PRATT SCHOOL OF ENGINEERING • DUKE UNIVERSITY

# Master of Engineering

Duke's Master of Engineering (M.Eng.) program will deepen your understanding of technology and help you develop the business leadership and management expertise you need to succeed in your career.

Visit: http://meng.pratt.duke.edu/

*The Fitzpatrick Center at the Pratt School of Engineering*

# OVERVIEW
## A Specialized Degree Program

Graduates of Duke's Master of Engineering (M.Eng.) program have a valuable competitive edge—a mix of in-depth technical knowledge and a broad understanding of business, leadership, communication, and innovation. And these qualities are what industry wants in future employees. Our graduates are ready to take on industry's biggest challenges in fields such as product design, product development, and engineering design.

Duke's Master of Engineering (M.Eng.) program is designed to give you the advanced knowledge, skills and experience to make your career vision a reality. M.Eng. will deepen your understanding of technology and help develop the business leadership and management expertise you need to succeed in your career. Our training will sharpen your critical thinking and communications skills—making you competitive in today's high tech fields.

In the Master of Engineering program, you will take specialized technical classes with core courses in business fundamentals, leadership and management. A required internship or a project completes the degree. Duke's Pratt School of Engineering offers seven Master of Engineering degrees in various areas of technology concentration—areas where we are leading the field. You can pick the path that suits your particular interests.

### Highlights of M.Eng.:

- Takes just 18 to 24 months to complete the program
- Non-thesis program designed to help you succeed in industry
- Gives you rigorous training with a real-world focus
- Immerses you in courses driven by top researchers
- Puts you at the forefront of your field of choice
- Gives you the business foundation you need

### M.Eng. Courses and Curriculum

Master of Engineering students in all disciplines must complete 30 credits including:

- Core industry preparatory courses (6 credits)
- Departmental or interdisciplinary core courses (15 - 18 credits, varies by department)
- Technical electives in a concentrated area (6 - 9 credits, varies by department)
- Internship, Project, or Equivalent

# M.Eng.
## Core Industry Preparatory Courses

The Core Industry Preparatory Courses demystify business leadership, management, ethics, finance, marketing and communication. The classes explain the important qualities of successful leadership and help you systematically build your skills. You will prepare to engage with teams of people across a broad spectrum of disciplines and jobs—exactly the type of situation you'll find in the working world—allowing you to have an immediate and productive impact.

### MENG 240: Management of High Tech Industries

This course addresses critical qualities of leadership, management skills, and decision making in complex environments. Essential topics include:

- Leadership and communication principles
- Strategic decision making where outcomes depend on high technology
- Management of project-based and team-based organizational structures and the role of the manager in expertise-driven organizations

### MENG 270: Business Fundamentals for Engineers

This course provides an overview of the essentials of intellectual property, marketing, accounting and finance, and business strategies for technology companies. Principles covered include:

- Marketing, methods of distributing products, and connections between marketing and other functions of the business
- Accounting and Finance, including time value of money, financial statements, balance sheets, and cash flow
- Intellectual Property, including patents, copyright, trademarks, and trade secrets
- Technology-based business strategy such as Forces of Strategic Space, Blue Ocean Strategy, and Disruptive Technologies

# Engineering Disciplines

Although student research is not a required part of the M.Eng. curriculum, our research influences the intellectual conversation in the classroom. Duke's Pratt School of Engineering offers seven Master of Engineering degrees with concentrations where we are leaders in the field.

## Choose your M.Eng. degree in one of the following disciplines:

### Master of Engineering in Biomedical Engineering

- Imaging and Biophotonics
- Cardiac and Neuroengineering
- Biomaterials
- Bioengineering and Tissue Engineering
- Biomechanics

### Master of Engineering in Civil Engineering

- Computational Engineering
- Systems Engineering and Optimization
- Geo-Systems

### Master of Engineering in Electrical and Computer Engineering

- Micro-Nano Systems
- Photonics
- Computer Engineering
- Sensing & Waves
- Signal Processing & Communications

