GEOSCIENCE, CERTIFICATE

HOW TO GET IN

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Students interested in declaring the certificate should contact the Geoscience Certificate Committee chair.

Students declared in the Certificate in Geoscience cannot also declare the Geology and Geophysics major.

REQUIREMENTS

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The Certificate in Geoscience requires a minimum of four courses and at least 12 total credits. Students must complete a unique course to satisfy each requirement.

Code	Title	Credits
Introductory Course		
Complete one course from:		
GEOSCI 100	Introductory Geology: How the Earth Works	3
GEOSCI/ATM OCN/ ENVIR ST 102	Climate and Climate Change	3
GEOSCI/ ATM OCN 105	Survey of Oceanography	3-4
GEOSCI/ ENVIR ST 106	Environmental Geology	3
GEOSCI 109	Three billion years beneath your feet: Geology of the National Parks	3
GEOSCI 110	Evolution and Extinction	4
GEOSCI/ ATM OCN 140	Natural Hazards and Disasters	3
ATM OCN 100	Weather and Climate	3
ATM OCN 101	Weather and Climate	4
ATM OCN/ ENVIR ST 171	Global Change: Atmospheric Issues and Problems	3
Geoscience Core		
Complete one course from:		
GEOSCI 202	Introduction to Geologic Structures	4
GEOSCI 203	Earth Materials: A Systems Approach	4
GEOSCI 204	Geologic Evolution of the Earth	4
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI/G L E 360	Principles of Mineralogy	3
GEOSCI 375	Principles of Geochemistry	3
GEOSCI/G L E 455	Structural Geology	4
GEOSCI/CIV ENGR/ G L E/M S & E 474	Rock Mechanics	3
Specialization		
Complete one course from any area:		
Environmental Geoscience		
GEOSCI 304	Geobiology	3
GEOSCI 314	Course GEOSCI 314 Not Found	3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI 340	Geoscience Data Analysis	3
GEOSCI/ ATM OCN 353	Programming for Earth Scientists	3
GEOSCI 375	Principles of Geochemistry	3
GEOSCI 430	Sedimentology and Stratigraphy	3
GEOSCI 551	Paleoceanography	3
GEOSCI/G L E 627	Hydrogeology	3-4
GEOSCI/G L E 629	Contaminant Hydrogeology	3
Geology		
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI 340	Geoscience Data Analysis	3
GEOSCI/G L E 350	Introduction to Geophysics: The Dynamic Earth	3
GEOSCI/ ATM OCN 353	Programming for Earth Scientists	3
GEOSCI/G L E 360	Principles of Mineralogy	3
GEOSCI/G L E 370	Elementary Petrology	3
GEOSCI 375	Principles of Geochemistry	3
GEOSCI/GEOG 420	Glacial and Pleistocene Geology	3
GEOSCI 430	Sedimentology and Stratigraphy	3
GEOSCI/G L E 455	Structural Geology	4
Geophysics		
GEOSCI 340	Geoscience Data Analysis	3
GEOSCI/G L E 350	Introduction to Geophysics: The Dynamic Earth	3
GEOSCI/ ATM OCN 353	Programming for Earth Scientists	3
GEOSCI/G L E 455	Structural Geology	4
GEOSCI/CIV ENGR/ G L E/M S & E 474	Rock Mechanics	3
GEOSCI/G L E 594	Introduction to Applied Geophysics	3
GEOSCI/G L E 596	Geomechanics	3
GEOSCI/G L E 627	Hydrogeology	3-4
Ice and Climate		
GEOSCI 314	Course GEOSCI 314 Not Found	3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI 340	Geoscience Data Analysis	3
GEOSCI/ ATM OCN 353	Programming for Earth Scientists	3
GEOSCI/GEOG 420	Glacial and Pleistocene Geology	3
GEOSCI 551	Paleoceanography	3
ATM OCN/ ENVIR ST/ GEOG 322	Polar Regions and Their Importance in the Global Environment	3
ATM OCN/ ENVIR ST/ GEOG 332	Global Warming: Science and Impacts	3
ATM OCN 425	Global Climate Processes	3
Paleontology		

