B.S. in Geology

Academic Program Guide for **New Students** (Effective Spring 2025; Degree requirements revised and approved December 2020, and implemented September 2021)

Department of Geology (geology@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) 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 D or better in all courses satisfying Non-Program and a grade of a C or better for Major requirements.

Rowan Core Requirements[1]

*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: *Must be met by one of the following two courses or their official equivalents:*
◯ STAT 02260 Statistics I (3 sh) ◯ MATH 01130 Calculus I (4 sh)

◯ (SCIL) Scientific Literacy: *Must be met by one of the following two courses or their official equivalents:*
◯ BIOL 01104 Introduction to Evolution and Scientific Inquiry (4 sh) ◯ PHYS 00211 Physics II (4 sh)

Subtotal of credits counted in this section: minimum 25 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:* Suggestion for 2020-2021 coming soon.

◯ (RS) Rowan Seminar Attribute[2] *Recommendation from major:*

Non-Program Courses (20-21 sh)

Courses in this section cannot be in the major department.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
STAT 02260 or MATH 01130	Statistics I or Calculus I	Whichever was not used to satisfy Quantitative Literacy			3 - 4
CHEM 06100	Chemistry I				4
CHEM 06101	Chemistry II				4
PHYS 00210	Physics I				4
				Subtotal: 16-17 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.

B.S. in Geology

Major Requirements (64-65 sh)

Summary of Major Requirements

- 8 sh of Year-One Required Courses
- 16 sh of Year-Two Required Courses
- 11 sh of Year-Three Required Courses
- 6 sh of Year-Four Required Courses
- 11-12 sh of Required Bank Courses
- 12 sh of Geology Electives
- 64-65 sh total

Year-One Required Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
GEOL 01101	Physical Geology				4
GEOL 01102	Earth Through Time				4
				Subtotal: 8 sh	

Year-Two Required Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
GEOL 01201	Mineralogy and Petrology	Prereq. GEOL 01101			4
GEOL 01210	Invertebrate Paleontology	Prereq. GEOL 01102			4
GEOL 01230	Paleoclimatology	Prereq. GEOL 01101			4
GEOL 01240	Introduction to Field Methods in Geology	Prereq. GEOL 01101			4
				Subtotal: 16 sh	

Year-Three Required Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
GEOL 01320	Sedimentology and Stratigraphy	Prereq. GEOL 01101			4
GEOL 01340	Tectonics and Structural Geology	Prereq. GEOL 01101			4
GEOL 01400	Practical Experience in Geology	Prereq. B.A./B.S. student in Geology			3
				Subtotal: 11 sh	

Year-Four Required Courses

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
GEOL 01450	Senior Seminar in Geology	Prereq. B.A./B.S. student in Geology			2
GEOL 01460	Current Research in Geology	Prereq. B.A./B.S. student in Geology			2
GEOL 01470	Research Experience in Geology	Prereq. B.A./B.S. student in Geology and Permission of instructor			2
				Subtotal: 6 sh	

Required Geology Bank Courses

Choose one course from each of the following three course banks (Global Climate Change, Paleontology, Physical Geology) at the 200 level or above for a total of 11-12sh. If you wish to earn a concentration, it is recommended to select course(s) that also align with the requirements for that concentration.

***Bank 1– Global Climate Change**: choose 1 course from the following bank at the 200 level or above:*

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01131	Earth in Transition: The Science Behind Global Climate Change				3
◯	GEOL 01133	Climate, Catastrophes, Civilization, and Collapse				3
◯	GEOL 01136	Water Planet: Exploring the Hydrosphere				3
◯	GEOL 01250	Ocean-Atmosphere Interactions	Prereq. GEOL 01101 & GEOL 01102; PHYS 00150 or PHYS 00210			4
◯	GEOL 01331	Climate Change and the Cryosphere	Prereq. GEOL 01131 or GEOL 01101			4
◯	GEOL 01430	Climate Variability and Diagnostics	Prereq. GEOL 01101 & GEOL 01230			4
◯	GEOL 01435	The Ice Ages and Quaternary Geology	Prereq. GEOL 01101 & GEOL 01102			4

B.S. in Geology

						Subtotal: 4 sh

Bank 2– Paleontology*: choose 1 course from the following bank at the 200 level or above:*

