

The Value of a Degree in Mathematics

USG Advisory Committee on Mathematical Subjects

Although nearly every student is exposed to mathematics in his or her pre-college studies, relatively few students, even among those with a keen aptitude and interest in mathematics, have a clear idea of what a degree in mathematics entails before they begin taking college-level mathematics courses. One popular misconception is that a mathematics degree is all about computation, and that in advanced mathematics courses those computations just get longer and more complex. On the contrary, students pursuing a degree in mathematics learn that mathematics is about much more than computation. Mathematics is also about discovering patterns and recognizing similar properties among disparate objects, about explaining those discoveries and arguing logically and rigorously. Mathematics is about formulating problems as well as solving them, modeling real-world phenomena with mathematical constructs, and analyzing data. Indeed, the reasoning, critical thinking, and problem-solving skills that a mathematics major develops are often the most valuable and longest-lasting benefits of a degree in mathematics.

A degree in mathematics is excellent preparation for a career in actuarial sciences, statistics, mathematical modeling, cryptography, mathematics education, as well as for graduate studies in mathematics, statistics, or engineering. Each year the Wall Street Journal publishes a ranking by CareerCast.com of the 200 jobs from best to worst based on five criteria: physical demands, work environment, income, stress, and hiring outlook. In 2009, the top-ranked job was mathematician, with actuary second, and statistician third. In every year since, mathematician or actuary has been ranked first or second, and all three (mathematician, actuary, statistician) have ranked in the top 20. Payscale.com publishes rankings of majors by salary potential. In its most recent ranking (2013-14), the actuarial mathematics major was second-highest on the list (behind petroleum engineers), with a median mid-career salary of \$120,000. The statistics major ranked 13th, with a median mid-career salary of \$98,900, applied mathematics was 16th with \$96,200 and mathematics was 22nd with \$88,800. These figures reflect the salaries of those who earn only a bachelor's degree. Clearly, a degree in mathematics is of great economic value.

However, the value of a degree in mathematics is not limited to careers that are strictly mathematical. Employers in many different fields value the skills developed by mathematics majors; consequently, math majors find themselves in demand by employers for careers in a wide spectrum of fields. Students interested in pursuing a career in law, medicine, or business take LSAT, MCAT, and GMAT exams, respectively, as part of their applications for professional studies. Majors in math and statistics score higher on all three of these tests than any other major. (Association of American Medical Colleges, Chronicle of Higher Education). By serving as an excellent preparation for professional studies, a degree in mathematics contributes even further to economic growth. In summary, the people of Georgia benefit greatly from having the University System offer its students the tremendous opportunities, both economic and intellectual, of a degree in mathematics.