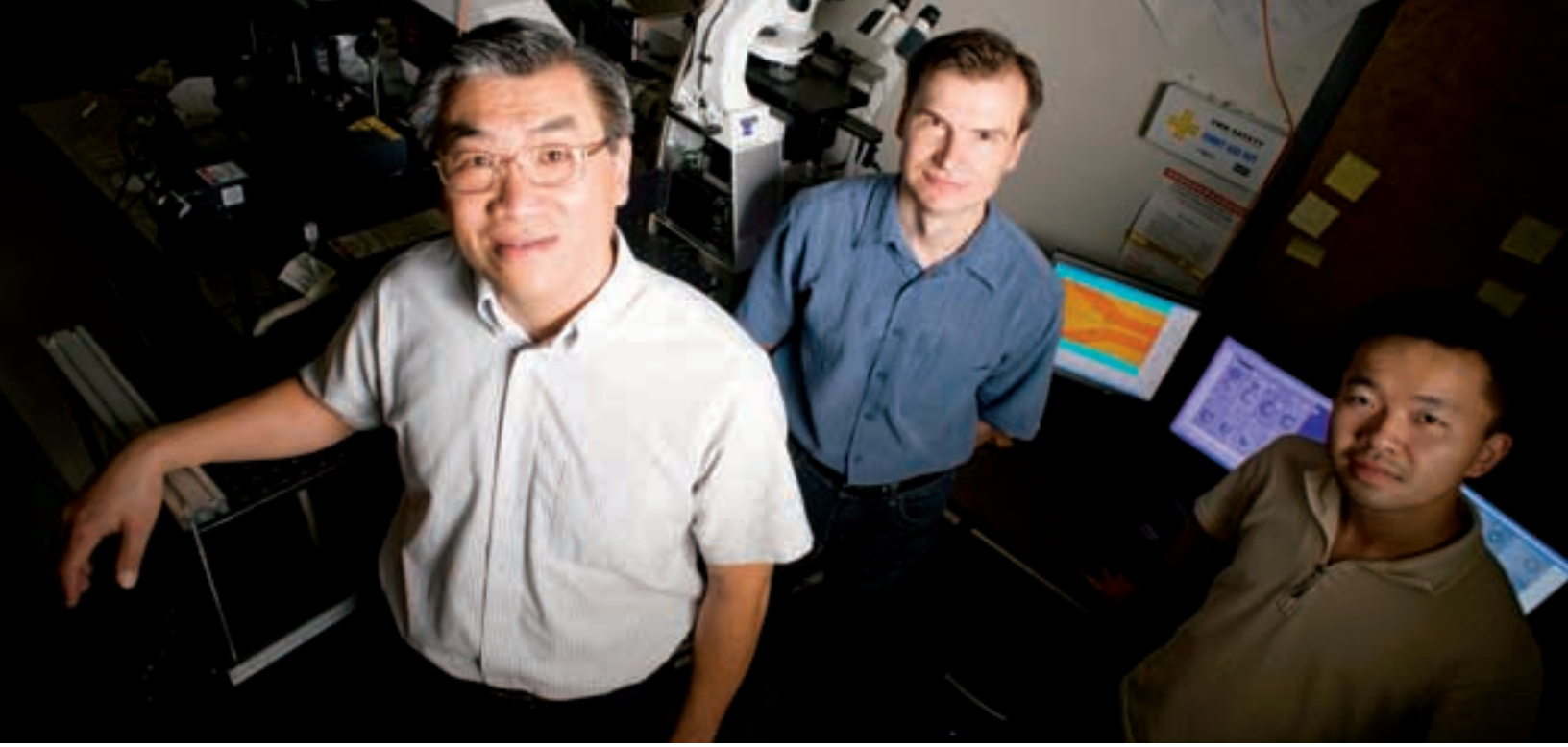
### Master of Engineering in Environmental Engineering

- Environmental Nanotechnology
- Ecohydrology and Environmental Fluid Dynamics
- Environmental Process Engineering
- Environmental Engineering and Public Policy

**Technical Courses and Electives:**

Each engineering discipline has defined a set of requirements for the M.Eng. Program designed to give you in-depth technical knowledge of a particular field. Our programs give you flexibility in course selection within your chosen discipline, and the departmental course requirements vary.

Technical elective options give you more opportunity to specialize in your area of interest, and



### Master of Engineering in Mechanical Engineering

- Mechanics: Biomechanics
- Mechanics: Computational Mechanics
- Mechanics: Dynamics
- Mechanics: Vibrations
- Controls
- Intelligent Systems
- Aerodynamics
- Aeroelasticity
- Thermodynamics
- Fluid Mechanics

### Master of Engineering in Materials Science and Engineering

- Solid Materials
- Soft Materials
- Biomaterials
- Polymeric Materials

### Master of Engineering in Photonics and Optical Sciences

- Biophotonics
- Nano/Micro Systems
- Quantum Optics and Information Photonics
- Photonic Materials
- Advanced Photonic Systems
- Nanophotonics
- Systems Modeling, Theory & Data Treatment
- Novel Spectroscopies

really take advantage of Duke's leading status in several fields. Specializations like these will distinguish you with potential employers. You will work with a faculty advisor to customize a curriculum that suits you. In some cases, an independent study sponsored by a faculty member may satisfy an elective requirement.

# Internship/Project

As a Master of Engineering student, you have the choice of a non-credit internship or a project as part of the curriculum, and you'll take part in a follow-up assessment. This is applied learning at its best, and the self-analysis afterwards will help you better define what you want and need for career development. Individual departments may have additional requirements or exceptions for fulfilling these degree components.

The many options available to fulfill this requirement give you a chance to practice what you're learning, and to ask questions and hone your skills in a supportive environment. Internships may be paid or unpaid, corporate or governmental. Projects may also take the form of applied research positions, provided the learning objectives are met.

