

Rowan University

Bachelor of Science Degree in Mathematics under the Rowan Core (old format)

FREE ELECTIVES (any course that counts toward a Rowan Bachelor's degree).....**22 SH**

ROWAN CORE.....**26 SH**

Communicative Literacy (Written/Spoken)	9 SH
Composition I	3
Composition II	3
Public Speaking	3
Scientific Literacy	4 SH
Introductory Mechanics	4
Quantitative Literacy	4 SH
Calculus I	4

Humanistic Literacy	3 SH
Choice	3
Global Literacy	3 SH
Choice	3
Artistic Literacy	3 SH
Choice	3

Non-Core Courses Required for the Program: Computer Science & Programming (4 SH), Intro to Symbolic Logic (3 SH), {Intro to Electricity & Magnetism *or* Intro to Thermo, Fluids, Waves & Optics} (4 SH), LIT course (3 SH)**14 SH**

Rowan Seminar (RSEM) required for all native students and students who transfer in with fewer than 24 SH at the time of transfer (this presentation assumes that the SH are absorbed by another category)

MATH MAJOR CORE COURSES.....**35 SH**

Discrete Math	3
Calculus II	4
Calculus III	4
Linear Algebra	3
Concepts in Stat Data Analysis	3
Ordinary Differential Equations	3

Modern Algebra I	3
Introduction to Real Analysis	3
Probability & Random Variables	3
Introduction to Complex Analysis	3
Mathematics Seminar (Senior Standing)	3
Satisfies Writing Intensive (WI) requirement	

MAJOR RESTRICTED ELECTIVES.....**23 SH**

Technological Tools for Discovering Mathematics	2
College Geometry (required for a dual major in subject matter education)	4
Intro to Real Analysis II	3
Modern Algebra II	3
Intro to Topology	3
Numerical Analysis	3
Mathematical Statistics	3
Design of Experiments: Analysis of Variance	3
Applications of Mathematics	3
Mathematics Field Experience (permission of instructor/department)	3
Introduction to Partial Differential Equations	3
Theory of Numbers	3
History of Mathematics (required for a dual major in subject matter education)	3
Deterministic Models in Operations Research	3
Stochastic Models in Operations Research	3
Elements of Statistical Learning	3

A Maximum of two courses from the following list can count as MAJOR RESTRICTED ELECTIVES

Design and Analysis of Algorithms prerequisites (Data Structures CS04.222 & Foundations of Com Sci CS07210))	3	Modern Physics	3
Theory of Computing prerequisites: (Data Structures CS04.222 & Foundations of Com Sci CS07210)))	3	Mathematical Physics	3
Analytical Mechanics	4	Statistical Physics	4
Quantum Mechanics	4	Electricity and Magnetism	4
Physical Chemistry I	3	Physical Chemistry II	3
<i>Other courses might be added here</i>			

Major Core Courses (Note: all prerequisites require a C- or better)

- Math 03.150 **Discrete Mathematics** - Precalculus or its equivalent prep
- Math 01-131 **Calculus II**- Calculus I
- Math 01-230 **Calculus III**- Calculus II
- Math 01-210 **Linear Algebra**- Calculus II and Discrete Math
- Math 01.231 **Ordinary Differential Equations**- Calculus III and Linear Algebra
- Math 01-340 **Modern Algebra**- Linear Algebra, Discrete Math and Intro to Symbolic Logic (Philosophy Course)
- Math 01-330 **Introduction to Real Analysis** – Discrete Math and Calculus III
- Stat 02-320 **Concepts in Statistical Data Analysis** – Calculus II, Linear Algebra, Intro to Scientific Programming**
- Stat 02-360 **Probability & Random Variables** - Discrete Math and Calculus III
- Math 01-430 **Intro to Complex Analysis**- Introduction to Real Analysis I
- Math 01-498 **Mathematics Seminar** (Senior Standing and successful completion of Modern Algebra, Ordinary Differential Equations, Introduction to Real Analysis I, and one of the following two: College Geometry or Probability & Random Variables)

