

B.S. in Mathematics

Academic Program Guide for **New First-Year Students** (Effective Spring 2024)

Department of Mathematics (mathadvising@rowan.edu)

Students who entered Rowan University prior to Fall 2018 should follow the guide for their program and start year in consultation with their advisor.

Rowan University Graduation Requirements for all Majors / Degrees

- Students must complete at least 120 semester hours (sh) of coursework that apply to their Rowan University degree.
- Students must have a cumulative GPA of at least 2.0 in Rowan University coursework. (Transfer courses/credit do not count toward the RU GPA.)
- A minimum of 30 sh of coursework must be completed at/through Rowan University.
- Only grades of “D-” or above may apply to graduation/degree requirements. (Some programs may set higher minimums.)
- Students must meet the Rowan Core and Rowan Experience Requirements.
 - An individual course can potentially satisfy one Rowan Core literacy and/or multiple Rowan Experience attributes.
 - Rowan Core and Rowan Experience designations are listed in course details in Section Tally (www.rowan.edu/registrar) and may also be searched on that site under “Attributes.” A list of Rowan Core courses is here: <https://confluence.rowan.edu/display/AS/Rowan+Core+Course+List>.
- Students must apply for graduation and should do so for the term in which they will complete all program requirements.

Program-Specific Graduation Requirements for this Major / Degree

- Students must receive a grade of C- or better in all courses satisfying Major requirements.

Rowan Core Requirements¹

*Students must satisfy all **six** Rowan Core Literacies. A minimum total of 3 sh of coursework is required to satisfy each Literacy.*

With the exception of the 9 sh counted here for Communicative Literacy, credits attached to the courses in this section will apply elsewhere.

- (COML) Communicative Literacy: *Must be met by the following three courses or their official equivalents:*
- COMP 01111 College Composition I (3 sh)
 COMP 01112 College Composition II (3 sh)
 CMS 04205 Public Speaking (3 sh)
- (ARTL) Artistic Literacy *Recommendation from major:*
- (GLBL) Global Literacy *Recommendation from major:*
- (HUML) Humanistic Literacy *Recommendation from major:*
- (QNTL) Quantitative Literacy *Recommendation from major:* MATH 01130 (4 sh counted under major)
- (SCIL) Scientific Literacy *Recommendation from major:* PHYS 00220 (4 sh counted under non-program)

Subtotal of credits counted in this section: 9 sh

Rowan Experience Requirements

Students must satisfy all three Rowan Experience attributes. Credits attached to the courses in this section will apply elsewhere.

- (LIT) Broad-Based Literature Attribute *Recommendation from major:*
- (WI) Writing Intensive Attribute *Recommendation from major:* MATH 01498 (3 sh counted under major)
- (RS) Rowan Seminar Attribute² *Recommendation from major:*

Non-Program Courses (18-19 sh)

Courses in this section cannot be in the major department.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
CS 04103 or CS 04113	Computer Science and Programming or Introduction to Object-Oriented Programming	Best for DS Minor / Programming CUGS Best for CS Minor or Double Major	Spr/1	>= C-	4
PHYS 00220	Introductory Mechanics	Satisfies Scientific Literacy	Fall/2	>= C-	4
CS 04225 or CS 04222 or PHYS 00222 or PHYS 00221	Principles of Data Structures or Data Structures and Algorithms or Intro to Electricity & Magnetism or Intro to Thermodynamics, Fluids, Waves & Optics	Best for DS Minor / Programming CUGS Best for CS Minor or Double Major Both Physics courses are required for a Minor in Physics	Spr/2	>= C-	3-4
STAT 02320	Concepts in Statistical Data Analysis		Spr/2	>= C-	3
Subtotal: 18 sh					

¹ The Rowan Core requirements are waived for transfer students with an earned A.A. or A.S. degree from a NJ community/county college.

² The Rowan Seminar requirement is waived for all students transferring 24 or more approved credits into Rowan University at the time of initial entry.

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Major Requirements (63 sh)

SUMMARY OF MAJOR REQUIREMENTS

- 21 sh of Foundational Courses
 - 15 sh of Mid-Level Courses
 - 27 sh of Mathematics Restricted Electives
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- 63 sh total

FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
MATH 03150	Discrete Mathematics		Fall/1	>= C-	3
MATH 01130	Calculus I	Satisfies Quantitative literacy	Fall/1	>= C-	4
MATH 01131	Calculus II		Spr/1	>= C-	4
MATH 01230	Calculus III		Fall/2	>= C-	4
MATH 01210	Linear Algebra		Fall/2	>= C-	3
MATH 01231	Ordinary Differential Equations		Spr/2	>= C-	3
MATH 01300	Mathematical Proof Writing		Spr/2	>= C-	3
					Subtotal: 24 sh

MID-LEVEL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
MATH 01340	Modern Algebra I		Spr/3	>= C-	3
MATH 01330	Introduction to Real Analysis I		Fall/3	>= C-	3
STAT 02360	Probability & Random Variables		Fall/3	>= C-	3
MATH 01430	Introduction to Complex Analysis		Spr/3	>= C-	3
MATH 01498	Mathematics Seminar	Satisfies WI requirement	Spr/4	>= C-	3
					Subtotal: 15 sh

MATHEMATICS RESTRICTED ELECTIVES

Choose 24 sh of courses from the following two banks (a maximum of two courses can be taken from the second bank):

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
First Bank:					
<input type="radio"/>	MATH 01205	Technological Tools for Discovering Mathematics		>= C-	2
<input type="radio"/>	MATH 01310	College Geometry		>= C-	4
<input type="radio"/>	MATH 01331	Introduction to Real Analysis II		>= C-	3
<input type="radio"/>	MATH 01341	Modern Algebra II		>= C-	3
<input type="radio"/>	MATH 01354	Introduction to Topology		>= C-	3
<input type="radio"/>	MATH 01332	Introduction to Numerical Analysis		>= C-	3
<input type="radio"/>	STAT 02340	Elements of Statistical Learning		>= C-	3
<input type="radio"/>	STAT 02361	Mathematical Statistics		>= C-	3
<input type="radio"/>	STAT 02371	Design of Experiments: Analysis of Variance		>= C-	3
<input type="radio"/>	MATH 03400	Applications of Mathematics		>= C-	3
<input type="radio"/>	MATH 01421	Mathematics Field Experience	Requires special permission	>= C-	3
<input type="radio"/>	MATH 01386	Introduction to Partial Differential Equations		>= C-	3
<input type="radio"/>	MATH 01352	Theory of Numbers		>= C-	3
<input type="radio"/>	MATH 01410	History of Mathematics		>= C-	3
<input type="radio"/>	MATH 03411	Deterministic Models in Operations Research		>= C-	3
<input type="radio"/>	MATH 03412	Stochastic Models in Operations Research		>= C-	3
Second Bank (you may choose at most 2 of the courses below to replace two of the courses from the First Bank above):					
<input type="radio"/>	CS 07340	Design and Analysis of Algorithms	Prereqs.: CS 04222 & CS 07210	>= C-	3
<input type="radio"/>	CS 07422	Theory of Computing	Prereqs.: CS 04222 & CS 07210	>= C-	3
<input type="radio"/>	PHYS 00310	Analytical Mechanics		>= C-	4

