

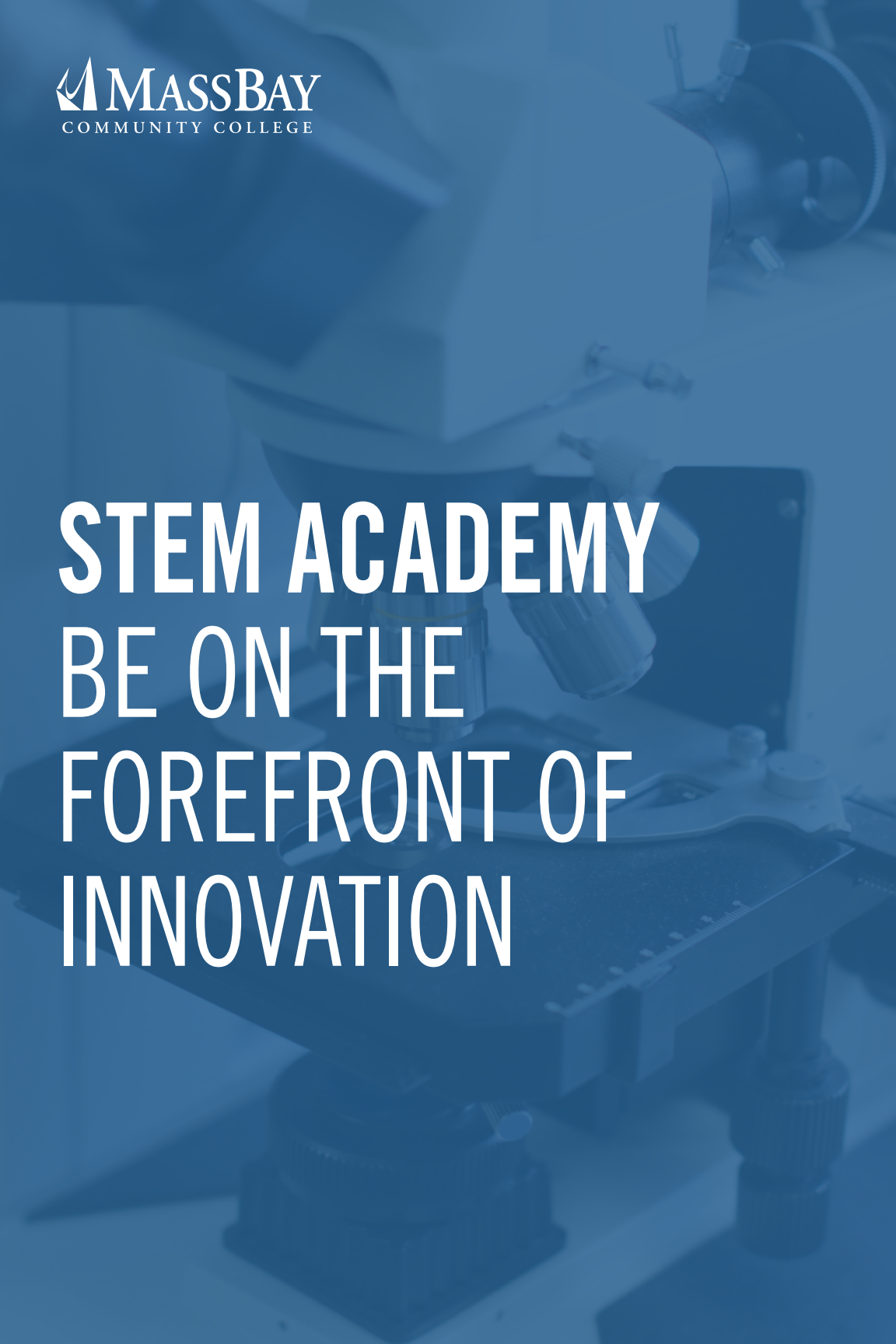
A female scientist with brown hair tied back, wearing a light blue lab coat and a matching surgical mask. She is focused on her work, looking down at a piece of equipment or a sample. The background is a laboratory setting with various scientific instruments and equipment. The entire image has a blue tint.

# STEM

Science | Technology | Engineering | Math

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MASSBAY COMMUNITY COLLEGE  
ACADEMY VIEWBOOK

A blue-tinted background image of a microscope, showing the eyepiece, objective lenses, and the base.

# STEM ACADEMY BE ON THE FOREFRONT OF INNOVATION

## Academies

At MassBay, we have more than 70 degree and certificate programs, which is a lot to choose from. To make your choice easier, we have grouped all of our programs into seven “Academies,” each of which represents a broad area of study. When you choose a program, you also will be a member of an Academy. Think of your Academy as a community of professors and students who share your interests and goals.





