BMCC's Program in Engineering

The Department of Science offers an Associate in Science degree in Engineering Science, providing students with the basic education necessary to enter the third year of an engineering major. The curriculum includes the basic science and mathematics of the first years of an engineering education, and prepares students to successfully pursue their education in the upper division of engineering programs that lead to careers in chemical, mechanical, civil, electrical, computer and other engineering specializations. The curriculum includes courses in the physical sciences, computer methods and mathematics, as well as the liberal arts courses required in engineering programs.

**General Requirements**
The following liberal arts courses fulfill the general requirements:
- English Composition I
- English Composition II
- Fundamentals of Speech

**Core Curriculum Requirements**
The following courses fulfill the core curriculum requirements:
- College Chemistry I
- College Chemistry II
- Elements of Engineering Design
- Computer Aided Analysis for Engineering
- Analytic Geometry and Calculus I
- Analytic Geometry and Calculus II
- Ordinary Differential Equations
- University Physics I
- University Physics II
- Computer Methods in Science
- Computer Methods in Science (Pascal)

**Curriculum Electives**
A selection from the following courses fulfills the elective requirements:
- Organic Chemistry I
- Organic Chemistry II
- Engineering Graphics
- Engineering Mechanics I
- Engineering Mechanics II
- Thermodynamics I
- Circuits and Systems I
- Switching Systems and Logic Design
- Geology I
- Linear Algebra
- Modern Physics

**For More Information**
More information on the Engineering Program is available at: www.bmcc.cuny.edu/science. Or contact us at:

Engineering Program
Borough of Manhattan Community College
199 Chambers Street
New York, NY 10007
212-220-1305

BMCC at a Glance
Borough of Manhattan Community College delivers a quality education in a diverse urban environment, and recognizes the real-life considerations of today's college student, providing access to financial aid, online class options, and flexible weekend, evening, and daytime class schedules. Dedicated to the aspirations of high-striving students of all ages and backgrounds, BMCC:
- enrolls 22,500 full-time and part-time students in degree-granting programs
- awards associate degrees in 27 programs of study
- is located in the vibrant and culturally rich downtown Tribeca neighborhood
- has a student body representing more than 100 countries
- is accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools
- is proud that 86% of its graduates transfer to 4-year colleges.
Meet Our Students

Arielle Plourde chose BMCC for the location and low cost—then discovered other benefits, “I like that they’re always inviting students to join special workshops, like the robotics one,” she says. Plourde, who’s considering a career in environmental engineering is also interested in civil engineering, “because you’re building bridges, and get to see what you’ve accomplished.”

Engineering major Daniel Loi wanted to be an astronaut when he grew up. “My interest is to do something related to the National Aeronautics and Space Administration,” he says. “Aerodynamics is a subset of mechanical engineering, so that’s why I chose this field.” At BMCC, Loi has participated in robotics competitions, both regional and national. “I went to a 4-year school before this, and I’m really impressed by the program here,” he says, adding, “It’s our nature to explore.”

Engineers are team players. Whether you’re an electrical, mechanical or civil engineer, an environmental, chemical, or computer engineer, you’ll work with a team which could include designers, government representatives, biologists, urban planners, and other professionals. And whatever type engineer you become, the problems you help solve will improve products, protect the environment, impact our ability to collect information, travel comfortably, stay healthy—and more.

Solid ground for a career in engineering If you’re an excellent problem solver, if you have strong math skills and a compelling interest in the sciences—engineering might be the field for you.

In BMCC’s engineering program, you’ll benefit from smaller classes taught by professors—not teaching assistants—who’ll mentor you in computer assisted design, electrical circuits, mechanics, and other technologies. There’s even a lab—one of only a handful in the City—where you’ll test properties of “smart materials,” to monitor a building material, without external sensors.

The BMCC engineering curriculum prepares students to enter their third year as an engineering major—and eventually pursue job opportunities that, according to the U.S. Department of Labor, are rapidly growing.

Special projects Through special workshops, BMCC students learn lab techniques consistent with today’s highest engineering standards. Working in small groups, they enter competitions sponsored by the American Society of Mechanical Engineers, the National Science Foundation, and other industry leaders.

Each contest presents a challenge—like creating a prototype to purify water, or a robot to complete a certain task. It takes imagination to envision the devices, knowledge and persistence to build them, and leadership to work in a team with diverse strengths. Successful engineers rely on these qualities to solve the challenges their work is all about.

Accomplished Alumni

Luz Ámayo graduated from BMCC in 2000 with an Associate Degree in Engineering Science, and transferred to City College of New York, where she’s earning a Ph.D. in Mechanical Engineering, writing computer code to simulate the flow of liquids and gases. “It’s very mathematical,” says Amayo. “You have to solve equations of motion, of velocity.” Amayo, who plans to teach engineering in a community college someday, says, “I struggled in the beginning with the language and finances—and there was a lot of support at BMCC.”

Mohamed Hoque earned an Associate Degree in Engineering Science from BMCC in 1994 and transferred to Polytechnic University, completing a Bachelor of Science in Civil Engineering, and a Master of Science in Transportation Planning and Engineering. Hoque, from Bangladesh, is now a Civil Engineer with the MTA. “Mostly, we explore subsurface soil and rock conditions,” he says, “to see if they can support building structures.” He also teaches physics at BMCC, where students “examine the things around us: the light, magnets, loads, forces, velocity—even pitch and sound. And I don’t just teach the students,” he says. “I like to see them grow, and fully realize their potential.”

Inspired Faculty

Associate Professor Mahmoud Ardebili guides students in national contests and special design workshops, where they apply engineering concepts to build microprocessors. Having earned a Bachelor in Engineering from the City University of New York and a Ph.D. in Mechanical Engineering from the CUNY Graduate Center, his own research is on turbulent fluid flows and monitoring carbon fiber composite materials, to improve air travel safety.

Build a Future in Engineering

Engineers are problem solvers. A high-rise developer needs beams with higher tensile strength, to improve earthquake safety. A heart surgeon calls for more efficient transplant valves and consumers demand better mileage—lighter cars—but won’t compromise crash safety.

To resolve the problem at the heart of these scenarios, engineers become innovators, communicators—in graphic and other media—and listeners.

Whether you’re an electrical, mechanical or civil engineer; an environmental, chemical, or computer engineer, you’ll work with a team which could include designers, government representatives, biologists, urban planners, and other professionals.

And whatever type engineer you become, the problems you help solve will improve products, protect the environment, impact our ability to collect information, travel comfortably, stay healthy—and more.