

**EAS 1600: Introduction to Environmental Science  
(4 Credit Hours)  
Summer 2022**

**Course Lecture Meeting Times:** Tues. & Thurs. 9:30-11:40 AM EDT  
**Course Lecture Location:** G021 MoSE Building

**Instructor Information:**

Dr. Samantha Wilson  
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Office Hours: By appointment (in-person or virtual)

Dr. Zachary Handlos  
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Office Hours: By appointment (in-person or virtual)

**Lecture TA:** Nan Xie  
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**TA Office Hours:** By appointment (in-person or virtual)

**Lab Coordinator:** Shelby Ellis  
**Email:** saellis@gatech.edu  
**Office Hours:** By appointment (in-person or virtual)

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**\*\*\*COVID-19 Statement\*\*\***

If you are experiencing a fever (i.e., temperature over 100°F), cold-like symptoms, sore throat, dry cough, flu or any other type of illness, DO NOT COME TO CLASS. Please inform the course instructor ASAP if you will miss class due to illness.

Please complete the following daily COVID-19 checklist every day prior to attending class: [https://health.gatech.edu/sites/default/files/images/daily\\_checklist.pdf](https://health.gatech.edu/sites/default/files/images/daily_checklist.pdf). If you said “yes” to any of the checklist items, stay home or get off of campus ASAP.

If you test positive for COVID-19 and/or have COVID-19-like symptoms, please read the “If you Get Sick” section at this link here, and follow ALL directions: <http://health.gatech.edu/coronavirus/campus-guidelines>

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**Introduction**

Nearly all scientists have come to a consensus that Earth’s climate is changing and will continue to change in the future, and anthropogenic (i.e., human) activity is primarily responsible for these observed and predicted changes. Understanding Earth’s environment requires understanding how the whole Earth functions as a system. We will begin by considering external influences on

Earth’s environment and reviewing the systems approach for studying interrelated phenomena, as well as the basic physics needed for such studies. We will then investigate four components of the Earth system in detail: the atmosphere, the oceans, the solid Earth, and the biosphere. We will explore how each component interacts with the others and how these processes control Earth’s climate. We will finish with a discussion of modern anthropogenic climate change. By the end of the course, students will understand the processes by which the dynamic Earth system operates and will be able to critically evaluate the various natural and anthropogenic influences on the environment. Through the laboratory sessions and lectures, students will develop an understanding of the scientific method, communicate scientific information to peers, analyze data, and implement ideas.

**Course Topics**

- Planetary Processes
- Atmosphere
- Hydrosphere
- Lithosphere
- Biosphere
- Chemical Cycles
- Climate

**Recommended Textbook (not required!)**

*Kump, L. R., Kasting, J. F., and Crane, R. G., (2010): The Earth System, 3<sup>rd</sup> Edition, Pearson; ISBN-13: 978-0321597793.*

**Attendance**

**This is an in-person course. We will not be recording lectures.** Any virtually taught class periods will be at the discretion of the course instructors.

If you think that you will miss a significant number of class periods this summer due to travel, job/career, etc..., you may wish to consider enrolling in a different course.

If you cannot attend one or more lectures due to ANY illness (including COVID-19), a family emergency or another emergency circumstance, **please contact the instructor within 24 hours of the class day you are expected to miss.** Please also contact the Division of Student Life about any expected absences so that all course instructors are notified of your absence.

If we do not hear from you until several days after a missed class, we will not be able to help with any missed attendance, activities, etc... (unless notified appropriately).

**Grading**

<b>Quizzes</b>	Please see description below	40%
<b>Participation Activities</b>	In-Class participation activities	30%
<b>Labs</b>	Average of lab scores	30%
<b>Course Total</b>		<b>100%</b>

**Quizzes (40% of Grade)**

There will be 6 total quizzes administered during this course, where each quiz reviews recent topics discussed in class. Your lowest quiz grade will be dropped. The last quiz will be completed during the course final exam day and time.

**Participation Activities (30% of Grade)**

Every week, there will be at least one participation exercise. These exercises will vary between completing practice problems related to quizzes to other activities requiring you to conduct a more in-depth investigation of topics relevant to this course.

Participation activities require you to attend class in-person (unless otherwise arranged with the instructors).

**Labs (30% of Grade)**

See the lab syllabus posted on the lab Canvas page regarding lab grading and expectations.

**Grading Scale**

Grade	Percentage
A	100 – 90.0
B	89.9 – 80.0
C	79.9– 70.0
D	69.9 – 60.0
F	<60

**Grade Curve**

Depending on the distribution of student scores at the end of the course, the scores may be curved to reflect the scale described above (up to the instructor’s discretion).

Note: If taking this course as pass/fail, a “passing” grade requires achieving a C or higher.

**Late Policy**

For each day that an assignment is late, 10% of your total score will be deducted. If the assignment is more than 3 days late, a “0” score will be provided. Exceptions will apply (due to ANY illness, family emergency, or other emergency matters) with communication of at least 24 hours in advance of assignment due date.

**Academic Honor Code**

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. The instructor, teaching assistants and students in this class, as members of the Georgia Tech community, are bound by the Georgia Tech Academic Honor Code. Please see <https://catalog.gatech.edu/policies/honor-code/> for Georgia Tech’s Academic Honor Code, which you are required to uphold.

Cheating will not be tolerated in this course. Cheating includes the following: 1) copying answers from another student, 2) using unauthorized resources to study for course quizzes and

assessments, which includes the use of electronic devices, 3) posting solutions to course quizzes and other assignments on the Internet, and/or 4) any other activity that would be considered “academic misconduct”.

