Dear Student,

As chairman of the SWOSU Department of Mathematics, I would like to thank you for your interest in our department. It is my pleasure to explain here some advantages of studying mathematics at SWOSU in particular, and of studying the field of mathematics in general.

Ours is a dynamic department with many valuable assets: a relatively young faculty; a high faculty-to-student ratio; a visible camaraderie among students; and many opportunities outside of classes for students to interact freely among each other and faculty in many settings. These include extensive faculty office hours, our lounge area, and our Math Club functions. To further enhance the experience, we include students in the important work of the department, hiring them as graders, tutors and other occasional department functions. By grading and tutoring, students not only earn some spending money, but also have their mathematical skills sharpened considerably. I am convinced much of my success as a math student can be attributed to grading and tutoring, so that the fundamental skills became sharp and automatic.

If your interest in mathematics is due to an understanding that it is necessary for some other field you wish to study, we certainly welcome you to take as many courses as you like in our department, and to participate in our other student activities. I started as a pre-medical student myself, but found that I was drawn into studying more mathematics than required and was especially pleased at how much easier my chemistry, physics and even biology studies could be because of the math skills I was accumulating. The statistics I took also made my thinking much more sophisticated in a very wide range of science and social science topics. In short, studying mathematics is far from a waste of time whatever is your major field, and the more you study the more you realize that. A minor in mathematics is a valuable and natural complement to many other degree programs, though you may find that as you enjoy the fruits of your studies in math you seriously consider acquiring the full major (or a double major), with all of its benefits.

If you are interested in teaching high school mathematics, then you probably have a clear idea what you think you would like to be doing professionally in a few years. Our graduates who hold Mathematics Education degrees are well regarded, and can be found teaching in high schools all over Oklahoma and surrounding states. Your mathematics courses will be very similar to those of the “pure math” majors, with only a few required courses being different, and many of our mathematics education majors opt to take all of the required courses for mathematics majors and count them as electives, or even fulfill requirements for both majors. Either way, because of the strong mathematics content in our math education degree, those majors are still marketable in industry should they decide to take that route after first experiencing the education side of math. The required education courses also help students decide if teaching math in a high school is for them, so there are few surprises after graduation.

If you just like math, and are intrigued by the idea of earning a “pure” Mathematics degree, you may wonder, as many people do, “what can you do with a degree in mathematics, besides teach?” It is a good question, with surprising answers.
First, let me point out that employers value mathematical skills! Numerical literacy is really only the beginning, and indeed mathematics majors only occasionally use calculators. In fact it is a minority of the subjects—albeit an important one—which are approached numerically in mathematics. Instead, it quickly becomes clear that a trained mathematician will be competent and confident in all sorts of logical thinking, which translates into problem solving, which is needed by companies of any size. The mathematics itself is obviously needed by technology and “biotech” firms, the government and military, but in fact it can help any company or organization. Even the Oakland Athletics baseball team famously used methods from actuarial science (a specialized type of economic statistics) for years to build extremely competitive teams with some of the lowest payrolls in baseball.

Mathematical competence also indicates to an employer that you can be easily trained for complex jobs. Recently many of our graduates were hired by energy companies, accounting firms, consulting firms, the federal government and all sizes of corporations. Others chose graduate work in math or other fields such as chemistry or biology and were subsequently hired in those fields. Some “double-major” in math and another field and found themselves much more prepared to work in that other field than students who only had the other degree. A very recent such double-major of ours is now working towards a doctorate in biology at Harvard University, and confirmed to me the role her math major played in bringing her there.

I should also point out that a student with good grades who completes a mathematics degree can usually be paid to study mathematics in the larger graduate schools. Unlike SWOSU, most state universities rely upon graduate teaching assistants to teach many of their lower-level math courses, and are therefore always interested in hiring graduate students to fill these roles, usually for salaries ranging around $20,000 per year, with tuition waived as well. The upshot is that nobody should have to pay to study mathematics in graduate school!

Regardless of the field (if it is the least bit technical) one may wish to pursue in graduate school, substantial undergraduate work in mathematics will be an advantage. In fact, I have had other graduate students in chemistry, biology, various engineering and other very technical fields confide that they wished they had either double-major in mathematics and their chosen field, or even majored in math and only “minored” in their chosen field to prepare them for their current academic work. Once you rise to a high enough level in any of these fields, the work and even the “language” of the field becomes increasingly mathematical, and the mathematical techniques needed become much more sophisticated.

My father, himself a now retired physician who was a mathematics and chemistry major before going to medical school, often said that if you are unsure what to major in, start with a double major in Mathematics and English, so you can reason (math) and communicate (English), and nearly any employer will have a place for you. Unfortunately this is in large part because it can be quite difficult for employers to find someone to hire with a high level of these skills.

If you have interest or talent in mathematics, or any field scientific, artistic, professional or otherwise, I encourage you to pursue it as far as you can in college, even if you currently
believe that field will not be a basis for your career. College is an opportunity that may never come again, and you may be surprised where it takes you. That geometric theorem you learn may help with a construction job; that history you read may help you win a local political argument; and that instrument you play in a band could bring you and others great joy for years as you play in a community or church music group. These can all be useful and fulfilling, and you can really grow all of your talents in four years of college. But if you really want to understand how things work, keep studying that math!

Thank you again for your interest. If I can answer any questions, feel free to contact me.

Best wishes,