## The Academy Advantage

The opportunity to explore many certificate or degree programs to create your best future

Allows you to focus your efforts and time

Membership in a community of learners where students and faculty support one another

A dedicated advisor who will help you develop a plan to achieve your goals and guide you along the way

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## MassBay Quick Facts:

25% of MassBay students transfer to 4-year universities to continue their education

MassBay has more than 4,500 full- and part-time students

More than 70 associate and certificate programs offered through seven Academies

Small class sizes, averaging 17 students per class

20 student clubs, seven athletic teams, and multiple opportunities for leadership

Half of MassBay students receive financial aid



# EXPLORE STEM

Science | Technology | Engineering | Math

Is the STEM Academy a good choice for you? Consider these questions:

Do you like to create, build, or discover things?

Are you interested in creating things that improve lives?

Do you like working on hands-on projects?

Are you detail-oriented and analytical?

*If you answered **YES** to one or more of these questions, read on to learn more about our popular program options!*



# STEM Academy Associate Degree Options

The largest of MassBay's seven Academies—STEM—offers 14 associate degree options, which are designed to be completed in two years of full-time study, so you can enter a four-year university in your junior year.

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## Biotechnology

Internationally renowned, this program offers you exciting hands-on and research-based study opportunities including national research collaborations. Many students also pursue internship opportunities at prestigious institutions in Boston, including Dana Farber Cancer Center and Boston Medical Center, as well as overseas.

## Computer Information Systems

With courses in computer programming, data modeling, and database design, computer networks, and web design and development, this program requires high-level math (Calculus through Differential Equations) and will prepare you to immediately pursue computer information industry positions, or to pursue a bachelor's degree in computer information and other related fields.

## Computer Science

In this program you'll study computer architecture and operating systems, and how they are applied to address user needs. You'll also learn object-oriented and modular programming techniques, including the use, design, and analysis of data structures and associated algorithms, ensuring that you are well prepared to transfer into a computer science program at a four-year university.

## Cyber Security

With coursework that is aligned with National Institute of Standards and Technology (NIST) as well as frameworks developed by the National Security Agency (NSA) and the Department of Homeland Security, this program will prepare you to successfully complete industry certification tests necessary to pursue network security positions or continue your studies at a four-year university.

## Electrical & Computer Engineering

This program provides a comprehensive overview of the electrical and computer engineering field including computer hardware, digital electronics, computer science, and engineering. Upon completion you will be prepared for electronic technician positions or to transfer to related bachelor's degree programs at a four-year institution.

## Engineering

In this program you'll gain a solid foundation in mathematics, physics, and chemistry – the basis of all engineering projects – then study engineering design, engineering mechanics, and engineering physics. After graduation you can pursue a career as a designer or technician or continue your engineering studies at a four-year university.

## Engineering Design

Learn how to translate ideas, sketches, and engineering specifications into workable plans and models in this engaging program. You'll gain experience with the most commonly used equipment and software such as AutoCAD®, AutoDesk Revit®, PTC Creo®, Solidworks®, and MS Project®.

## Environmental Sciences & Safety

In this program you'll gain an understanding of the complex interrelationships between the earth's resources and human needs, preparing you to address issues such as air and water quality (through testing and analysis), industrial waste treatment, municipal wastewater treatment, and environmental law. You will also learn critical occupational safety and protection practices.





## General Studies (Science)

Comprised of core science and technology courses, this program is ideal if you want to pursue a career in science, but do not wish to declare a major until you transfer to a four-year university. The program builds skills in research (quantitative and qualitative), critical thinking and problem solving, and knowledge of the natural, physical and medical sciences.

## Info Systems Technology: Management

In this program, you'll gain a solid background in Windows, database design, computer networks, software applications, and web design. Second-year courses then emphasize how to use computer information tools to manage business requirements, people, and solve workflow challenges.

## Info Systems Technology: Technology

If you are interested in building knowledge and expertise in operating systems and technologies to diagnose and resolve technical issues, this program is for you. Graduates pursue careers in web support, network support, helpdesk, and other technical assistance areas.

