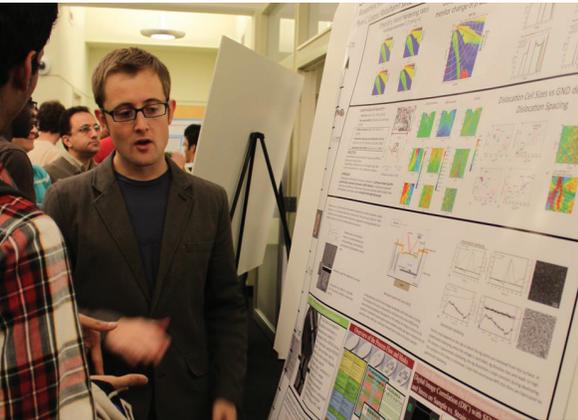




# COLUMBIA | ENGINEERING

The Fu Foundation School of Engineering and Applied Science



## MASTER OF SCIENCE IN MECHANICAL ENGINEERING

### APPLICATION DEADLINE FEBRUARY 15

The M.S. program in Mechanical Engineering emphasizes fundamentals and their innovative applications in addressing current challenges facing us. It offers research opportunities in addition to rigorous classroom learning. The Standard Track can be tailored to your individual interests while pre-defined concentrations are available under our Special Tracks.



“Educational excellence is the central focus of all activities within the Department. Our faculty and staff take great pride in developing a curriculum that provokes students to think deeply, broadly and independently to prepare them to be leaders in engineering and other professions. Our dual emphasis on fundamental concepts and experience through design and research equips our graduates to address and solve the most complex technological and societal challenges. We welcome your application.”

Prof. Jeffrey Kysar  
ME Department Chair



“The Masters Program in Mechanical Engineering at Columbia University enriched my knowledge of core subjects and allowed me to learn about new cutting-edge topics. Additionally, being at Columbia provided me with a fantastic opportunity explore New York City with my classmates.” Demi Ajayi, MS’ 11, Ph.D. Candidate

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**Standard Track**— In consultation with his/her advisor, an M.S. student takes a sequence of courses which forms a concentration specifically tailored to his/her interests and objectives. Typical choices of concentration in the Standard Track include such subjects as mechanics of solids and fluids, thermodynamics, heat transfer, manufacturing engineering, robotics, kinematics, dynamics and vibrations, controls, and power generation.

“Our department fosters both a diverse academic and social community through our multidisciplinary faculty and active graduate student population. Faculty and students strive to create a learning atmosphere that encourages a diversity of thoughts and opinions. We believe education is enhanced through this rich environment.”



Professor Kristin Myers

“Graduate students are the core of our research program. Our research touches almost every aspect of our lives – from big questions to practical answers. We explore everything from self-aware robots to next generation nanomaterials, and we focus on research that will have impact both in the short term and in the long term.”



Professor Hod Lipson

**Special Concentrations**— Alternatively, M.S. students may choose a pre-defined concentration:

### Energy Systems

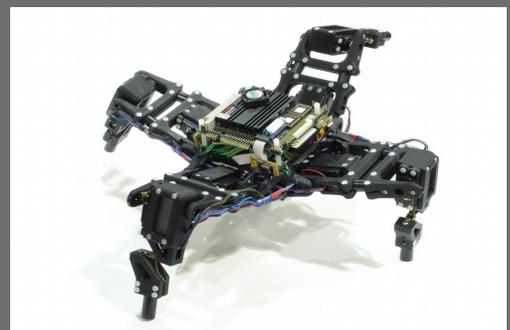
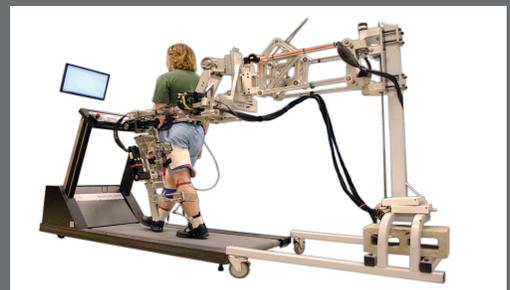
Provides a global understanding of current energy challenges. Advanced thermofluidic knowledge is provided to design and optimize energy systems, with a strong emphasis on renewable energies. Courses related to energy and environmental policy, two strong areas of Columbia as a global university, can be integrated into the course sequence.

### Micro/Nanoscale Engineering

Provides an understanding of engineering challenges and opportunities in micro and nanoscale systems. The curriculum addresses fundamental issues of mechanics, fluid mechanics, optics, heat transfer, and manufacturing at small-size scales. Application areas include MEMS, bio-MEMS, microfluidics, thermal systems, and carbon nanostructures.

### Robotics and Control

The robotics and control concentration focuses on aspects of robotics, mechanisms design, control, optimization, mechatronics, computation, and applications. This concentration emphasizes both fundamental science and emerging applications in human cooperative systems, rehabilitation robotics, evolutionary designs, autonomous systems and others.



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