

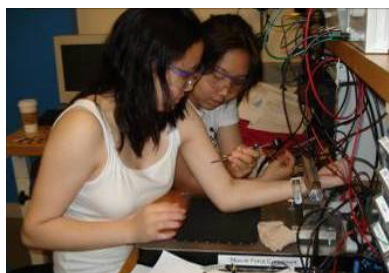
Are You an 11th Grade Female?



Wondering what engineers do?



Are you good at math and science?



Do you like solving problems?



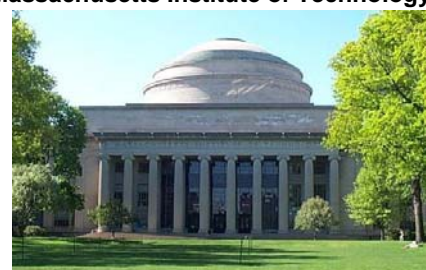
...building things?

Spend 4 weeks at MIT this summer

- learning about engineering
- making new friends
- having fun!



Massachusetts Institute of Technology



<http://wtp.mit.edu>

Application Deadline: January 15, 2009

Women's Technology Program

Women's Technology Program

The Women's Technology Program (WTP) is a rigorous four-week academic and residential experience at MIT where female high school students explore engineering through hands-on classes, labs, and team-based projects in the summer after 11th grade.

Students attend WTP in either Electrical Engineering & Computer Science (EECS) or Mechanical Engineering (ME).

Our goals are to:

- interest girls in studying engineering and computer science, and
- help them recognize their potential for success in these fields.

Female MIT graduate students design and teach the classes, assisted by female MIT undergraduate students who also live in the dorm with the high school girls. The daily schedule includes classes, labs, homework, and social time with other WTP students. WTP classes do not earn academic credit from MIT; WTP students are expected to work hard because they are excited about learning.

Calendar

January 15	Application Deadline
Early April	Admissions Notifications
Mid April	Acceptance Forms Due
End of June	Students Arrive at MIT
End of July	Students Depart MIT

For more detailed and up to date information visit <http://wtp.mit.edu/calendar.html>

Who should apply to WTP?

Female students **now in grade 11** who:

- love and excel at math and science but have very little or no prior experience in engineering
- would like to experience hands-on activities where they design and build engineering projects
- enjoy problem solving and collaborative learning
- want to spend 4 summer weeks challenging their minds, working hard, and making friends with girls from around the U.S. who share their math and science interests

For more information, and to download an application after November 1st, visit our website: <http://wtp.mit.edu/application.html>

There is no application fee.

Admissions Criteria

Sixty participants (40 for EECS and 20 for ME) are selected from a nationwide applicant pool of the top female 11th grade math and science students. Students must reside in the U.S. (or be U.S. citizens if living outside the U.S.).

The primary criteria for acceptance are a strong curiosity about engineering or computer science and a demonstrated ability to excel in math and science. Students should be able to handle college-level material at a rapid pace, but should not have completed prior coursework or summer programs in engineering. Physics and calculus are not prerequisites.

Applicants are accepted based on the strength of their math and science grades, teacher recommendations, personal statements, and scores on the PSAT, SAT, or ACT. PSAT math scores of students accepted in 2008 ranged from 58-80 with median of 73.

We are looking for students who are not yet certain about their future college majors, and who would like to explore engineering and computer science to determine whether these fields might be of interest.

Curriculum -- EECS Track

Computer Science: This class introduces students to thinking computationally to solve problems, and is designed for those with no prior programming experience. Topics include program flow control, algorithms, abstraction, modularity, data structures, and object-oriented design. Students learn about the JAVA language and complete individual and team programming assignments.

Electrical Engineering: Students learn college level material covering both digital and analog electronics through hands-on labs. Topics include combinational and sequential logic, transistors, semiconductors, filtering, operational amplifiers and amplitude modulation. In addition to the conceptual work and labs, there is an extremely demanding project schedule including a final project of the student's own choosing.

Discrete Mathematics: The mathematics curriculum covers a range of subjects that apply to the computer science and electrical engineering classes and extend to the social and natural sciences. Topics will include: binary logic, proof techniques, probability, combinatorics, algorithms, graph theory, mathematical biology, and recursion.

Special Projects: Students select, complete and present final projects in their EE, CS, and Math classes. In past years a 3-day stand-alone motor building project has also allowed student teams to design and construct a DC motor. Specific special projects may change from year to year.

Curriculum -- ME Track

The work done by mechanical engineers covers the gamut between intensive analytical and modeling work to nuts and bolts designing and building. The ME curriculum is designed to provide exposure to the range of work that encompasses mechanical engineering, as well as exposure to and experience with how engineers solve problems and present the results of their work.

Classes: Three integrated class periods cover fundamentals of mechanical engineering. Topics include statics, materials, fluid mechanics, heat transfer, thermodynamics, engineering ethics, and design and manufacturing. Hands-on work is combined with analytical calculations, numerical modeling with Matlab, computer aided design with SolidWorks, and oral and written presentations.

Final Projects: In recognition of the diversity of mechanical engineering work, students perform two capstone projects: one that concentrates on the analytical and modeling work essential to effective engineering, and one that concentrates on designing and building machines for a specified task.

For the first project, students select an area of particular interest, work in pairs on an assigned problem in this area, and give a poster presentation to members of the MIT community, including faculty and current students. For the second project, students brainstorm in small groups throughout the program and then design and build multi-step machines for a Rube Goldberg Challenge held on the final Friday of the program.

Both Tracks --

Guest Speakers: MIT faculty and engineers from industry present information about their research and career paths at lunch time sessions.

Lab Tours and Field Trips: Each track has activities to help students learn more about their fields.

Program Fees

Our goal is that all admitted students be able to attend WTP regardless of their family financial situation. Admissions decisions are made independent of financial aid requests.

Standard tuition is \$3,000, and students are responsible for their own transportation to MIT.

However, based on family financial need, students can be awarded scholarships ranging from a partial tuition discount to a full scholarship including travel reimbursement (attend for free).