candidate must complete the core courses for the selected specialization. A minimum of twenty-four credits of course work is required for students following the thesis option. These students must complete a minimum of six credits of thesis (a maximum of six credits count toward the degree). Students following the non-thesis option must complete a minimum of thirty credit hours for the degree.

### For admission information contact:

Cleveland State University  
Graduate Admissions Office  
Cleveland, OH 44115  
(216) 687-5599  
[www.csuohio.edu/gradcollege/](http://www.csuohio.edu/gradcollege/)

### For program information, contact:

Department of Civil and Environmental Engineering  
Stillwell Hall, Room 110  
2121 Euclid Ave.  
Cleveland, OH 44115  
(216) 687-2400  
<http://graduatestudies.csuohio.edu/catalog/?View=entry&EntryID=257>  
[www.csuohio.edu/civileng/](http://www.csuohio.edu/civileng/)