

The Way our Mission would have Us Be Augsburg College's Mathematics Department

For over twenty years, Augsburg College has pursued the following mission:

To nurture future leaders in service to the world by providing high quality educational opportunities, which are based in the liberal arts and shaped by the faith and values of the Christian church, by the context of a vital metropolitan setting, and by an intentionally diverse campus community.

Augsburg College's Mathematics Department is dedicated to support the college's mission through the activities of the faculty and by the inherent characteristics of the academic discipline. Each of the faculty members brings their distinct perspectives and strengths. Their activities with students reflect the spirit of the mission. In addition, the field of mathematics naturally fits with many of the aspects of the mission.

The way we are based in the liberal arts...

Mathematics is recognized as one of the oldest liberal arts. Two of the four subjects in the quadrivium studied at Plato's Academy are pure mathematics while the other two are closely connected to mathematics. Beyond its historical classification, mathematics is both liberating and an art. Observing the world with the mathematics opens one to come to a deeper understanding of our surroundings.

Mathematics is inherently cross-disciplinary. Many of the department's 100-level courses are required for other majors or support other majors. Most natural science majors take calculus and many programs require statistics or algebraic reasoning skills. Mathematics faculty incorporate into their courses mathematical applications from various disciplines. Exploratory investigations are used to develop students' quantitative reasoning skills. Being able to evaluate myriads of quantitative data frees one to be an informed citizen less likely to be swayed by inappropriate use of numbers. In the mathematics courses, students encounter interesting problems to solve.

The department offers a variety of ways that students can explore vocational possibilities. Many majors are hired as assistants for the department in education tasks such as tutoring or holding study sessions. Some volunteer their time tutoring local K-12 students. Prospective K-12 teachers of mathematics develop wide approaches to mathematics topics enabling them to identify how their students think and learn mathematics. Students in AugSem are exposed to research, occupational and volunteer opportunities involving mathematics. Students see faculty working on research and engage in vocational conversations with the faculty. Invited speakers from the region address the mathematics of their occupations and research at the biweekly Augsburg College Mathematics Colloquium Series. Mathematics majors are encouraged to participate in research both on- and off-campus as well as internships with local companies.

The way we are shaped by the faith and values of the Christian church...

The department does not emphasize "vocation" in the meaning of the Christian faith. The discipline does provide a firm example that relativism is not always a defensible point of view.

There can be right and wrong answers. On the other hand, there are multiple approaches to solving a problem and multiple perspectives of understanding the right answer. It is in these multiple perspectives that we come to a deeper appreciation of the problem.

The way we are shaped by the context of a vital metropolitan setting...

Mathematics is used in our immediate and larger community. Mathematics students are advised to engage in service projects. AugSem students take tours of local business and research centers and meet community members. Teachers of mathematics at high-needs schools work with mathematics and mathematics education faculty to better their teaching and bring experiential knowledge to the prospective K-12 teachers. Talented adjunct faculty and invited speakers are available to the department because they are members of the metropolitan area.

The way we are shaped by an intentionally diverse campus community...

Mathematics can be a barrier. Often people believe that they cannot do math and are intimidated by those who can. Sometimes these perceptions are tied to gender or culture. The faculty in the Mathematics Department take seriously the task to make mathematics accessible by intentional instruction, through engaging problems, and by helping students overcome emotional barriers developed over years. We work closely with the CLASS office to find ways for individual students to succeed in learning mathematics. Tutoring and help sessions are arranged for students who are working at strengthening their ability to become independent learners. The developmental courses and the liberal arts foundations courses are developed to help students succeed at learning mathematics and being able to use it without shame as they encounter the world.