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01110	Dinosaurs and Their World				3
◯	GEOL 01111	Edelman Fossil Park Experience				4
◯	GEOL 01112	Motion of Life				3
◯	GEOL 01310	Geological Laboratory Techniques	Prereq. GEOL 01102			4
◯	GEOL 01311	Vertebrate Paleontology	Prereq. GEOL 01102			4
◯	GEOL 01312	Dinosaur Paleontology	Prereq. GEOL 01102			4
◯	GEOL 01303	Breathing Life into Fossils: The Science of Paleoart				4
◯	GEOL 01410	Taphonomy	Prereq. GEOL 01102			4
◯	GEOL 01411	Paleoecology	Prereq. GEOL 01102			4
◯	GEOL 01412	Macroevolution in the Fossil Record	Prereq. GEOL 01210			4
◯	GEOL 01413	Paleobiology	Prereq. GEOL 01102			4
						Subtotal: 4 sh

Bank 3– General Geology*: choose 1 course from the following bank at the 200 level or above:*

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01120	Earthquakes and Volcanoes				3
◯	GEOL 01150	Voyager: The Exploration of Space				3
◯	GEOL 01301	Advanced Field Methods	Prereq. GEOL 01240			4
◯	GEOL 01310	Geological Laboratory Techniques	Prereq. GEOL 01102			4
◯	GEOL 01321	Basin Analysis	Prereq. GEOL 01101			4
◯	GEOL 01350	Advanced Petrology	Prereq. GEOL 01201			4
◯	GEOL 01353	Geochemistry	Prereq. GEOL 01201			4
◯	GEOL 01431	Hydrogeology	Prereq. GEOL 01101			4
◯	GEOL 01432	Tectonic-Scale Climate Change	Prereq. GEOL 01230			3
◯	GEOL 01440	Geochronology and Thermochronology	Prereq. GEOL 01101			4
◯	GEOL 01445	Glacial Geology	Prereq. GEOL 01102 & GEOL 01230			4
◯	GEOL 01455	Cosmochemistry				4
						Subtotal: 3-4 sh

Geology Concentration Electives

Choose one concentration and complete the specified courses as listed below.

General Geology Concentration *(12 sh):*

Choose any 12 sh from <u>any of the above course banks or the following courses</u> not assigned to a course bank. If a concentration is desired, students should take the courses as specified below under Geology Concentration Electives.

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01105	Selected Topics in Geology				3
◯	GEOL 01260	Introduction to Research in Geology				2
◯	GEOL 01303	Advanced Topics in Geology				4
◯	GEOL 01471	Advanced Research Experience in Geology	Prereq. GEOL 01470			2
◯	GEOL 01480	Professional Development in Geology	Prereq. GEOL 01320 and GEOL 01340			1
						Subtotal: 12 sh

Paleontology Concentration *(one required course, plus any 3 of the electives listed below):*

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01311	Vertebrate Paleontology	Prereq. GEOL 01102			4
		Choose a minimum of 12 sh from the following bank:				
◯	GEOL 01310	Geological Laboratory Techniques	Prereq. GEOL 01102			4
◯	GEOL 01312	Dinosaur Paleontology	Prereq. GEOL 01102			4

B.S. in Geology

◯	GEOL 01410	Taphonomy	Prereq. GEOL 01102			4
◯	GEOL 01411	Paleoecology	Prereq. GEOL 01102			4
◯	GEOL 01412	Macroevolution in the Fossil Record	Prereq. GEOL 01210			4
◯	GEOL 01413	Paleobiology	Prereq. GEOL 01102			4
					Subtotal: 16 sh	

Global Climate Change: A Geologic Perspective *(2 required courses, plus electives totaling a minimum of 12 sh):*

	Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
◯	GEOL 01131	Earth in Transition: The Science Behind Global Climate Change				3
◯	GEOL 01432	Tectonic-Scale Climate Change	Prereq. GEOL 01230			3
	Choose a minimum of 6 sh from the following bank:					
◯	GEOL 01133	Climate, Catastrophes, Civilization, and Collapse				3
◯	GEOL 01250	Ocean-Atmosphere Interactions	Prereq. GEOL 01101 & GEOL 01102; PHYS 00150 or PHYS 00210			4
◯	GEOL 01303	Advanced Topics in Geology	Prereq. GEOL 01102			3
◯	GEOL 01430	Climate Variability and Diagnostics	Prereq. GEOL 01131 & CS 01104 & MATH 01130 & GEOL 250			4
◯	GEOL 01435	The Ice Ages and Quaternary Geology	Prereq. GEOL 01101 & GEOL 01102			4
◯	GEOL 01470	Research Experience in Geology				2
					Subtotal: 12-17 sh	

Free Electives for this Major/Degree (8-11 sh)

Students should choose Free Electives that are not fulfilled by Major or Non-Program courses.

Course #	Course Name	Course Attributes / Notes	Sem/Yr	Grade	Credits
				Subtotal: 8-11 sh	

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