

## Course Information

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| Course Number: | GEOS 444                               |
| Course Title:  | Science and Politics of Climate Change |
| Section:       | 500                                    |
| Time:          | MWF 13:30-12:20pm                      |
| Location:      | OMB 103                                |
| Credit Hours:  | 3                                      |

## Instructor Details

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| Instructor:   | Dr. Julie Loisel   |
| Office:       | OMB 803-C  |
| Phone:        | 979-458-1272 (not recommended)                                 |
| E-Mail:       | <a href="mailto:julieloisel@tamu.edu">julieloisel@tamu.edu</a> |
| Office Hours: | M&W 12:20-1:00pm or by appointment                             |

## Course Description

The goal of this course is to provide each student with an open environment to learn and discuss the science and politics of climate change. The course is split into four topics: *Is the climate changing?* --> students gain a well-rounded understanding of the science that underpins climate change; *Do humans have anything to do with climate change?* --> students learn about the Anthropocene and the importance of carbon in our world; *Why is climate change a problem?* --> students analyze the ethics related to climate (in)action, how the issues are framed by different stakeholders, the potential consequences on Earth's systems and our civilization, and *Can we do anything about climate change?* --> students discover mitigation and adaptation solutions that have been put forward over the past decade.

## Course components

This course is composed of traditional lectures, student presentations, as well as time slots allocated for team work. You will receive a weekly email detailing our weekly activities and reminding you of important dates.

Weekly course material will be posted on Canvas at least one week ahead of time. This includes lectures to watch (if any), materials to read, and information regarding homework assignments. Whenever lectures or reading materials are posted online, you are expected to watch/read them and take notes prior to coming to class! This way, you'll be ready to ask questions about the lecture content and participate in our discussions and activities.

Hands-on activities will be performed in the classroom. These exercises are directly related to topics covered in the lectures and texts. These assignments will take many shapes, including paper/book

discussion, data analysis, redaction of short essays, and academic debates. You will submit your assignments through Canvas, unless otherwise specified.

### Course Prerequisites

GEOS210.

### Special Course Designation

N/A

### Course Learning Outcomes

General learning outcomes: (1) gain the scientific basis to analyze and critique policy issues related to climate change; (2) apply and understand the fundamental concepts of Earth system science and Geography; (3) explain and rationalize how to find, and assess, scientifically credible information; (4) communicate about Earth in a meaningful way, both in written and oral forms, (5) demonstrate the appropriate use of the scientific method (repeatable observations, testable hypotheses, multiple analytical tools, and data interpretation) to explore, describe, and learn about Earth's geosystems, and (6) solve problems through teamwork and data sharing.

Specific learning outcomes: (7) illustrate components of the Earth's carbon cycle; (8) quantitatively describe how addition of CO<sub>2</sub> to the atmosphere through burning fossil fuels influence the climate and (9) analyze figures to understand natural and human influences on our climate system.

### Textbook and/or Resource Materials

None.

### Grading Policy

**Grading:** exam and course grades are not negotiable. Your grade reflects your performance in this course. The grading scale follows the Texas A&M University grading system:

|                         |                |
|-------------------------|----------------|
| <b>A = Excellent</b>    | <b>90-100%</b> |
| <b>B = Good</b>         | <b>80-89%</b>  |
| <b>C = Satisfactory</b> | <b>70-79%</b>  |
| <b>D = Passing</b>      | <b>60-69%</b>  |
| <b>F = Failing</b>      | <b>00-59%</b>  |

**Evaluation:**

|                               |          |                           |
|-------------------------------|----------|---------------------------|
| Exams (2)                     | 20% each | 40% of final grade        |
| HW assignments (4)            | 05% each | 20% of final grade        |
| Book review/Discussion leader | 10%      | 10% of final grade        |
| Participation to discussions  | 03% each | 09% of final grade        |
| Mini-talk                     | 10%      | 10% of final grade        |
| United Nations packet         | 15%      | <u>15%</u> of final grade |
|                               |          | 104 points possible       |

**Feedback:** You can expect feedback and grades on assignments and exams within about one week of the submission deadline of those said assignments and exams. Grades and feedbacks will be uploaded on Canvas and made available to you.

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### Late Work Policy

Students seeking an **excused absence for an exam** must notify me in writing at least one week ahead of time. In cases where advance notification is not feasible, you must provide notification as soon as possible, and by the end of the second working day after the absence at the latest. If the absence is considered excused by the university (<http://student-rules.tamu.edu/rule07>), you will be able to make up the missed exam. At my discretion, the make-up exam might be in a different format than the original exam.

Students who submit **late assignments** will be penalized at a rate of 10% per day. For each assignment submitted through Canvas, **students are to save proof of submission**; this will ensure a fair grading of their assignment, should technological issues arise.

