MIT Beaver Works Summer Institute
Spring 2023 Outreach Program – 9 Courses

Yes! You Can Program Autonomous Cars
Yes! You Can Design, Build and Fly Model Aircraft
Yes! You Can Program Cognitive Assistants!
Yes! You Can Run Cyber Operations!
Yes! You Can Analyze the Building Blocks of Life!
Yes! You Can Program Racing Drones!
Many Interesting Things for Aspiring Engineers!

Ham Radio 101*

Shower Thoughts: The Class**

WHO: High School Students (9th and 10th grade)
WHEN: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023**
WHERE: Virtually, through Zoom! (except for the in-person Ham Radio 101)
REGISTER: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

* Ham Radio 101 is in-person at MIT campus Saturdays 11am – 2pm EST.
** Schedule for the “Shower Thoughts: The Class” is different (8 sessions on Saturdays 3pm – 6pm EST).
Who: High School Students (9th and 10th grade) interested in learning about coding and robotics! Beginners encouraged!

When: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

Where: Virtually, through Zoom!

Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023
Yes! You Can Design, Build and Fly Model Aircraft!

Design Build Fly Crash Rebuild

Introduction to RC Model Aircraft Design

Who: High School Students (9th and 10th grade) interested in Aerospace and Aeronautics.

When: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

Where: Virtually, through Zoom!

Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

No Prior Experience Required!
Yes! You Can Program Cognitive Assistants! — a BWSI crash course

An introduction to artificial intelligence through building an autonomous cognitive assistant!

Who: High School Students (9th and 10th grade) interested in learning about code and artificial intelligence! Beginners Encouraged!

When: Saturdays 11am-2pm (EST)-March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

Where: Virtually, through Zoom!

Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

No Prior Experience Required!

LEARN PYTHON!

EXPLORE MACHINE LEARNING!

LEARN ABOUT NATURAL LANGUAGE PROCESSING!
Yes! You Can Run Cyber Operations!

No Cost!

Who: Female High School Sophomore & Juniors interested in learning about defensive and offensive cyber operations! (Previous applicants of [Summer] Cyber Operations are also encouraged to reapply)!

When: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

Where: Virtually, through Zoom! Discord for general communications & labs.

Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

Frequently Asked Questions: https://beaverworks.ll.mit.edu/CMS/bw/FAQ

Experience in: Linux, Bash, Python highly recommended, but not required.

Recommended Hardware: PC/Mac capable of virtualization.
The future of bio is now! Join us this spring for BWSI's *Computational Biology and the Microbiome* course — co-developed by MITRE and MIT Lincoln Laboratory. Learn about fundamental computational biology concepts like genomics, programming, data visualization, and digital biosecurity in a fun, low stress environment.

**Who:** High School Students (9th and 10th grade) interested in computational biology and the microbiome! Beginners encouraged!

**When:** 12 sessions from March 4th to April 22nd, 2023. Asynchronous weekly modules (recorded lectures, notes, assignments), Office-hours on Tuesdays at 4pm EST.

**Where:** Virtually, through Zoom for office-hours.

**Registration Form:** https://mit-bwsi.formstack.com/forms/bwsi_spring_2023
Yes! You Can Program Racing Drones  
Beaver Warrior

Autonomous Drone Obstacle Course

Who: High School Students (9th and 10th grade) interested in Aerospace and Aeronautics.
When: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023
Where: Virtually, through Zoom!
Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

No Prior Experience Required!
Many Interesting Things:
For Aspiring Engineers
From Transistors to Data Science
A BWSI Medlytics intro course by Christian Cardozo

An early introduction to the technologies that shape our world, with applications to medical data analytics!

Python • Computer Architecture • Machine Learning
Computer Vision • Linux • The Internet

No prerequisites.
No pressure.

WHO: High School Students (9th and 10th grade) interested in learning about computers, coding and medical data analytics. Beginners Encouraged!

WHEN: Saturdays 11am-2pm (EST)-March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

WHERE: Virtually, through Zoom!

REGISTER: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023
Who: High School Students (9th and 10th grade) interested in Ham Radio Technology.

When: Saturdays 11am-2pm (EST) - March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

Where: In-person at MIT campus!

Registration Form: https://mit-bwsi.formstack.com/forms/bwsi_spring_2023

No Prior Experience Required!
Correlation does not imply causation. **But it sure is fun.**

**Shower Thoughts:**

**The Class.**

A data science intro course by Christian Cardozo

No prerequisites. No pressure.

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**WHO:** High School Students (9th and 10th grade) interested in learning about computers, coding and data analytics. Beginners Encouraged!

**WHEN:** Saturdays (8 Sessions) 3pm-6pm (EST) – March 4, 11, 18, 25, April 1, 8, 15, 22, 2023

**WHERE:** Virtually, through Zoom!

**REGISTER:** https://mit-bwsi.formstack.com/forms/bwsi_spring_2023