

Being Human in STEM

SCI 3900/HONOR 3990, Spring 2024 Syllabus

[updated 1/2/2024]

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We reserve the right to change the policies stated in this syllabus at some point in the semester. If we do make a change, we will announce it in class and post a Canvas announcement about it.

Teaching Team

Instructors

The course is taught by 3 co-instructors:

- Claudia De Grandi [lead] (Physics & Astronomy) claudia.degrandi@utah.edu
- Jordan Gerton (Physics & Astronomy) jordan.gerton@utah.edu
- Rodolfo Probst (SRI Fellow - Biology) rodolfo.probst@utah.edu

Community Engaged Learning Assistant (CELA): Jessica Venegas

How to communicate with us:

- Please email Dr. De Grandi for questions/concerns on course logistics, grading, etc. For all other enquiries, feel free to email any of the co-instructors.
 - Email us from your [Umail](#) account
 - Please include "HSTEM" in the subject line (in addition to the topic of the message) Expect a 24-48 hour turnaround time
 - If you don't hear from us after 2 days please email us again

Lauren's Promise: *We will listen and believe you if someone is threatening you.*

Quick Info on the Course

Class Meeting Time and Location

Tuesday and Thursday 2-3:55 pm in CSC 025 (link to campus map for Crocker Science Center [here](#))

- Tuesday: Generally devoted to class discussions of readings.
- Thursday: Geared to team project development, usually will include structured time for team projects.

Prerequisites

None. The course is aimed at students across STEM fields and those interested in social justice issues.

Expected Student Workload

3 credits = average of 9 hours of work per week.

- 4 hours a week in class (Tue and Thu)
- 5 hours outside of class divided roughly among:
 - Outside reading per week: 2-3 hours
 - Outside writing per week: 1-2 hours
 - Outside work on projects: 1-2 hours
- Note: The above represents an approximate breakdown of how you will spend your outside of class time, there will be variance throughout the semester.

Required Text

1. *How to Be an Antiracist* (Ibram X. Kendi). Available in the following format of your choice:
 - Online access available through the [Marriot Library](#)
 - Hard copies available at the [Campus bookstore](#) (\$20-25) or [online](#) (\$10-14 plus shipping)
 - We also have *some copies* we can loan out to you, email Claudia De Grandi claudia.degrandi@utah.edu before or during the first week of class if you want to borrow a copy
 - Audible versions of the book are also available online at [Amazon](#) or other websites
2. Additional required readings will be available on Canvas at least a week in advance.
 - We will provide PDF copies of articles and/or direct hyperlinks.
 - Some of the hyperlinks may be behind paywalls, but we'll make sure you'll have access to them. In particular, we recommend that you activate your [University of Utah New York Times Account](#) before the first week of classes. Please also refer to the [database website](#) of the Marriot Library, which provides instructions for gaining access to other journals.
 - If you need to remotely access campus to access resources, be sure to have your VPN configured (follow the directions on the [University VPN page](#)).

Course Website

All course materials are on the course Canvas site <https://utah.instructure.com/courses/928508>, and you should use that as a main source of information for this class. This is also where we will submit assignments.

Additional information on the course as a whole can be found at: <https://csme.utah.edu/beinghumaninstem/>. Outside of when we refer you to this website, you are not expected to check in at this website. This is, however, where we will post information on the final symposium, and so is a good website to share with family and friends!

Final Examination (Symposium)

The final exam for this course is on **Thursday, April 25 1-3pm**. This will take the form of a symposium, where you will share the results of your projects to a public audience. This is a mandatory component of the course and hence you should plan to attend.

Course Description, Goals and Expected Learning Outcomes

Course Description

The course combines academic inquiry and the experiences of individuals in the course to develop an understanding of how everyone's identities shape their experience in STEM. The course has two components that are intertwined throughout the semester:

1. **Reading and discussion.** On Tuesdays, we ground our understanding through discussion of primary scholarly research as well as media sources (e.g., podcasts, films); occasionally we'll welcome guests to enrich and inform our discussions. Sample topics include implicit bias, stereotype threat, imposter syndrome, antiracism, intersectionality, and the roles that gender, race, LGBTQIA+ identity, dis/ability, and many others play in STEM.
2. **Project development.** On Thursdays, students will lead the design, execution, and evaluation of interventions with the goal of improving the experience of STEM students at the U.

