

## B.S in Mathematics - Pure Mathematics Emphasis 2022-23

|  | Course            | Title                          | Cr. | When      | Prerequisites                                       |
|--|-------------------|--------------------------------|-----|-----------|---|
| Required GE Course   | Quantitative Lit. | MATH 1210 - Calculus I         | 4   | F/S/SU    | MATH 1050 & 1060 or ACT 26+                         |
| Other GE courses are required to graduate with a Bachelor's Degree from SUU. |                   |                                |     |           |   |
| Math Core Courses  | MATH 1220         | Calculus II                    | 4   | F/S/SU    | MATH 1210   |
|  | MATH 2210         | Calculus III                   | 4   | F/S/SU    | MATH 1220   |
|  | MATH 2270         | Linear Algebra                 | 3   | F/S/SU    | MATH 1220   |
|  | MATH 2280         | Differential Equations         | 3   | S         | MATH 1220 & 2270**                                  |
|  | MATH 3120         | Transition to Advanced Math    | 3   | F/S       | MATH 1220 & MATH 2270                               |
|  | MATH 3250         | Complex Variables              | 3   | S-ODD     | MATH 2210   |
|  | MATH 3700         | Probability and Statistics     | 4   | F/S/SU    | MATH 1220   |
|  | MATH 4220         | Abstract Algebra I             | 3   | F         | MATH 3120   |
|  | MATH 4400         | Advanced Calculus I            | 3   | F         | MATH 2210 & 3120                                    |
| Choose 1 Advanced Class  | MATH 4230         | Abstract Algebra II            | 3   | S-EVEN    | MATH 4220   |
|  | MATH 4410         | Advanced Calculus II           | 3   | S-ODD     | MATH 4400   |
| Choose 1 Programming Class   | CS 1400           | Fundamentals of Programming    | 3   | F/S       | CSIS 1030 or MATH 1050 or Permis.                   |
|  | CS 1410           | Object Oriented Programming    | 3   | F/S/SU    | CS 1400   |
| Math Elective Credits (15 total credits required)                            | MATH 3130         | Modern Geometries              | 3   | S         | MATH 3120   |
|  | MATH 3160         | Number Theory                  | 3   | F-ODD     | MATH 3120   |
|  | MATH 3190         | Fundamentals of Data Science   | 3   | S         | MATH 2140, (MATH 2170 or 2270), ANLY 4100, (CS1400) |
|  | MATH 3500         | Actuarial Mathematics          | 3   | S-EVEN    | MATH 1100 or MATH 1210                              |
|  | MATH 3600         | Numerical Analysis             | 3   | S-EVEN    | MATH 2250 or 2280 & comp. knowledge                 |
|  | MATH 3770         | Mathematical Modeling          | 3   | S-ODD     | MATH 3700   |
|  | MATH 3800         | Partial Differential Equations | 3   | F-ODD     | MATH 2210 and 2250 or 2280                          |
|  | MATH 3990         | Undergraduate Research         | 1-3 | As Needed | Instructor Permission; may repeat up to 5 cr.       |
|  | MATH 4230         | Abstract Algebra II            | 3   | S-EVEN    | MATH 4220   |
|  | MATH 4340         | Topology                       | 3   | F-EVEN    | MATH 3120   |
|  | MATH 4410         | Advanced Calculus II           | 3   | S-ODD     | MATH 4400   |
|  | MATH 4700         | Special Topics                 | 1-3 | As Needed | Instructor Permission; may repeat up to 5 cr.       |

### Additional Degree Requirements:

In addition to the above-listed requirements, to complete a Bachelor's Degree at SUU, students must have a total of 40 upper-division credits, and 120 credits total. Pure Math majors may need an additional 5-9 upper-division credits, and 30 or more free elective credits to meet both of those requirements.

\* PHYS 2210/2215 is the recommended Physical Science GE course for students seeking advanced degrees in mathematics.

\*\* Can be taken concurrently