## Life Sciences

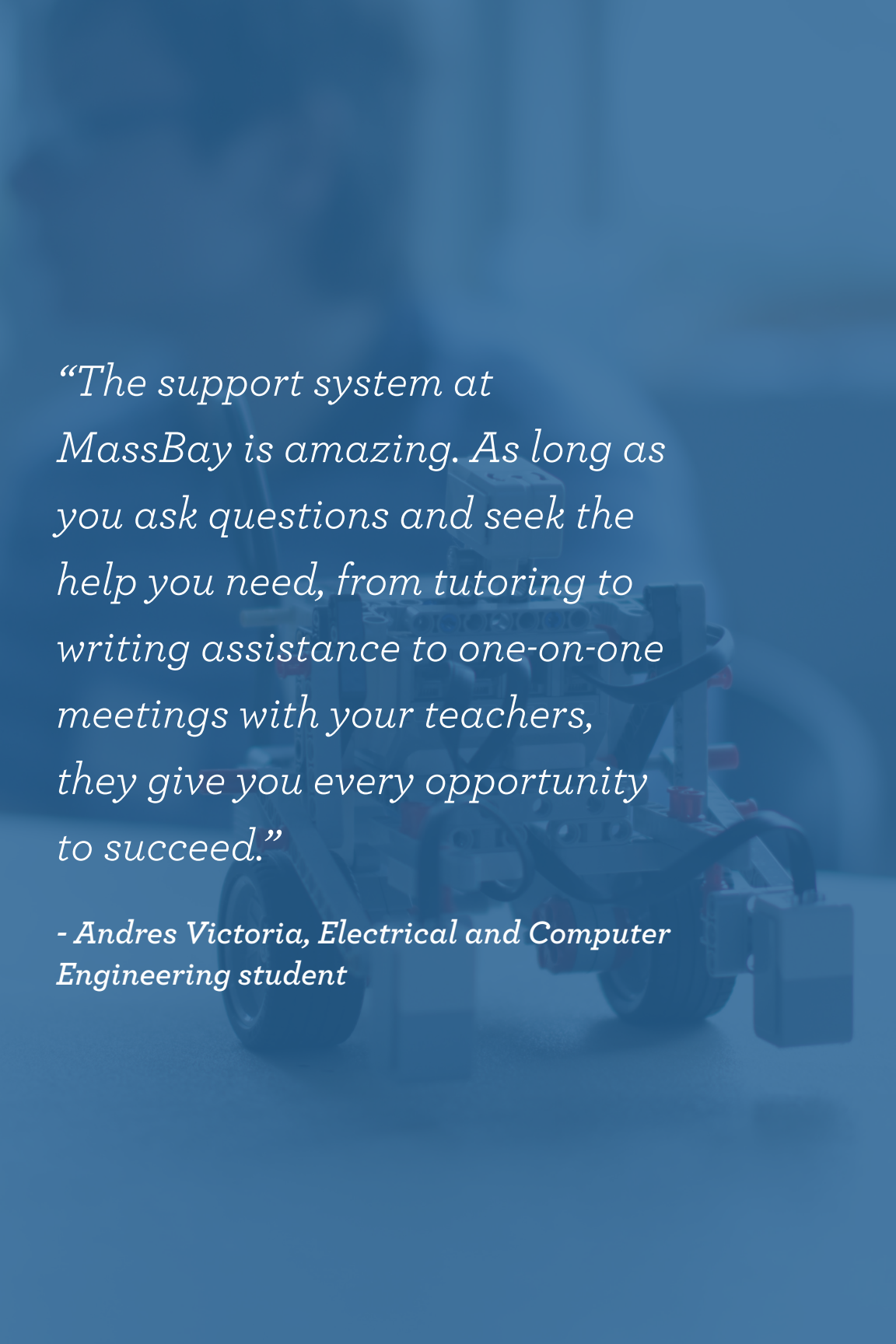
In this program you'll gain a solid foundation in the biological sciences and liberal arts that can be applied to a wide variety of entry-level positions, or prepare you for a four-year biology or pre-med degree.

## Mathematics

In this general studies program, you'll build solid mathematics skills while also exploring disciplines such as economics, science, nutrition, and literature. The curriculum also includes a course on career/life planning to help you explore how an interest in math might be applied to hundreds of possible career paths.

## Mechanical Engineering

If you have an interest in building things—from airplanes to bridges to solar panels to medical products—this program will give you a solid foundation in the skills required, including research, design, development, and production. After graduation you can transfer to a four-year school, or begin working as a mechanical designer or manufacturing technician.



*“The support system at MassBay is amazing. As long as you ask questions and seek the help you need, from tutoring to writing assistance to one-on-one meetings with your teachers, they give you every opportunity to succeed.”*

*- Andres Victoria, Electrical and Computer Engineering student*

# STEM Academy Certificate Program Options

Certificate programs focus on building specific skills without requiring the general academic coursework required for an associate degree. Certificates take less than two years to complete.

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## Cyber Security

Cyber Security is among the fastest-growing STEM fields, and this certificate will prepare you to capitalize on the many available entry-level positions or can help you add a specialization to your current technical credentials. Learn the fundamentals of protecting programs and systems from cyber attacks, with the option of continuing on to advanced study or an associate degree.

## Advanced Cyber Security

Building on the Cyber Security Certificate, this program will enhance your knowledge of the latest industry issues, helping you to progress in your career now, while getting you halfway to an associate degree.

