

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 & Mathematics14 SH

Introductory Mechanics	4
Introduction to Electricity & Magnetism OR Introductory Thermodynamics, Fluids, Waves, and Optics	4
Introduction to Scientific Programming	3
Discrete Math	3

Arts.....3 SH

Any course from Art, Music, Dramatic Arts	3
---	---

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

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, Discrete Math and Intro to Symbolic Logic (Philosophy Course)
Math 01-330	Introduction to Real Analysis – Discrete Math and Calculus III
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
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, 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

Note: College Geometry is required for K-12 Education

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

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