

MATHEMATICS, BACHELOR OF SCIENCE (BS) - CONCENTRATION IN STATISTICS

Program Learning Outcomes

- Students graduating with a degree in Mathematics will:
 - Use mathematics knowledge to solve theoretical and applied problems. (UGO 2,3,4,6)
 - Apply rigorous deductive reasoning to prove mathematics results. (UGO 2,3)
 - Use technology to perform and interpret mathematics analyses. (UGO 3,4,10)
 - Communicate mathematics knowledge to both expert and non-technical audiences. (UGO 1,4,5)
 - Demonstrate professional integrity and accountability in the use and communication of mathematics. (UGO 7,8,9,10)

Related Links

Mathematics, Concentration in Statistics, BS Program Page (<https://www.sru.edu/academics/majors-and-minors/mathematics/>)

Professional Licensure/Certification Page (<https://www.sru.edu/students/student-consumer-information/professional-licensures/>)

Curriculum Guide

GPA Requirement

Major GPA: 2.0 or higher
Overall GPA: 2.0 or higher

Summary*

| Code | Title | Hours |
|------|---|-------|
| | Rock Studies 2 Requirements | 44 |
| | Basic Math Requirement | 0-3 |
| | Major Requirements | 60 |
| | Natural Science & Math College-Wide Requirements not included in Rock Studies 2 | 4 |
| | Electives | 12 |

* All undergraduate degree programs require a minimum of 120 credits. Some courses meet multiple requirements, but are only counted once toward the 120 credit total required to graduate.

Rock Studies 2 Requirements

| Code | Title | Hours |
|--------------------------------|--|-------|
| The Rock | | |
| SUBJ 139 | Foundations of Academic Discovery ¹ | 3 |
| ENGL 102 | Critical Writing | 3 |
| ENGL 104 | Critical Reading | 3 |
| STAT 152 | Elementary Statistics I | 3 |
| Select one of the following: 3 | | |
| COMM 200 | Civil Discourse: Theory & Practice | |

| | | |
|--|---|-----------|
| PHIL 110 | Ethics and Civil Discourse | |
| POLS 235 | Civil Discourse and Democracy | |
| Subtotal | | 15 |
| Integrated Inquiry | | |
| <i>Creative and Aesthetic Inquiry</i> | | |
| Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| <i>Humanities Inquiry</i> | | |
| Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| <i>Social Science Inquiry</i> | | |
| Select 3 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) | | 3 |
| <i>Natural Sciences Inquiry</i> | | |
| CHEM 107 & CHEM 111 | General Chemistry I and General Chemistry I Lab | 4 |
| <i>Physical Sciences Inquiry</i> | | |
| PHYS 216 | University Physics 1 with Lab | 4 |
| Subtotal | | 17 |
| Thematic Thread | | |
| Select 12 Credits (https://catalog.sru.edu/undergraduate/rock-studies/rock-studies-program/) ² | | 12 |
| Total Hours | | 44 |

¹ Course offered in multiple subjects; cannot take course in first major subject.

² One course from each category; six credits must be 300-level or above; no more than 4 credits from one subject area; specific courses required in first major, regardless of prefix of course, cannot be used to satisfy thread requirements; any course with same prefix as first major cannot be used to satisfy thread requirements, even if it is not a course in the first major.

Basic Math Requirement

Check with your adviser or a current degree audit report to see if you have been exempted from this course. The credit earned in this course will not be counted toward the 120 credit hour minimum needed to earn a degree.

| Code | Title | Hours |
|--|-------------------|------------|
| Complete one of the following: 0-3 | | |
| Meet required minimum SAT or ACT math score OR | | |
| ESAP 110 | Beginning Algebra | |
| Total Hours | | 0-3 |

DIVERSITY, EQUITY, AND INCLUSION REQUIREMENT

Students must take and pass a course with the Diversity, Equity, and Inclusion (DEI) designation prior to graduation. Students can meet this requirement by taking any DEI - designated course in any program at any time during their undergraduate career.

Major Requirements

- 30 major credits must be taken at SRU or PASSHE
- 30 major credits must be taken at the 300 level or above
- 12 math/statistics credits must be taken at the 300-400 level at SRU

| Code | Title | Hours |
|--|---|-----------|
| Mathematics Core Courses | | |
| MATH 131 | Discrete Mathematics ^{1,2} | 3 |
| MATH 230 | Calculus II ^{1,2} | 4 |
| MATH 235 | Foundations of Mathematical Proof ^{1,2} | 3 |
| MATH 231 | Calculus III ¹ | 4 |
| MATH 232 | Linear Algebra ¹ | 3 |
| MATH 313 | Introductory Analysis I ¹ | 3 |
| STAT 352 | Mathematical Statistics I ¹ | 3 |
| Subtotal | | 23 |
| Statistics Concentration Courses | | |
| MATH 314 | Introductory Analysis II ¹ | 3 |
| STAT 252 | Introduction to Statistical Modeling ¹ | 3 |
| STAT 256 | Statistical Computing ¹ | 3 |
| STAT 353 | Mathematical Statistics II ¹ | 3 |
| STAT 363 | Statistical Learning ¹ | 3 |
| STAT 491 | Statistics Seminar ¹ | 1 |
| or MATH 491 | Mathematics Seminar | |
| Subtotal | | 16 |
| Required Upper-level STAT Electives AND Concentration Electives | | |
| Choose 21 credits from the list below | | 21 |
| Any Additional MATH or STAT Courses 300/400 Level EXCEPT MATH 310 or STAT 350 ¹ | | |
| CPSC 323 | Fundamentals of Database Systems | |
| CPSC 405 | Data Mining and Data Analysis | |
| CPSC 480 | Topics in Computer Science: Machine Learning | |
| HLTH 313 | Biostatistics | |
| PSYC 421 | Advanced Behavioral Statistics | |
| Total Hours | | 60 |

¹ Course counts for 50% of Major requirements and Major GPA

² Minimum grade of C required to register for 300-400 level math

* Some courses may require pre-requisites. Please see course descriptions to determine if there are any pre-requisites for that specific course.

Natural Science and Math College-Wide Requirements

| Code | Title | Hours |
|--------------------|-------------------------------|-----------|
| CHEM 107 | General Chemistry I | 3 |
| CHEM 111 | General Chemistry I Lab | 1 |
| MATH 225 | Calculus I | 4 |
| PHYS 216 | University Physics 1 with Lab | 4 |
| Total Hours | | 12 |

Computer Programming Language

| Code | Title | Hours |
|--|-------|-------|
| Competency in an approved Computer Programming Language is Required - See Advisor Approval | | |
| CPSC | | |

Important Curriculum Guide Notes

This Curriculum Guide is provided to help SRU students and prospective students better understand their intended major curriculum. Enrolled SRU students should note that the My Rock Audit may place already-earned and/or in progress courses in different, yet valid, curriculum categories. Enrolled SRU students should use the My Rock Audit Report and materials and information provided by their faculty advisers to ensure accurate progress towards degree completion. *The information on this guide is current as of the date listed. Students are responsible for curriculum requirements at the time of enrollment at the University.*

PASSHE - Pennsylvania State System of Higher Education Institutions

MATHEMATICS BS/STATISTICS (6152/STAT)

This program is effective as of Summer 2023

Revised 05.24.2023

UCC 02.14.2023