## Computer-Aided Design

Study mechanical, electrical, and architectural design while developing Computer Aided Drafting (CAD) skills. You'll work with the latest equipment and software including AutoCAD®, Pro/ENGINEER®, Solidworks®, and MS Project® while completing this program.

## Information Technology

If you enjoy working with technology tools, but have no professional experience in the field, this program provides a wide-ranging introduction to business-related computer applications. As a graduate, you will be prepared to pursue career opportunities related to helpdesk, technology, networks, and web support.

## Manufacturing Innovation

This 12-month program provides “stackable” credits that you can apply to future degree pursuits, both at the undergraduate and graduate level. You'll study engineering design, manufacturing technology, process control, and quality assurance. You'll also complete an internship or cooperative work experience that will prepare you to succeed in today's high-tech manufacturing industry.

## Manufacturing Technology

This 12-month program will prepare you for immediate employment as a detailer, drafter, CAD operator, CNC programmer, or Quality Assurance/Quality Control Technician. The certificate is designed so that credits can also be applied to associate degree programs or graduate study for students who have already earned a bachelor's degree.

## Technology Support

If you like working with both people and computers, this program will provide the foundation you need to secure a position as a support technician or at a helpdesk in the technology field. Coursework centers on commonly used Linux and Windows software programs and also touches upon networking, cyber security, and web page development.

## Web Designer

An ideal choice if you are interested in learning how to use authoring and scripting tools to present website content in the best way possible for site visitors. Upon completion of this program, you'll be proficient in creating website images and designs that capture visitors' attention.

## Web Developer

In this program you'll gain an understanding of the technologies used to create dynamic and effective websites, including servers, database tools, and software applications. Upon program completion you will be able to design and develop database-driven websites that effectively present content to visitors.





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*MassBay is the springboard  
to success for thousands of  
students each year thanks to:*

*Top-notch teaching*

*Opportunities beyond the classroom*

*Affordability and flexibility*

*Exceptional job placement rates*

*Seamless transfer to four-year colleges*

For more information visit:  
**massbay.edu/stem**

## IMPORTANT MASSBAY RESOURCES

### Academic Achievement Center (AAC)

aac@massbay.edu  
Wellesley Hills: 781-239-2620  
Framingham: 508-270-4213

### Academic & Transfer Advising Center

advisingcenter@massbay.edu  
Wellesley Hills & Framingham: 781-239-2775

### Admissions Office

admissions@massbay.edu  
Wellesley Hills: 781-239-2500  
Framingham: 508-270-4059

### Disability Resources

aac@massbay.edu  
Wellesley Hills: 781-239-2234  
Framingham: 508-270-4267

### Financial Aid Office

finaid@massbay.edu  
Wellesley Hills: 781-239-2600  
Framingham: 508-270-4010

### Office of the Registrar

registrar@massbay.edu  
Wellesley Hills: 781-239-2550  
Framingham: 508-270-4050

### Placement Testing

aac@massbay.edu  
Wellesley Hills & Framingham: 781-239-2620

### Student Accounts Office

studentaccounts@massbay.edu  
Wellesley Hills & Framingham: 781-239-2540

### Student Development

studentdevelopment@massbay.edu  
Wellesley Hills: 781-239-3142  
Framingham: 508-270-4014

### Student Orientation and Registration (SOAR)

soar@massbay.edu  
Wellesley Hills & Framingham: 781-239-2721

### Veterans and Military Services

All campuses: 781-239-3142  
www.massbay.edu/veterans

### Wellesley Hills Campus Bookstore

Wellesley Hills: 781-239-2650  
www.massbayshop.com

### Framingham Campus Bookstore

Framingham: 508-270-4150  
www.massbayframinghamshop.com



### Wellesley Hills Campus

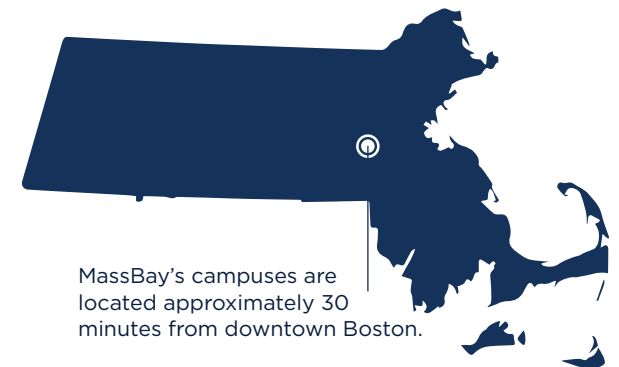
50 Oakland Street  
Wellesley Hills, MA 02481

### Framingham Campus

19 Flagg Drive  
Framingham, MA 01702

### Ashland Campus

250 Eliot Street  
Ashland, MA 01721



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