



Geography (GEOG) 365

Atmosphere, Weather, and Climate (Revision 8)

Status:

Replaced with new revision, see the [course listing](#) for the current revision

Delivery mode:

[Individualized study online](#) with a [Home Lab](#). This course is charged a [lab fee](#).
Delivered via Brightspace.

Credits:

3

Area of study:

Science

Prerequisites:

[GEOG 265](#) or equivalent is recommended but not required.

Precluded:

None

Challenge:

GEOG 365 has a challenge for credit option.

Faculty:

[Faculty of Science and Technology](#)

Notes:

[Centre for Science](#)

Overview

Geography 365: Atmosphere, Weather, and Climate is a three-credit course in meteorology, the atmospheric science that makes the news and impacts everyone's life every day. This course is built around widely adopted and acclaimed instructional materials designed by the American Meteorological Society and the Cooperative Program for Operational Meteorology, Education and Training. This course is a study of the fundamentals of meteorology, with examples drawn from all around the globe, but it focuses primarily on the extremely diverse weather of North America.

GEOG 365 introduces the physical principles and processes that govern Earth's atmosphere; the nature of weather and climate; the formation of weather systems, including severe weather; and important aspects of weather monitoring, analysis, and forecasting. GEOG 365 includes a home-lab component, which involves completing a set of applied investigations of atmospheric concepts and data, as well as quantitative exercises with varying degrees of mathematical difficulty using both metric and imperial units.

Outline

GEOG 365 comprises the following 15 units:

- Unit 1: Monitoring the Weather
- Unit 2: Origin, Composition, and Structure of the Atmosphere
- Unit 3: Solar and Terrestrial Radiation
- Unit 4: Heat, Temperature, and Atmospheric Circulation
- Unit 5: Air Pressure
- Unit 6: Humidity, Saturation, and Stability
- Unit 7: Clouds, Precipitation, and Weather Radar
- Unit 8: Wind and Weather
- Unit 9: General Circulation of the Atmosphere
- Unit 10: Midlatitude Weather Systems
- Unit 11: Thunderstorms and Tornadoes

- Unit 12: Tropical Weather Systems
- Unit 13: Weather Analysis and Forecasting
- Unit 14: Light and Sound in the Atmosphere
- Unit 15: Climate and Climate Change

Evaluation

To **receive credit** [↗](#) for GEOG 365, you must achieve a course composite grade of at least a **D (50 percent)** [↗](#). You must achieve a minimum grade of 60 percent on the final examination. You must complete and submit all of the assignments, quizzes, and case studies, and achieve a minimum grade of 40 percent on each to receive credit for the course. The weighting of the composite grade is as follows:

Activity	Weight
Fifteen (15) Lab Assignments (2% each)	30%
Fifteen (15) Timed Quizzes (1% each)	15%
Two (2) Weather Case Studies (12.5% each)	25%
Final Exam	30%
Total	100%

The **final examination** for this course must be requested in advance and written under the supervision of an AU-approved exam invigilator. Invigilators include either ProctorU or an approved in-person invigilation centre that can accommodate online exams. Students are responsible for payment of any invigilation fees. Information on exam request deadlines, invigilators, and other exam-related questions, can be found at the **Exams and grades** [↗](#) section of the Calendar.

Note that students may complete the weather case studies independently or in pairs.

A bonus mark up to a maximum of 6% will be granted for completing optional math exercises in the lab assignments.

Materials

Digital course materials

Links to the following course materials will be made available in the course:

Mills, E. W. (Ed.). (2020). *Weather studies: Introduction to atmospheric science* (7th ed.). American Meteorological Society.

American Meteorological Society. (2024). *Weather studies eInvestigations manual: 2024–2025 & summer 2025*. American Meteorological Society.

Contact the **Course Professor** [↗](#) for more information on a printed version of the textbook *eInvestigations Manual*.

Challenge for credit

Overview

The challenge for credit process allows you to demonstrate that you have acquired a command of the general subject matter, knowledge, intellectual and/or other skills that would normally be found in a university-level course.

Full information about **challenge for credit** [↗](#) can be found in the Undergraduate Calendar.

Evaluation





To **receive credit** [↗](#) for the GEOG 365 challenge registration, you must achieve a minimum grade of 60 percent on the examination and a minimum grade of 50 percent on the weather case studies. The weighting of the composite grade is as follows:

Activity	Weight
Two (2) Weather Case Studies (20% each)	40%

Activity	Weight
Challenge Exam	60%
Total	100%

 [Challenge for credit course registration form](#)

Important links

- > [Academic advising](#) 
- > [Program planning](#) 
- > [Request assistance](#) 
- > [Support services at AU](#) 

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

Opened in Revision 8, August 9, 2024

Updated August 8, 2025

View [previous revision](#) 