**All internships/projects must:**

- Apply engineering principles to solving one or more problems outside the classroom environment
- Define a problem and determine potential solutions
- Cultivate an appreciation of organizational dynamics and work relationships
- Practice in both written and oral professional communication
- Complement material presented in M.Eng. courses
- Include a self assessment upon completion

Once your project or internship is completed, you will prepare a written and/or oral project report. Individual programs/majors may have additional requirements or exceptions to fulfill the internship component of the program.

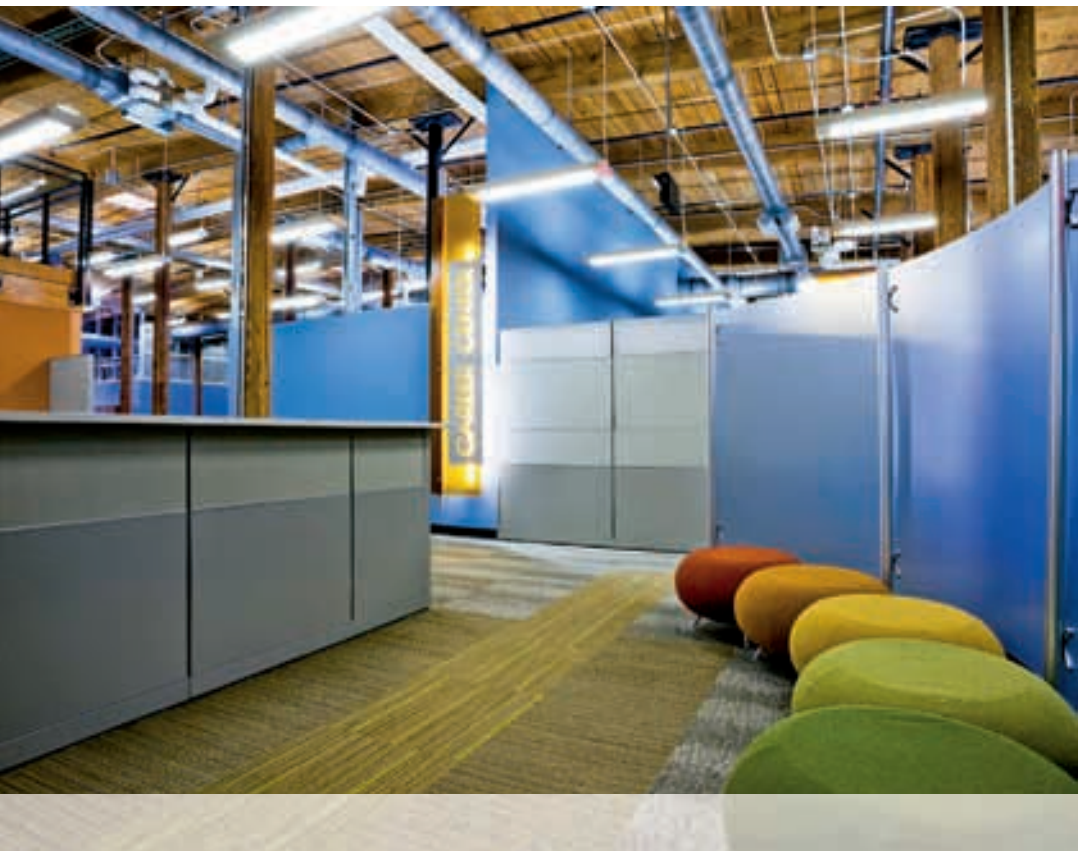
# M.Eng. Career Services

As a Master of Engineering student, you can take advantage of our comprehensive and aggressive career development and job search program, led by the Assistant Director of Career Services for the M.Eng. Program.

Career development begins as part of new student orientation, with activities focused on career exploration and development, and continues with ongoing seminars and workshops.

The Assistant Director of Career Services provides advising through Duke's Career Center and will guide you through Duke's recruiting resources, such as:

- On-campus recruiting, including career fairs and information sessions
- DukeConnect, an online portal that connects students to Duke alumni volunteers for guidance and networking
- Individual and group career coaching
- Special networking events such as Career Fairs, Tech Connect, Night with Industry and Alumni Networking Event



## The M.Eng. degree may be right for you if...

- you want to dig deeper into a particular engineering discipline
- you are ready to learn business fundamentals and management skills as part of a master's level technical education
- you are interested in product design, product development, and engineering design

See **http://meng.pratt.duke.edu/is-meng-right-for-me** for a chart that explores the difference between Duke's M.Eng. Program and other graduate programs at Duke.

# Apply Now

Duke's Master of Engineering Program

### Application requirements include:

- Bachelor's degree in engineering or science
- Graduate Record Exam results
- Test of English as a Foreign Language results (international applicants only)
- Resume
- Statement of Purpose
- Three recommendations

Applications are accepted for fall or spring entrance. For more information, including deadlines and a link to our online application, visit our website at **http://meng.pratt.duke.edu/** or contact us.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