This course relies heavily on in-class group discussions and team projects. Students will be asked to engage in group discussion at every class meeting. Students will establish norms for group discussion at the beginning of the semester to facilitate respectful listening and productive, open discussions. Coursework includes weekly readings, reflective/opinion writing, in-class discussion, project development. At the end of the semester, students in the class will present their project results and other course findings at a symposium (Thu, Apr 25) that will be open to University of Utah faculty, staff and students. In addition, students are encouraged to invite 1-2 entities *within or outside of the UofU community* (e.g., local museums, schools, or affinity groups).

Course Goals

- Investigate the themes of diversity and inclusion in STEM.
- Create a community of students and faculty in STEM who critically analyze and discuss these themes.
- Design, develop, and implement interventions to improve the STEM climate at the U of U.
- Build awareness of issues relating to diversity in inclusion in STEM at the U through an end-of-semester symposium open to the U of U community of faculty, staff, and students.

Learning Outcomes

This course fulfills the [General Education Diversity](#) (DV) requirement and the [Community Engaged Learning designation](#). This course addresses the following Essential Learning Outcomes: Creative Thinking, Teamwork, Civic Engagement.

At the end of the semester, students will be able to:

- Reflect on how different backgrounds and identities affect students' experiences in STEM.

- Demonstrate topic fluency with regards to major issues impacting climate and inclusion in STEM fields.
- Communicate personal perspectives, reflections, and questions related to the themes discussed in the course, both verbally and in writing.
- Summarize and provide critique of scholarly articles and media sources.
- Respectfully engage in and contribute to classroom discussions.
- Choose, design, and implement a project informed and motivated by the topics discussed in class and/or by additional research with the goal of improving the experience of students in STEM at the U of U and enhance equity and inclusion in the STEM fields.
- Collaborate effectively with groups of classmates on small and large team projects.

Community Engaged Learning involves students, faculty, and community partners working together to apply knowledge in authentic settings in order to address community and/ or societal needs while also meeting academic objectives. CEL enhances and deepens students' understanding of an academic discipline by facilitating the integration of theory and practice.

Community Partners: U of U students in STEM who will be involved in students' projects (e.g. through surveys, interviews, conversations, etc.), School for Social and Cultural Transformation, Center for Disability and Access, Office for Inclusive Excellence, Student Success Advocates, Student Organizations (such as Disability and Access in STEM (DASTEM), Physics and Astronomy Society for Support and Advocacy of Gender Equity (PASSAGE)), College of Social Work, College of Education, and others.

Inclusivity

We strive to make this class an inclusive community where we learn from the many perspectives of people of differing backgrounds and beliefs in the course. As a community, we aim to be respectful to all. We reject all forms of prejudice and discrimination, including but not limited to those based on age, color, disability, gender, gender identity, gender expression, body type, national origin, political affiliation, race, religion, sexual orientation, and veteran status. Faculty and students are expected to commit to creating an environment that facilitates inquiry and self-expression, while also demonstrating diligence in understanding how others' viewpoints may be different from their own. We understand that as a class we will move forward *imperfectly*, and that we will *all* make mistakes. We will use such imperfections and mistakes as learning opportunities to grow as a community, while always owning the responsibility for the impact of our actions and words.

Course History

The idea for a [Being Human in STEM](#) course came from chemistry professor Sheila Jaswal from Amherst College in response to Fall 2015 racial protests¹ across several American college campuses. The student protests brought to light a need for dialogue between students and faculty about inclusivity; this need was even more acute in STEM where often students perceive that their "identity should remain at the

¹ Events that took place at the University of Missouri, Yale University, and Amherst College form key examples of racial misconduct and protest. For more on these events, see "Racial Tension and Protests," 2015 ([link](#)); Hartocollis & Bidgood, 2015 ([link](#)); and Dean, 2015 ([link](#)).

door.” Consequently, the *Being Human in STEM* course asserts that students’ identities matter and that every student deserves the space and freedom to be themselves in a STEM classroom. A course with the same purpose, *Race and Gender in the Scientific Community*, had already been initiated at Brown University in 2014 by students, including black women, and was adopted by the University. Amherst’s and Brown’s allied courses connected in 2016. Since then, the [Being Human in STEM](#) course has been taught with the following mission:

Collaboratively design projects that aim to foster a more inclusive, supportive STEM community and develop a framework for students and faculty to understand and navigate diverse identities in the classroom and beyond.