Students will be asked to acknowledge their acceptance of this stipulation and their willingness to abide by all terms of the honor code on all quizzes. Any student suspected of cheating or plagiarizing on a quiz or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty.

**\*\*\*To summarize, do not cheat; it is not worth jeopardizing your future.\*\*\***

### Access and Accommodations:

If you anticipate or experience physical or academic barriers based on disability, you are welcome to let me know so that we can discuss options. You are also encouraged to contact the Office of Disability Services to explore reasonable accommodations.

The Office of Disability Services can be contacted by:

Phone: **404-894-2563**

Email: [dsinfo@gatech.edu](mailto:dsinfo@gatech.edu)

Website: <https://disabilityservices.gatech.edu/>

### Resources:

#### Academic Support

- [Center for Academic Success](#)
  - [1-to-1 tutoring](#)
  - [Peer-Led Undergraduate Study \(PLUS\)](#)
  - [Academic coaching](#)
- Residence Life’s [Learning Assistance Program](#)
- [OMED Educational Services](#) – Group study sessions and tutoring programs
- [Communication Center](#) – Individualized help with writing and multimedia projects
- [Academic advisors](#) for your major

#### Personal Support

##### *Georgia Tech Resources*

- The [Office of the Dean of Students](#) | **404-894-6367** | 2<sup>nd</sup> floor, Smithgall Student Services Building; You also may request assistance [here](#)
- [Counseling Center](#) | **404-894-2575** | Smithgall Student Services Building 2<sup>nd</sup> floor
  - Services include short-term individual counseling, group counseling, couples counseling, testing and assessment, referral services, and crisis intervention.
  - *Students in crisis may walk in during business hours (8am-5pm, Monday through Friday) or contact the counselor on call after hours at 404-894-2204.*
- [Students’ Temporary Assistance and Resources \(STAR\)](#)
  - Can assist with interview clothing, food, and housing needs.
- [Stamps Health Services](#) | **404-894-1420**
- [OMED Educational Services](#) | **404-894-3959**
- [Women’s Resource Center](#) | **404-385-0230**
- [LGBTQIA Resource Center](#) | **404 385 4780**
- [Veteran’s Resource Center](#) | **404-385-2067**

- [Georgia Tech Police](#) | **404-894-2500**

*National Resources*

- The [National Suicide Prevention Lifeline](#) | 1-800-273-8255
  - Free and confidential support 24/7 to those in suicidal or emotional distress
- The [Trevor Project](#)
  - Crisis intervention and suicide prevention support to members of the LGBTQ+ community and their friends
  - Telephone | **1-866-488-7386** | 24 hours a day, 7 days a week
  - [Online chat](#) | 24 hours a day, 7 days a week
  - Text message | Text “START” to **687687** | 24hrs day, 7 days a week

**Course Schedule\***

<b>Date</b>	<b>Lecture #</b>	<b>Topic(s)</b>	<b>Kump Textbook</b>	<b>Quizzes (lowest quiz dropped)</b>	<b>Lab</b>
May 17	1	Global Change & Feedback Loops	Chpt 1 (1-5) & Chpt 2 (21-33)		<b>Lab 1: Math and Science Starter</b>
May 19	2	Feedbacks Loops & Albedo	Chpt 2 (21-33)		
May 24	3	Planetary Radiation	Chpt 3 (36-43)		<b>Lab 2: Daisyworld</b>
May 26	4	Earth's Energy Budget and Greenhouse Gases	Chpt 4 (68-75)	Quiz 1	
May 31	5	Earth Seasons & Net Radiation	Chpt 3 (44-48) & Chpt 4 (57-66)		<b>Lab 3: Earth's Temperature</b>
June 2	6	Atmosphere & Circulation	Chpt 4 (57-66)		
June 7	7	TBD	-		<b>Lab 4: Atmospheric Circulation</b>
June 9	8	Hydrologic Cycle & Water Contamination	Chpt 5 (84-106)	Quiz 2	
June 14	9	Water Contamination	-		<b>Lab 5: Hydrology</b>
June 16	10	Ocean Intro & Circulation	Chpt 5 (84-106)		
June 21	11	Ocean Circulation	Chpt 5 (84-106)		<b>Lab 6: Ocean Circulation</b>
June 23	12	ENSO	Chpt 5 (84-106)	Quiz 3	
June 28	13	Soils & Biosphere	Chpt 9 (176-188)		<b>Lab 7: Carbon Cycle</b>
June 30	14	Carbon Cycle	Chpt 8 (149-170)		
<b>July 5</b>		<b>NO CLASS: 4<sup>th</sup> of July Holiday</b>			
July 7	15	Carbon Cycle	Chpt 8 (149-170)		
July 12	16	Past Climate	Chpt 14 (272-282)	Quiz 4	<b>Lab 8: Paleoclimate and Early Earth; Introduction of Sea Level Rise Project</b>
July 14	17	Recent & Future Climate	Chpt 15 (309-320)		
July 19	18	Climate Change Impacts, Mitigation & Research	Chpt 16 (327-338)		<b>Lab 9: Sea Level Rise Project</b>
July 21	19	Climate Change Impacts, Mitigation & Research	Chpt 16 (327-338)	Quiz 5	
July 26	20	TBD	-		
Aug 1	Final Exam	Quiz 6 during Final Exam timeslot Monday, August 1 <sup>st</sup> , 2022 – 8:00 AM – 10:50 AM	-	Quiz 6	-

\*course schedule is subject to change