

Rowan University Bachelor of Science Degree in Mathematics

GENERAL EDUCATION

**Communication Bank (Written/Spoken).....9 SH**

Composition I	3
Composition II	3
Public Speaking	3

**Science & Mathematics .....14 SH**

Introductory Mechanics	4
Introduction to Electricity & Magnetism	4
Introduction to Scientific Programming	3
Discrete Math	3

**Arts.....3 SH**

Any course from Art, Music, Dramatic Arts	3
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**Major Core Courses.....30 SH**

Calculus I	4
Calculus II	4
Calculus III	4
Linear Algebra	3
Ordinary Differential Equations	3
Modern Algebra I	3
Introduction to Real Analysis I	3
Probability & Random Variables	3
Introduction to Complex Analysis	3
Mathematics Seminar (Senior Standing)	3

**Restricted Electives..... 27 SH**

Technological Tools for Discovering Mathematics	2
*College Geometry	4
Intro to Real Analysis II	3
Modern Algebra II	3
Intro to Topology	3
Numerical Analysis	3
Mathematical Statistics	3
Applications of Mathematics	3
Mathematics Field Experience (permission of instructor)	3
Introduction to Partial Differential Equations	3
Theory of Numbers (Background in modern algebra & linear algebra recommended)	3
History of Mathematics	3
Deterministic Models in Operations Research	3
Stochastic Models in Operations Research	3
Statistical Design of Experiments I	3
Statistical Design of Experiments II	3

General Education	51 SH
Free Electives	9 SH
Major Courses	60 SH
Total Credits	120 SH

**Social and Behavioral Sciences.....6 SH**

any combination of the following:

Anthropology	Economics	Geography
Political Sci.	Psychology	Sociology

**History, Humanities and Language.....6 SH**

Any "Literature" Course	3
"Intro to Symbolic Logic (please note may not be P/NC)	3

**Non-Program Electives 13 SH**

*A multi-cultural global studies course must also be included. A Rowan Seminar course is required for all native students and people who transfer with fewer than 24 sh.*

Please see flow chart or catalog for all prerequisite needs

*A Maximum of two courses from the following list can be counted as 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

## Major Core Courses

- Math 01.130 **Calculus I**- 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 and Intro to Symbolic Logic (Philosophy Course)  
 Math 01-330 **Introduction to Real Analysis** – Calculus III or its equivalent  
 Stat 02-360 **Probability & Random Variables** - Calculus III & Discrete Math  
 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 & Calc. I  
 Math 01-310 **College Geometry**- Linear Algebra and Intro to Symbolic Logic (Philosophy Course)  
 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 and Linear Algebra  
 Stat 02-361 **Mathematical Statistics** - Probability & Random Variables  
 Stat 02-371 **Statistical Design of Experiments I** - Probability & Random Variables and either Statistics II or Mathematical Statistics  
 Stat 02-372 **Statistical Design of Experiments II** - Probability & Random Variables and either Statistics II or Mathematical Statistics  
 Math 03-400 **Applications of Mathematics**- Calculus III and Linear Algebra  
 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** (Background of Modern Algebra and Linear Algebra Recommended)  
 Math 01-410 **History of Mathematics**- Calculus II  
 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

Note: College Geometry is required for K-12 Education

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

Year	FALL	SPRING
<b>FRESHMEN</b>	<b>Calculus I</b> <b>Intro to Scientific Programming</b> <b>Intro to Symbolic Logic</b> <b>College Comp I</b> Choice or Gen Ed	<b>Calculus II</b> <b>Discrete Mathematics</b> <b>College Comp II</b> <b>Introductory Mechanics</b> Choice or Gen Ed
<b>SOPHMORE</b>	<b>Calculus III</b> <b>Intro to Electricity &amp; Magnetism</b> <b>Linear Algebra</b> <b>Public Speaking</b> Choice or Gen Ed	<b>Ordinary Diff Eq</b> <b>Probability &amp; Random Variables</b> <b>Math Restricted Elective</b> Choice/Gen Ed (LIT) Choice/ Gen Ed
<b>JUNIOR</b>	FALL (Odd Years) <b>Modern Algebra I</b> <b>Intro to Real Analysis I</b> <b>Math Restricted Elective</b> Choice or Gen Ed Choice or Gen Ed (MGS)	SPRING (Even Years) <b>Complex Analysis</b> <b>Math Restricted Elective</b> <b>Math Restricted Elective</b> Choice or Gen Ed Choice or Gen Ed
<b>SENIOR</b>	Fall <b>Math Restricted Elective</b> <b>Math Restricted Elective</b> <b>Math Restricted Elective</b> Choice or Gen Ed Choice or Gen Ed	Spring <b>Mathematics Seminar</b> <b>Math Restricted Elective</b> <b>Math Restricted Elective</b> Choice or Gen Ed Choice or Gen Ed

Notes:

(1) 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. 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.

(2) 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