

**SIM-UB Undergraduate Program**  
***GEO 101: Earth Systems Science***  
***Spring 2024***

**Course Outline**

Instructor: Justin Holman  
Class Day/Time: Tuesdays & Thursdays; 12:00 - 1:30 p.m.  
Classroom: Please refer to electronic signboard  
Office Hours: Tuesdays & Thursdays, 1:30 - 3:00 p.m.  
Office Location: Please refer to electronic signboard  
E-mail: [justin.holman@gmail.com](mailto:justin.holman@gmail.com)

**Required course materials:** *Introducing Physical Geography by Alan Strahler, 6th Ed.* In addition, students will read assigned articles, watch assigned documentaries and other videos, attend lectures, and participate in discussions.

**Course Description and Objectives:** Earth Systems Science introduces the main concepts related to modern environmental problems and investigates the complexity and interaction of physical, chemical and biological processes in the geosphere, atmosphere, hydrosphere, biosphere, and ecosphere. The goal of this class is student understanding of environmental processes and their local, regional, and global impacts on human life and society.

**Course Requirements:** Students will gain a better understanding of earth systems and physical geography through lectures, discussions, assigned readings and documentaries, and assessments. Attendance at lectures, participation in class discussion, and completion of assignments is expected.

**Student Learning Outcomes:**

Successful completion of this course, participation in the lectures and class discussions, and completion of assignments and assessments will provide students with knowledge about methods that scientists use to study Earth Systems Science. It will also include student examination and understanding of modern environmental problems. It will discuss the ever-changing nature of the Earth's systems due to interactions between geology, the atmosphere, ocean, and biosphere. It includes key examples of how Earth Systems Science as a discipline is key to understanding the Earth's diverse environments and how they are impacted by global change.

**Assessments:**

Attendance & Participation (10%)  
Midterm Exam 1 (30%)  
Midterm Exam 2 (30%)  
Final Exam (30%)

**Grading:**

<b><u>UB Letter Grade</u></b>	<b><u>% Equivalent</u></b>	<b><u>Interpretation</u></b>
A	93.0 - 100.0	High Distinction
A-	90.0 - 92.9	High Distinction
B+	87.0 - 89.9	Superior
B	83.0 - 86.9	Superior
B-	80.0 - 82.9	Superior
C+	77.0 - 79.9	Average
C	73.0 - 76.9	Average
C-	70.0 - 72.9	Average
D+	67.0 - 69.9	Minimal Passing Grade

D	60.0 - 66.9	Minimal Passing Grade
F1	0.00 - 59.9	Failure*
F2		Failure**
F3		Failure, no participation

\*participated after the 60% of the session

\*\*started participating but stopped before the 60% point of the session

**Incomplete Grades:** Under certain circumstances (e.g. extended hospitalization), students may apply for a grade of Incomplete. See the UB catalog for details of the Incomplete grade policy and requirements at:

<https://catalog.buffalo.edu/policies/explanation.html>

Request for an Incomplete grade must be made prior to the end of the semester. Approval is not automatic, must be supported by robust relevant documentation, and is at the discretion of the instructor.

**Classroom Policies:** Professional behavior is expected at all times. Disruptive behavior in the classroom will not be tolerated. Anyone causing a disturbance will be asked to leave.

#### **General UB Program Policies**

Attendance and active participation is expected by all students in every class. Students are expected to be present for the entire duration of each class. Tardiness to or absencing oneself during class will result in a deduction from the attendance and participation portion of the final grade.

Late assignments, if accepted, will be penalized.

Students who are absent from one of the two **midterm exams** must request a make up exam from the course instructor; a make up will be given only if there is an appropriate, documented reason for absence from the exam (such as an MC); any disputes regarding the validity of the reason or the documentation may be referred to the student advisor.

Students who are absent from a **final exam** must formally request a make up exam in writing to the SIM-UB Assistant Resident Director, within 24 hours of the original exam start time. The make up exam request form can be found in SIMConnect. In all cases, supporting documents must be provided and a make-up exam will only be scheduled if there is a valid and appropriate reason for the absence. For example, prior commitments to external activities or events outside of SIM are not considered a valid reason for absence. For medical cases, students must submit a detailed letter from the doctor, highlighting the date of the medical consultation, the nature and the severity of the illness, and how the illness prevented them from taking the scheduled exam, in addition to a Medical Certificate (MC). **A Medical Certificate alone will not be accepted for make-up final exams.** Disputes may be referred to the Resident Director.

There will be no make ups for other course assessments, and students who are absent from such assessments will receive a zero.

#### **UB Statement of Principle on Academic Integrity:**

The University at Buffalo has a responsibility to promote academic honesty and integrity and to develop procedures to deal effectively with instances of academic dishonesty. Students are responsible for the honest completion and representation of their work, for appropriate citation of sources, and for respect for others' academic endeavors. By placing their name on academic work, students certify the originality of all work not otherwise identified by appropriate acknowledgements.

Additionally, students are expected to understand and abide completely by the following guidelines for academic integrity in all UB courses:

Plagiarism, cheating, and other incidents of academic dishonesty will result in an **automatic failing grade for the course**. Depending on the severity of the violation, your case may also be reported to UB for further investigation and may result in expulsion from the university.

Plagiarism consists of copying work from another source without giving proper citations. You must not copy information from printed materials, internet sources, or from the work of other students. If you are uncertain about how to submit your work correctly, consult the instructor immediately.

Any claim of ignorance of the rules of academic integrity by any student is unacceptable.

See the policy here: [Undergraduate Academic Integrity Policy](#)

**Reasonable Accommodations and Accessibility Resources for Students with Disabilities**

Reasonable Accommodation refers broadly to reasonable modifications of policies, practices, and procedures as necessary to ensure that persons with disabilities have the same opportunities as others in all programs, services, and benefits of the University at Buffalo. Anyone with a disability who needs reasonable accommodations in the SIM-UB Program should refer to the Student Handbook (available online via SIMConnect) for further information, or consult the Resident Director.

**Syllabus**

Week	Date	Topic	Textbook	Assessment
1	1/23 1/25	Introduction and the Geogrid Cartography/Visualization	Ch. 1	
2	1/30 2/1	Solar Orbit Solar Radiation	Ch. 2	
3	2/6 2/8	Air Temperature Global Warming	Ch. 3	
4	2/13 2/15	Review for Exam 1 Exam 1		X
5	2/20 2/22	Humidity and Adiabatic Processes Precipitation	Ch. 4	
6	2/27 2/29	Wind and Ocean Circulation Tropical Cyclones	Ch. 5-6	
7	3/5 3/7	Climatology Climate Classification	Ch. 7	
8	3/12 3/14	Review for Exam 2 Exam 2		X
9	3/19 3/21	Plate Tectonics Earthquakes & Volcanoes	Ch. 11-12	
10	3/26 3/28	No class (term break) No class (term break)		

11	4/2 4/4	Geomorphology Landforms	Ch. 15-16	
12	4/9 4/11	Biogeography Biomes	Ch. 8-9	
13	4/16 4/18	IPCC 6th Assessment 2023 Synthesis Report		
14	4/23	<b>Wrap-up &amp; Review</b>		
15	TBA	<b>Final Exam</b>		<b>X</b>

**Disclaimer:** The instructor reserves the right to alter the course schedule and format of the exams asis deemed necessary, with appropriate advanced notice to the students.