GEOSCI 304	Geobiology	3
GEOSCI 430	Sedimentology and Stratigraphy	3
ZOOLOGY 275	Biology of the Dinosaurs	3
ZOOLOGY/ ENVIR ST/ F&W ECOL 360	Extinction of Species	3
Geoscience Elective		
Complete one course from:		
GEOSCI 202	Introduction to Geologic Structures	4
GEOSCI 203	Earth Materials: A Systems Approach	4
GEOSCI 204	Geologic Evolution of the Earth	4
GEOSCI 304	Geobiology	3
GEOSCI 314	Course GEOSCI 314 Not Found	3
GEOSCI/GEOG 320	Geomorphology	3
GEOSCI/ATM OCN/ ENVIR ST/ GEOG 335	Climatic Environments of the Past	3
GEOSCI 340	Geoscience Data Analysis	3
GEOSCI/G L E 350	Introduction to Geophysics: The Dynamic Earth	3
GEOSCI/ ATM OCN 353	Programming for Earth Scientists	3
GEOSCI/G L E 360	Principles of Mineralogy	3
GEOSCI/G L E 370	Elementary Petrology	3
GEOSCI 375	Principles of Geochemistry	3
GEOSCI/ ENVIR ST 411	Energy Resources	3
GEOSCI/GEOG 420	Glacial and Pleistocene Geology	3
GEOSCI 430	Sedimentology and Stratigraphy	3
GEOSCI/G L E 455	Structural Geology	4
GEOSCI/CIV ENGR/ G L E/M S & E 474	Rock Mechanics	3
GEOSCI/ ZOOLOGY 542	Invertebrate Paleontology	3
GEOSCI 551	Paleoceanography	3
GEOSCI/G L E 594	Introduction to Applied Geophysics	3
GEOSCI/G L E 596	Geomechanics	3
GEOSCI/G L E 627	Hydrogeology	3-4
GEOSCI/G L E 629	Contaminant Hydrogeology	3

RESIDENCE AND QUALITY OF WORK

- Minimum 2.000 GPA on all certificate courses.
- At least 6 certificate credits must be completed in residence.

CERTIFICATE COMPLETION REQUIREMENT

This undergraduate certificate must be completed concurrently with the student's undergraduate degree. Students cannot delay degree completion to complete the certificate.

LEARNING OUTCOMES

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1. Explain how various Earth systems operate and describe the basis for that understanding. Earth systems include plate tectonics, climate, the hydrological cycle, geochemical cycling, and others.
2. Apply field/lab-based methods, spatial reasoning skills, temporal reasoning skills, and/or quantitative approaches to solve problems in geoscience.
3. Analyze geological, biological, chemical, and/or physical information to understand processes and the rates of those processes, in order to explain how the Earth operates.

ADVISING AND CAREERS

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STUDY ABROAD

Learning in Letters & Science emphasizes discovery, growth, understanding different perspectives, and challenging yourself, which makes studying abroad an excellent fit for many L&S students: studyabroad.wisc.edu (https://studyabroad.wisc.edu/)

As a university with global influence, we have more than 300 study abroad programs (https://studyabroad.wisc.edu/programs/) in over 80 countries. These vary in length, academic focus, teaching format, language requirements, cost, and level of independence. There are many programs to complement every major (https://studyabroad.wisc.edu/academics/major-advising-pages-maps/) and any year of college (including the final semester)—and all meet UW–Madison's high academic standards. Students admitted into Letters & Science can even choose a short program in the summer before they start college or their whole first year: studyabroad.wisc.edu/launch (http://studyabroad.wisc.edu/launch/). Talk with your academic advisor about how studying abroad might fit with your academic plan.

SUCCESSWORKS

SuccessWorks (https://successworks.wisc.edu/) at the College of Letters & Science helps you turn the academic skills learned in your classes into a fulfilling life, guiding you every step of the way to securing jobs, internships, or admission to graduate school.

Through one-on-one career advising, events, and resources, you can explore career options, build valuable internship and research experience, and connect with supportive alumni and employers who open doors of opportunity.

- What you can do with your major (https://successworks.wisc.edu/what-you-can-do-with-your-major/) (Major Skills & Outcomes Sheets)
- Make a career advising appointment (https://successworks.wisc.edu/make-an-appointment/)
- Learn about internships and internship funding (https://successworks.wisc.edu/finding-a-job-or-internship/)
- Try "Jobs, Internships, & How to Get Them," (https://successworks.wisc.edu/canvas/) an interactive guide in Canvas for enrolled UW–Madison students