Inspired by [Amherst’s](#) and Brown’s work, several other colleges in the Northeast (e.g., Yale University) started their own implementation of the course. Claudia De Grandi, Associate Professor (Lecturer) of Educational Practice, co-taught the class twice at Yale University before she joined the University of Utah in 2018. Being Human in STEM had never been offered at a public university before, and Dr. De Grandi was delighted to spearhead the implementation of this course at the University of Utah.

The course was offered for the first time at the University of Utah in Spring 2020, co-taught by five instructors across the College of Science: Claudia De Grandi (Physics & Astronomy), Kelly MacArthur (Mathematics), Jon Rainier (Chemistry), Holly Sebahar (Chemistry), and Anil Seth (Physics & Astronomy).

Course Components

Grade Calculation

A. Class Attendance	14%
B. Class Participation	12%
C. Weekly Assignments	22%
D. Book Reading	8%
E. Writing Assignments	14%
F. Team Project *	30%

*(including proposal, design, implementation, and Symposium presentation)

The class is formatted so that all students who put in the time and effort can obtain an A. Grade breakdown are as follows:

Score in %	Letter Grade
93-100	A
89-93	A-
85-89	B+
80-85	B
75-80	B-
70-75	C+
65-70	C
60-65	C-
<60	D, F

A. and B. Class Participation and Attendance

Attendance and in-class participation in discussions and activities is crucial to success in this course. Participation includes actively listening, being prepared to discuss the required readings, and thoughtfully contributing to the weekly discussion, activities, and group work. Much of what we do in this class requires us to reflect on the implications of the material we read and discuss. Thus, your presence is important. Attendance will be tracked on Canvas using the Roll Call Attendance tool. Additionally, for a few classes you'll be asked to prepare to lead a discussion and/or give a short presentation. All details will be presented in class ahead of time.

C. Weekly Assignments

- An assignment will be due *every Sunday* at 11:59 pm and posted at least 1 week in advance.
- Each assignment has two components:
 1. Reading articles and/or book chapters, watching videos, and/or listening to podcasts.
 2. Submission to the pertinent Canvas Discussion Boards. This may take the form of a summary, reflection, or responding to prompts. Discussion Board posts will be an important component of the class to inform and guide our Tuesday's class discussion and to facilitate conversation outside of class.
- We highly recommend that students complete these assignments in 2-3 sessions, and that students take notes on the materials. This is so that students can better respond to prompts without having to re-read/watch/listen to the materials.

D. Book Reading

As a class we will read *How to Be an Antiracist* (Ibram X. Kendi). Students will be assigned to read about 40 pages per week for 6 weeks, ending the book by Friday February 23. Every week they will be asked to post a comment on the chapters they read that week. A Book Reflection Essay will be due on Sunday February 25.

E. Writing Assignments

There will be 3 writing assignments for a total of 60 points:

1. STEM Autobiography (due Wed 1/17) [10 points]
2. Op-ed or Autobiography writing Assignment (First submission due Fri 3/15 [20 points], Resubmission with revisions due Fri 3/29 [10 points]) [30 points total]
3. Reflection on overall experience in this class (due Sun 4/21) [20 points]

F. Team Project

Students will work in teams to design and implement interventions aimed at improving the experience and climate for STEM students at the U. These interventions can take different forms, some examples from past implementation of the course are:

- Design and implement surveys to assess some aspects of the STEM climate on campus²
- Organize a student-led workshop for STEM faculty to inform them of campus-relevant statistics and best teaching practices from a student perspective
- Establish support groups and visibility for specific groups on campus (e.g., first-generation and low-income students, disabled students)
- Design and lead diversity and inclusion discussion with faculty and students in a STEM course
- Create online resources, peer-to-peer mentoring and informative sessions for incoming students interested in STEM
- Examples of past projects can be found at: <https://csme.utah.edu/beinghumaninstem/>

Students may develop something like the above, or something completely new. It will be up to them to identify the major needs, via research and data collection, and maximize the impact of their intervention.

