FITCHBURG STATE UNIVERSITY

MATHEMATICS

Students earning a bachelor's degree in mathematics take a variety of courses and have a strong background in mathematics that will lead them to a wide range of careers or graduate school.

Students in mathematics can have a concentration in either Applied Math or Education (Secondary or Middle School).

HOW TO USE THE ACTION PLAN

Use the Action Plan timeline to explore potential career paths and plan for success during and after your college experience. The Action Plan provides suggestions and a place to start the conversation with your advisor, but every person and every career journey is unique. Customize your own personal action plan using the **My Mathematics Action Plan tool** (next page).

Maximize the time you have in college to prepare for your future. What do you want to do after you graduate with a multi-purpose Mathematics degree?

The Action Plan helps you to come up with tentative goals (remember, it's ok if these change as you continue to learn more about yourself and the field!) so you can start working on short-term steps to help you reach those goals or shift directions. Remember, you do nott have to do this all on your own, get the support you need from your department and from Student Support Services like **Career Services and Advising (CSA).**

ALUMNI CAREER FIELDS

- **36%** Education
- **12%** Business Development
- **11%** Engineering
- **8%** Information Technology

WHY CONSIDER AN INTERNSHIP?

- Gain experience in potential career fields
- Discover areas of interest across various occupations
- Build your professional networks

EXAMPLES OF PAST INTERNSHIPS AND EXPERIENCES

- Student teaching at the high school and middle school level
- Math Tutor in the Academic Coaching and Tutoring Center
- Hudson River Undergraduate Research Conference
- Mathfest

ALUMNI STORY
JILLIAN BAILEY '15

Employer: Public Consulting Group

"At Fitchburg State, I completed a BS in Mathematics and a BS in Communications with a concentration in Video Production. In 2016, I started my first mathematics-focused job as a pension analyst at a consulting firm called Willis Towers Watson. After working at Willis Towers Watson for about 4.5 years, I left the company to pursue my master's in data analytics which I completed in July 2021 through Southern New Hampshire University. I just started a new job as a business analyst at another consulting firm called Public Consulting Group."

CAREER COMPETENCIES

Critical Thinking, Problem Solving, and Decision Making:
Analyze a situation (real life or theoretical) with the appropriate, available tools, choose and utilize a carefully thought-out problem solving strategy to make inferences about the situation, and make sound decisions based on the analysis. Students recognize the importance of precise definitions, reason logically and gain knowledge through experimenting with different strategies and practicing perseverance.

Proficiency in Contemporary Technology:
Utilize various programming languages and computer applications to solve sophisticated problems in different contexts. Students will recognize when technology is useful, select an appropriate tool to tackle the problem, and adapt to emerging technologies when needed.

Professionalism–Leadership, Ethics, Oral Communication, Teamwork:
Communicate ideas thoroughly and clearly in collaborative work and presentations. Students will work both independently and with others on projects and tasks and will participate actively in all aspects of their academic work with integrity. Students will develop leadership skills such as active listening, mentorship, empathy, creativity, organization, prioritization, and flexibility.

Career Management:
Explore career options through meeting professionals in various mathematics fields, networking with alumni, and discussing options with fellow students, professors and the career center. Students choose from one of three main career pathways—education, applied mathematics, and theoretical mathematics—and may broaden their career options and marketability by adding a minor or double major.

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MATHEMATICS ACTION PLAN

Take a look at the suggested activities in the Action Plan below. You do not need to complete all these tasks, but it is a place to start generating ideas. Think about what you would like to work on now in order to feel well prepared to enter your career field or graduate school upon graduation. Use the blank My Action Plan tool with your advisor to come up with the action items that are priorities for you, revisit and revise this action plan each semester.

