

# B.A. in Mathematics (Comprehensive)

## Academic Program Guide for **New First-Year Students** (Effective Fall 2018) Department of Mathematics ([mathadvising@rowan.edu](mailto: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 & Rowan Experience designations are listed in course details in Section Tally ([www.rowan.edu/registrar](http://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 Requirements<sup>1</sup>

*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:* (sh counted under Non-Program or Free Elective categories)
- (GLBL) Global Literacy      *Recommendation from major:* (sh counted under Non-Program or Free Elective categories)
- (HUML) Humanistic Literacy    *Recommendation from major:* (sh counted under Non-Program or Free Elective categories)
- (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 Attribute<sup>2</sup>      *Recommendation from major:*

### Non-Program Courses (minimum 18 sh)

*Courses in this section cannot be in the major department.*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
PHYS 00220	Introductory Mechanics	Satisfies Scientific Literacy	Fall/2	>= D-	4
PHYS 00222, or PHYS 00221 or CS 04225	Intro to Electricity & Magnetism, or Intro to Thermodynamics, Fluids, Waves & Optics or Principles of Data Structures		Spr/2	>= D-	4, or 4 or 3
CS 04103	Computer Science and Programming		Fall/1	>= D- <sup>3</sup>	4
PHIL 09130	Intro to Symbolic Logic		Fall/1	>= C-	3
					Subtotal: 18 sh

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

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

<sup>3</sup> Students need a C- or better in CS 01104 to get into MATH 01332 (Numerical Analysis).

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## Major Requirements (42-43 sh)

### SUMMARY OF MAJOR REQUIREMENTS

- 24 sh of Foundational Courses
  - 9 sh of Mid-Level Courses for the Comprehensive Concentration
  - 9-10 sh of Comprehensive Concentration Restricted Electives
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- 42-43 sh total

### FOUNDATIONAL COURSES

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
MATH 03150	Discrete Mathematics		Spr/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
STAT 02320	Concepts in Statistical Data Analysis		Spr/2	>= C-	3
MATH 01340	Modern Algebra I		Fall/3	>= C-	3
					Subtotal: 24 sh

### MID-LEVEL COURSES FOR THE COMPREHENSIVE CONCENTRATION

Course #	Course Name	Course Designations / Notes	Sem/Yr	Grade	Credits
MATH 01231	Ordinary Differential Equations		Spr/2	>= C-	3
MATH 01330	Introduction to Real Analysis I		Spr/3	>= C-	3
MATH 01498	Mathematics Seminar	Satisfies WI requirement	Spr/4	>= C-	3
					Subtotal: 9 sh

### COMPREHENSIVE CONCENTRATION RESTRICTED ELECTIVES

Choose Three of the following courses.

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
<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 01332	Numerical Analysis			>= C-	3
<input type="radio"/>	MATH 01341	Modern Algebra II			>= C-	3
<input type="radio"/>	MATH 01352	Theory of Numbers			>= C-	3
<input type="radio"/>	MATH 01354	Introduction to Topology			>= C-	3
<input type="radio"/>	MATH 01386	Introduction to Partial Differential Equations			>= C-	3
<input type="radio"/>	MATH 03400	Applications of Mathematics			>= 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
<input type="radio"/>	MATH 01421	Mathematics Field Experience			>= C-	3
<input type="radio"/>	MATH 01430	Introduction to Complex Analysis			>= C-	3
<input type="radio"/>	STAT 02360	Probability and Random Variables			>= C-	3
<input type="radio"/>	STAT 02361	Mathematical Statistics			>= C-	3
<input type="radio"/>	STAT 02371	Design of Experiments: Analysis of Variance			>= C-	3
					Subtotal: 9-10 sh	

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## Free Electives for this Major/Degree (50-51 sh)

*Students should choose Free Electives that satisfy any Rowan Core or Rowan Experience requirements that are not fulfilled by Major or Non-Program courses.*

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits

Subtotal: 50-51 sh

Total Program Credits Required for this Major / Degree: 120 SH