

Academics at Marian

MATH AND NATURAL SCIENCES

How to Be Successful as a Math, Data Science, Biology, and/or Chemistry Major at Marian

- Strategies for navigating the academic programs and possible pre-professional programs
- Opportunities to explore
- What this success can look like

An abstract, high-resolution geometric pattern in shades of teal and black. The pattern consists of numerous small, interconnected shapes that form a complex, crystalline or molecular structure. The overall effect is a dense, textured field of light and dark points and lines, resembling a data visualization or a microscopic view of a material.

Math and Data Science Majors

- **Mathematics** develops skills in logic, problem-solving, and quantitative reasoning with which we can make good decisions. Further math is necessary for learning physics, chemistry, biology, and statistical research.
- **Data Science** involves finding patterns in data, managing data, and communicating about data. Information collected nowadays is waiting to be analyzed and utilized, and companies are looking for individuals who can add new insight and abilities to this process.



Science Majors

- **Chemistry** is the central science that connects physics and biology. The laws of physics are similar to chemistry, and chemical reactions are the root of biological processes.
- **Biology**, being the study of life, provides insight into how all organisms are created, live, survive in the environment around us, and die.

Progression in Programs

- **Mathematics:** Upon completing Calculus I, the student has begun the required courses involving more calculus, linear algebra, abstract algebra, statistics, and electives that look at mathematics in different ways (minimum of 38 credits).
- **Data Science:** Through a multitude of courses across the disciplines of Math, Psychology/Social Work, Business, and Data Science, the student will investigate statistical methods, business analytics, decision science, database management, and data visualization, culminating in capstone courses involving internships/externships (45-47 credits).

Progression in Programs

- **Chemistry:** Courses of study will involve not only chemistry, but calculus, physics, biology and required research projects (61 credits).
- **Biology:** Courses in biology, chemistry, math and statistics/research methods leading to a senior research project (47-50 credits).
- **Pre-professional programs:** A science major with electives tailored to meeting the needs of the desired profession (medical, dentistry, veterinary, etc.).

Experiential Learning Opportunities

- Applied Liberal Arts and Professional Preparation
- Experiential Learning Opportunities
 - Laboratories, research, and professional development.
 - Data research studies in the community.
- Why These Are Important
 - high-impact practices proven to enhance learning; learning-by-doing.
 - provide in-demand skills that set applied liberal arts graduates apart and make them the next generation of leaders.

College is Different

- Personal/intellectual/professional development – GEN 101 as a model.
- What can students do to be successful?
Utilize professors' office hours and the Learning Center; be proactive in their education.
- What can parents do to support success?
Foster independence—listen, advise, but also encourage students to use resources on campus and solve problems on their own.
- FERPA will restrict parents' access to some information to protect the privacy of the student. (Please see FERPA presentation.)

Career Preparation

What you can do with your major:

- Start career
- Graduate school
- Professional schools

- **Math:** Actuary, Statistician, Finance/Business, Teacher, Researcher.
- **Data Science:** Data Scientist, Database Management, Data Engineering, Data Analytics, Decision Scientist, Machine Learning.
- **Chemistry:** Chemist, Lab/Pharmacy Technician, Quality Control
- **Biology:** Medical/Veterinary School, Environmentalist, Biological Technician.

Career Preparation

Career Services—Marian provides multiple resources to assist you in finding a career after college.

Marian's Director of Career Services will guide you in resumé writing, interview preparation, externships, and finding the career that best suits you.

We're Here to Help!

Advising, Support, and Student Responsibilities

Your academic and faculty advisors will...

- Develop class schedules/plans.
- Explain university policies, requirements, and procedures.
- Teach you to use the tools and resources available
- Assist you in staying on track for graduation.
- Help you better understand what you want to do and how to get there.
- Be a helpful guide as you complete college.

For Further Information

Linda Krueger, Mathematics: llkrueger64@marianuniversity.edu

Laramie Paxton, Math and Data Science: lpaxton43@marianuniversity.edu

John Hammond, Biology, Pre-professional: jhammond08@marianuniversity.edu

Sarah Garvey, Chemistry: sgarvey00@marianuniversity.edu