



FUNDAMENTALS OF ENGINEERING AT MIT

COURSE INFOSHEET

PROGRAM HIGHLIGHTS:

- This highly anticipated course will be held on the campus of MIT, offering students inside access to some of the most important engineering labs in the world!
- Learn about Fundamentals of Engineering through hands-on projects and simulations
- Introduction to MATLAB computer programming, the pioneering computational programming language in science and technology, that is used in most science and engineering university courses
- Learn from professionals in the field about the latest advancements in engineering and technology

CAMPUS LOCATION & DATES

BOSTON

June 26 - July 08, 2022

July 10 - July 22, 2022

A DAY IN THE LIFE OF A SUMMER SPRINGBOARD STUDENT

CAMPUS BASED - TYPICAL WEEKDAY SCHEDULE

8:00am Breakfast	9:00am - Noon Academic Course
1:30pm - 3:00pm Academic Excursion or Recreational Activity	Noon Lunch
3:30pm - 5:00pm Enrichment Elective	5:00pm Commuter Students Depart
7:00pm Evening Activities	6:00pm Dinner
8:00pm Extended Commuter Students Depart	10:30pm RA Check-in

ACADEMIC PROGRAM OVERVIEW:

Students will have the opportunity to deep dive multiple types of engineering on this program. Starting with the basics of computer programming and moving to the introduction of engineering concepts and practices through various hands-on projects and simulations throughout differing engineering fields.

Utilizing an experiential approach, students can efficiently engage in these varying topics, the instructor will introduce the underlying theory and concepts

to allow for students to creatively think on and design their own prototypes. Each course is limited to a maximum of 15 students.

GUEST SPEAKERS AND EXCURSIONS:

This past summer, students had a first-hand look at the construction site of Winthrop Center in Boston, the world's largest Passive House office center in the world. Our students also visited the Mechanical, Civil and Aeronautical Engineering labs at San Diego State University. Previous excursions included a visit to industrial engineering firm Stantec where Students spent time reviewing "pull schedules" that allow the orchestra of fields to come together to create a masterpiece – the new UCSF cancer center. Students have also previously visited Luchs Consulting, founded in 1948, a dynamic Connecticut licensed engineering and land surveying firm providing a full range of engineering services to federal, state, municipal, utility and private clients throughout New England.

INSTRUCTORS:

Dr. Ali Talebinejad, Ph.D MIT - Ali Talebinejad has done his PhD at MIT Artificial Intelligence Laboratory in the area of Robotics and Computer Vision and has received his MS from MIT Mechanical Engineering in the area of System Dynamics and Control. His postdoctoral research was a pioneering work on *Tracking Moving Objects Using Video Images* at the Canadian Institute for Robotics and Intelligent Systems. His industrial experience includes his work at Parametric Technology Corporation (PTC) on "Pro Engineer" which was the leading software suite in CAD/CAM area at the time. Dr. Talebinejad has been involved in research and teaching in various areas inside and outside MIT from Design, Manufacturing, Numerical Computation, System Dynamics, Control, Robotics, Computer Vision, and Computer Programming, and Calculus. In 2018, he was involved in teaching a course titled "*Computational Thinking for Modelling and Simulation*" through MIT edX program internationally that attracted over 10,000 students. Dr. Talebinejad is private pilot and a member of the American Society of Mechanical Engineers and Institute of Electrical and Electronics Engineers.

Dr. Daniel Frey, Ph.D. MIT - Daniel Frey is a Professor of Mechanical Engineering at MIT. Prof. Frey's research is in the field called "robust design" -- a set of engineering practices which help to ensure that engineering systems function despite variations due to manufacture, wear, deterioration, and environmental conditions. To advance the theory and practice of robust design, Frey is working to understand the role of adaptive behavior in experimentation, the ways that methods can exploit the structure of design problems, and the complementary role of experiments and simulations. Prof. Frey's experiences include: designing prosthetic devices, flying aircraft in the U.S. Navy, and content direction of a children's television series. His honors include the MIT Department of Aeronautics and Astronautics Teaching Award, the Everett Moore Baker Memorial Award for Outstanding Undergraduate Teaching at MIT, the R&D 100 Award (received twice). He is a member of the American Society of Mechanical Engineers, the American Statistical Association, and the American Society of Engineering Education. Dr. Frey holds a Ph.D. in Mechanical Engineering from MIT, an MS in Mechanical Engineering from the University of Colorado and a BS in Aeronautical Engineering from Rensselaer Polytechnic Institute

TUITION RATES

Residential Students: \$5,198

Includes: all meals, lodging, excursions, Academic Course, weekend excursions; Excludes: optional airport pickup/drop off service (available for additional fee)

Commuter Students: \$2,998

Includes: lunch, academic course, excursions, programming from 9am to 5pm, Monday-Friday; Excludes: lodging, breakfast, dinner, weekend excursions

Extended Commuter Students: \$3,58

Includes: lunch, dinner, excursions, academic course, programming from 9am to 8pm, weekend excursions;

Excludes: lodging, breakfast

TUITION SUPPLEMENTS:

- Application fee: \$99 (mandatory, non-refundable)
- Group airport transfers: \$95 each way. Transfers outside of the official group pick-up and drop-off time window are \$195 each way (optional)
- Unaccompanied minor transportation: \$50 additional fee each way (if using airport transfer)