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### Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

### Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

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Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor” ([Student Rule 7, Section 7.4.1](#)).

“The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence” ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

## Academic Integrity Statement and Policy

***“An Aggie does not lie, cheat or steal, or tolerate those who do.”***

“Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one’s work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case” ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at [aggiehonor.tamu.edu](http://aggiehonor.tamu.edu).

## Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact the Disability Resources office on your campus (resources listed below) Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Disability Resources is located in the Student Services Building or at (979) 845-1637 or visit [disability.tamu.edu](http://disability.tamu.edu).

## Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

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With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University’s goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University’s [Title IX webpage](#).

### Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student’s academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing available resources and services on your campus.

Students who need someone to talk to can contact Counseling & Psychological Services (CAPS) or call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at [suicidepreventionlifeline.org](http://suicidepreventionlifeline.org).

### **Tentative Schedule (subject to change):**

| Dates   | Topics   | DUE: |
|---------|--|------|
| W 01/19 | Course introduction, Reading list, Intro to HW#1 |      |

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|--|---|------|
| F 01/21  | Writing day (no class): work on HW#1  | HW#1 |
| <b>Monday 01/24: Last day for Add/Drop (5pm)</b> |   |      |
| M 01/24  | The “discovery” of global warming and the state of the science                      |      |
| W 01/26  | Discussion HW#1 + Intro to HW#2   |      |
| F 01/28  | Writing day (no class): work on HW#2  | HW#2 |
| M 01/31  | Past climates, part 1 (tectonic and orbital controls on climate)                    |      |
| W 02/02  | Past climates, part 2 (past 1000 years)   |      |
| F 02/04  | Past climates, part 3 (past 100 years) + Discussion HW#2                            |      |
| M 02/07  | Causes and consequences of current climate change, part 1 (natural) + Intro to HW#3 |      |
| W 02/09  | Causes and consequences of current climate change, part 2 (human) + Intro to HW#4   |      |
| F 02/11  | Writing day (no class): work on HW#4  | HW#4 |
| M 02/14  | IPCC AR6 report: in-class reading and discussion of key sections, part 1            |      |
| W 02/16  | IPCC AR6 report: in-class reading and discussion of key sections, part 2            |      |
| F 02/18  | Writing day (no class): work on HW#3  | HW#3 |
| M 02/21  | <b>Exam #1</b>  |      |
| W 02/23  | From science to policy (and politics), part 1 (scientific uncertainties)            |      |
| F 02/25  | Prep for discussion #1 (no class)   |      |
| M 02/28  | <b>Discussion #1</b>  |      |
| W 03/02  | From science to policy (and politics), part 2 (perceptions and frames)              |      |
| F 03/04  | Prep for discussion #2 (no class)   |      |
| M 03/07  | <b>Discussion #2</b>  |      |
| W 03/09  | Climate change solutions + Introduction to Project Drawdown & Mini-talks            |      |
| F 03/11  | Prep for mini talks (no class)  |      |
| M 03/14  | SPRING BREAK – NO CLASS   |      |
| W 03/16  | SPRING BREAK – NO CLASS   |      |
| F 03/18  | SPRING BREAK – NO CLASS   |      |
| M 03/21  | <b>Mini talks</b>   |      |
| W 03/23  | <b>Mini talks</b>   |      |
| F 03/25  | <b>Mini talks</b>   |      |
| M 03/28  | From science to policy (and politics), part 3 (mitigation vs. adaptation)           |      |
| W 03/30  | From science to policy (and politics), part 4 (putting a price on carbon)           |      |
| F 04/01  | Prep for discussion #3 (no class)   |      |
| M 04/04  | <b>Discussion #3</b>  |      |
| W 04/06  | From science to policy (and politics), part 5 (achieving net-zero)                  |      |
| F 04/08  | <b>Exam #2</b>  |      |
| M 04/11  | Take-home messages, part 1  |      |

|   |   |           |
|---|---|-----------|
| W 04/13   | Take-home messages, part 2  |           |
| F 04/15   | READING DAY – NO CLASS  |           |
| M 04/18   | United Nations negotiations, part 1 (introduction to the project) |           |
| <b>Tuesday 04/19: Last day for Q-drop (5pm)</b> |   |           |
| W 04/20   | United Nations negotiations, part 2                               |           |
| F 04/22   | Prep day for the negotiations: no class                           |           |
| M 04/25   | United Nations negotiations, part 3                               |           |
| W 04/27   | United Nations negotiations, part 4                               |           |
| F 04/29   | United Nations negotiations, part 5                               |           |
| M 05/02   | United Nations negotiations, part 6                               |           |
| T 05/03   | United Nations negotiations, part 7                               | UN packet |