Major Restricted Electives:

- Math 01.205 **Technological Tools for Discovering Mathematics**- Intro to Scientific Programming, Discrete Math, and Calculus II
- Math 01-310 **College Geometry***- Discrete Math, Calculus III, Linear Algebra and Intro to Symbolic Logic
- Math 01-331 **Introduction to Real Analysis II**- Introduction to Real Analysis I
- Math 01-341 **Modern Algebra II**- Modern Algebra I
- Math 01-354 **Intro to Topology**- Intro to Real Analysis I
- Math 01-332 **Numerical Analysis**- Intro to Scientific Programming**, Calculus III, and Linear Algebra
- Math 03-400 **Applications of Mathematics**- Calculus III, Linear Algebra, and Ordinary Differential Equations
- Math 01-421 **Mathematics Field Experience**- Calculus II, Introduction to Probability & Random Variables and permission of instructor
- Math 01-386 **Introduction to Partial Differential Equations**- Ordinary Differential Equations
- Math 01-352 **Theory of Numbers** - Discrete Math and Linear Algebra
- Math 01-410 **History of Mathematics*** – Two 300/400 level math courses that count toward the math major
- Math 03-411 **Deterministic Models in Operations Research** – Calculus III and Linear Algebra
- Math 03-412 **Stochastic Models in Operations Research**- Probability & Random Variables and either (Calculus III and Linear Algebra) or Deterministic Models in Operations Research
- Stat 02-340 **Elements of Statistical Learning** – {Concepts in Statistical Data Analysis or Probability & Random Variables}, Linear Algebra, Intro to Scientific Programming**
- Stat 02-361 **Mathematical Statistics** - Probability & Random Variables
- Stat 02-371 **Design of Experiments: Analysis of Variance** - Probability & Random Variables, Linear Algebra and either Statistics II or Mathematical Statistics

*Note: *College Geometry* and *History of Mathematics* are required for K-12 Education.

**The program now requires *Computer Science & Programming (CS 04-103)*. If you took Intro to Scientific Programming before Fall 2018, see the instructor of the course that requires a programming course.

Suggested order to take courses for: B.S. in Mathematics

Year	FALL – 16 sh, 17sh, 15 sh, 15sh	SPRING – 17 sh, 15 sh, 15 sh, 12 sh
FRESHMEN	Calculus I Computer Science & Programming Intro to Symbolic Logic College Comp I Choice	Calculus II Discrete Mathematics College Comp II Introductory Mechanics Choice
SOPHMORE	Calculus III Intro to E & M or Intro TFW&O Linear Algebra Public Speaking Humanistic Literacy	Ordinary Diff Eq Probability & Random Variables Concepts in Stat Data Analysis “Old Gen Ed” LIT Global Literacy
JUNIOR	<i>(Odd or even year?)</i> Modern Algebra I Intro to Real Analysis I Math Restricted Elective* Artistic Literacy Choice	<i>(Odd or even year?)</i> Complex Analysis Math Restricted Elective* Math Restricted Elective* Choice Choice
SENIOR	<i>(Odd or even year?)</i> Math Restricted Elective* Math Restricted Elective* Math Restricted Elective* Choice Choice	<i>(Odd or even year?)</i> Mathematics Seminar Math Restricted Elective* Math Restricted Elective* Choice

*Because some Math Restricted Electives are offered only once every two years, it may be necessary to move some of the junior and senior level courses in order to be able to take certain electives or a specific concentration. *(Odd or even year?)* Please speak with your advisor prior to taking Calculus III and Linear Algebra so that you can map out your schedule in order to be able to take any courses you so desire.

Note: Students obtaining a dual major in education should meet each semester with both advisors to make sure that you are on track with both sets of courses. Many of the non-specified general education and free elective courses will be satisfied by specific education course requirements