

B.S. Mathematics

2020-21

WEBSITE

<https://www.swau.edu/mathphy>

DEPARTMENT PERSONNEL

Chair

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The Bachelor of Science degree in Mathematics is one of four mathematics programs offered by Southwestern Adventist University's Department of Mathematics and Physical Sciences. The great mathematician, Carl Friedrich Gauss called mathematics "the Queen of the Sciences." The Mathematics program at Southwestern Adventist University aims to give each student an understanding of basic mathematics and its applications to solving problems expressible by algebraic equations and inequalities. The department also seeks to provide the foundation necessary for teaching the subject at the elementary or secondary level, or for the pursuance of graduate-level studies in mathematics.

Job Market

Students trained in Mathematics will find many opportunities that are either purely Mathematics or Mathematics related. Currently, there is a shortage of graduates with this kind of academic preparation. National interest in STEM (Science, Technology, Engineering, and Mathematics) areas have highlighted the need for graduates trained in these areas, at all academic levels and as a matter of highest national significance. Graduates will find openings in Applied Mathematics, Scientific Research, Statistics, Actuarial Work, and other related fields.

Job Outlook

According to the Bureau of Labor Statistics, "employment of mathematicians is expected to grow by 26 percent from 2018 to 2028, much faster than the average for all occupations, which will result in about 47,700 new jobs. Growth is anticipated as businesses and government agencies continue to emphasize the use of big data, which math occupations can analyze."

Earnings

Earning potential is also affected by geographic location and by whether one pursues a career in industry, academia, or in a government-related organization. Other factors such as experience and relevant skills also play a part in determining a graduate's earnings. According to the website, [payscale.com](https://www.payscale.com) salaries for holders of Bachelor's degrees in Mathematics start around \$38,949 and can reach up to \$96,135.

Bachelor degree candidates are generally qualified for entry-level positions in most career fields. Getting a graduate or professional degree will significantly increase the earning potential of the holder of a first degree.

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Required Courses

Item #	Title	Credits
MATH 181	Calculus I	4
MATH 182	Calculus II	4
MATH 283	Calculus III	4
MATH 211	Logic and Set Theory	3
MATH 321	Differential Equations	3
MATH 361	Introduction to Linear Algebra	3
MATH 431	Abstract Algebra	3
MATH 471	Real Analysis	3
MATH 484	Mathematics Seminar	1
MATH 485	Portfolio	1
	Mathematics, BS 6 Hours Upper Division Electives	6
	Sub-Total Credits	35

Required cognate: take two of the following courses:

Item #	Title	Credits
CSIS 110	Principles of Computer Programming I	3
CSIS 111	Principles of Computer Programming II	3
PHYS 121	General Physics I	4
PHYS 122	General Physics II	4
	Sub-Total Credits	6-8

Sample 4 Year Curriculum

General Education Requirements

To view general education requirements for this major please visit: <https://catalog.swau.edu/core-curriculum-for-a-bachelors-degree>

First Year First Semester

Item #	Title	Credits
ENGL 121	Freshman Composition	3
	History GE Curriculum Guide	3
MATH 181	Calculus I	4
	Religion GE Curriculum Guide	3
	Sub-Total Credits	13

First Year Second Semester

Item #	Title	Credits
COMM 111	Speech	3
	History GE Curriculum Guide	3
MATH 182	Calculus II	4
	Religion GE Curriculum Guide	3
	Sub-Total Credits	13

Second Year First Semester

Item #	Title	Credits
ENGL 220	Research Writing	3
	Kinesiology GE Curriculum Guide	1
	Life and Physical Science GE Curriculum Guide	4
MATH 211	Logic and Set Theory	3
MATH 283	Calculus III	4
	Sub-Total Credits	15

Second Year Second Semester

Item #	Title	Credits
	Life and Physical Science GE Curriculum Guide	4
	Literature GE Curriculum Guide	3
MATH 361	Introduction to Linear Algebra	3
	Religion GE Curriculum Guide	3
	Social Science GE Curriculum Guide	3
	Sub-Total Credits	16

Third Year First Semester

Item #	Title	Credits
	Electives for 120	3
	Fine Arts GE Curriculum Guide	3
	Kinesiology GE Curriculum Guide	1
MATH 321	Differential Equations	3
	Mathematics Upper Division Electives	3
UNIV 111	Wellness for Life	2
	Sub-Total Credits	15

Third Year Second Semester

Item #	Title	Credits
	Electives for 120	3
	Electives for 120	3
MATH 471	Real Analysis	3
	Mathematics Cognate	3
	Mathematics Upper Division Electives	3
	Sub-Total Credits	15

Fourth Year First Semester

Item #	Title	Credits
	Electives for 120	3
MATH 431	Abstract Algebra	3
MATH 484	Mathematics Seminar	1
	Mathematics Cognate	3
	Mathematics Upper Division Electives	3
	Religion GE Curriculum Guide	3
	Sub-Total Credits	16

Fourth Year Second Semester

Item #	Title	Credits
	Electives for 120	3
	Electives for 120	3
	Electives for 120	3
	Electives for 120	3
MATH 485	Portfolio	1
	Mathematics Upper Division Electives	3
	Sub-Total Credits	16

June 2020

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