	FIRST YEAR	SOPHOMORE YEAR	JUNIOR YEAR	FINAL YEAR
ACHIEVE ACADEMIC MILESTONES	Build on the foundations of mathematical knowledge and strengthen your logical thinking and writing skills. Explore potential mathematics careers, including those paired with other fields, through your Gen Ed classes. In the fall semester, declare concentration/pathway in education or applied mathematics, if desired. Students in the education pathway must take their Communication/Literacy Massachusetts Teacher's Examination for Licensure (MTEL).	Gain skills in solving complex problems through technology, expand your foundational knowledge in logic and mathematics, begin work focused in your chosen pathway and confirm that your choice of major is right for you. Declare a minor or double-major if desired and begin corresponding coursework.	Dig deeper into your chosen pathway, which by now may include a minor or double-major in another field. Engage in modeling, logic, and mathematical exploration through advanced electives. Plan out the rest of your college career to ensure you reach your goals. Students in the education pathway take the math subject MTEL.	Engage in advanced mathematics and undertake a major project in your chosen pathway through the senior seminar in mathematics or applied mathematics. Education majors take practicum seminar in addition to the mathematics seminar. Complete coursework for classes in your chosen minor or double-major.
BUILD EXPERIENCE TOWARD YOUR CAREER	Consider a part-time job and/or a summer job, apply at the Tutor Center to tutor the math classes in which you have excelled. Get involved in a club that fits your interests.	Consider applying to summer jobs/internships that will build relevant experience. Speak to a professor about specific interests and potential research opportunities such as Research Experiences with Undergraduates (REUs).	Pursue a research opportunity (eg. REU, research with a professor), an internship, or a summer job that involves mathematics. Utilize the Career Center and consult your advisor to explore such opportunities.	Pursue further research opportunities (eg. REUs and research with a professor). Prepare for graduate school, if appropriate. Education majors complete their field experiences.
JOIN THE CAMPUS COMMUNITY AND EXPLORE CIVIC ENGAGEMENT	Join one or two university or community clubs or organizations that reflect your interests. Pay attention to campus events and attend/get involved with the ones that interest you.	Continue your involvement with clubs and organizations and discuss opportunities to study abroad with your advisor. Seek out ways to use your skills to help others. Consider volunteering with local agencies and/or ask about opportunities through the Crocker Center. Seek out leadership roles (eg. in the clubs in which you are involved, in class, at work, in the community).	Study abroad and/or take more leadership positions in your clubs/organizations. Ask about membership to Pi Mu Epsilon, the mathematics honor society. Continue or begin volunteering with local agencies.	Study abroad and/or use your math/education skills to help others in the community. Take on greater leadership in the clubs and organizations in which you have been involved. Consider participating in a service organization after graduation.
PREPARE FOR LIFE AFTER GRADUATION	Familiarize yourself with CSA (Career Services and Advising) Center workshops and services. Start building your resume in consultation with an advisor in CSA Center. Take a career strength/skills assessment and activate your Handshake account. Attend mathematics talks, math alumni presentation-panel and/or department social events to familiarize yourself with career options in mathematics and network with alumni. Education Majors must begin collecting material for professional portfolios.	Attend departmental events and ask questions of alumni and speakers. Talk to your advisor about opportunities for internships and/or experiential learning. Consider participating in alumni job shadowing or informational interviews with professionals in potential career fields. Update your resume.	Attend a CSA workshop or one-on-one meeting to go over cover letters and interview prep. Update your Handshake profile. Create a professional networking account like LinkedIn and/or accounts on industry specific platforms (i.e. schoolspring for education). Attend career fairs and events with perspective employers on campus and seek opportunities to network within the math department and in the departments of any chosen double-major or minor. Consider graduate/professional schools and decide if it's right for you and your career path. Update your resume in consultation with the CSA.	Develop a list of potential employers and check for recruitment events/open positions throughout the year. If applicable, apply to graduate schools and take entrance exams in the fall semester. Seek teaching positions near the end of the spring semester and other employment opportunities in the spring semester. Keep track of and follow up with job applications. Practice skills by doing at least 2 mock interviews and getting feedback. Finalize a professional portfolio (if applicable) and your resume.

Note for Transfer Students: This plan is not rigid and you may be at different points in each section than your class year. This plan is just a starting point to discuss with your advisor and customize for the experiences you want to have before completing your degree.