Successful completion of a Team Project includes:

- Initial individual project proposal
- Regular weekly collaboration with project team members in accordance with established team norms
- Submission of weekly project updates (due Wednesday at midnight)
- Design and execution of team project
- Write up/delivery of project outcomes and/or findings
- Public presentation of project at end-semester symposium during Final Exam period on **Thursday April 25 1-3pm**

² At Yale University this project eventually led to a publication: STEM Climate survey developed through student–faculty collaboration, Teaching in Higher Education, DOI: <https://doi.org/10.1080/13562517.2019.1636219>. At University of Utah students discussed the results of the survey with former President Watkins as part of her [U Rising podcast](#).

Absences, Excuses, and Extensions

An Excuse and Extension Request Form is available on CANVAS and at this [link](#). Please use this form to notify us of circumstances that you believe should excuse you of class attendance/allow you to have an extension *before* the deadline/class period in question.

- **Class attendance:** You will be excused for one class absence automatically. Two or more absences will result in a 0.5% deduction from your overall course percentage for each additional class missed.
 - **Please stay home if you have symptoms** following the University guidelines (see here below under Covid-19 and other illnesses). You will be excused for absences due to Covid or other virus/illness, please communicate with us through the form above.
- **Late submissions:** All assignments will be subjected to a 3% late penalty per each hour the submission is late.
 - **Extensions:** Please use the form above to request an extension at least 24 hours in advance. Please communicate and let us know if you anticipate any conflicts – it is our goal to facilitate your learning and be flexible, but we request you all to be active participants in this process and engage in clear and honest communication with us.

Course Policies and Resources

1. **Covid-19 and other illnesses:** In conjunction with the [Centers for Disease Control and Prevention](#) and local health departments, the University asks students, faculty, and staff to stay home if they are sick with COVID-19 or other shareable illnesses. If you are sick, please communicate with your professors or supervisors. Students who test positive for COVID-19 and live in on-campus housing should follow Housing and Residential Education [guidance](#) regarding isolation. For more guidance also visit the U of U HealthCare page - <https://healthcare.utah.edu/coronavirus/care-instructions>
2. **Student Names and Personal Pronouns Statement:** Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account). While CIS refers to this as merely a preference, we will honor you by referring to you with the name and pronoun that feels best for you in class, on lab reports, team assignments, etc. Please advise your instructor and TA of any name or pronoun changes (and update CIS) so we can help create a learning environment in which you, your name, and your pronoun will be respected. If you need assistance getting your preferred name on your uID card, please visit the LGBT Resource Center (lgbt.utah.edu) Room 409 in the Olpin Union Building.
3. **The Americans with Disabilities Act:** The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, (801) 581-5020. CDS will work with you and the instructor to make

arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

4. **Learners of English as an Additional/Second Language:** If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center (writingcenter.utah.edu/); the Writing Program (writing.utah.edu/); and the English Language Institute (eli.utah.edu/). Please let us know if there is any additional support you would like to discuss for this class.
5. **Veterans Center:** If you are a student veteran, the University of Utah has a Veterans Support Center (veteranscenter.utah.edu/) located in Room 161 in the Olpin Union Building. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources. Please also let us know if you need any additional support in this class for any reason.
6. **Wellness Statement:** Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources, contact the Center for Student Wellness (wellness.utah.edu/); 801-581-7776.
7. **University Counseling Center:** The University Counseling Center (UCC) (counselingcenter.utah.edu/) provides developmental, preventive, and therapeutic services and programs that promote the intellectual, emotional, cultural, and social development of University of Utah students. They advocate a philosophy of acceptance, compassion, and support for those they serve, as well as for each other. They aspire to respect cultural, individual and role differences as they continually work toward creating a safe and affirming climate for individuals of all ages, cultures, ethnicities, genders, gender identities, languages, mental and physical abilities, national origins, races, religions, sexual orientations, sizes and socioeconomic statuses.
8. **Office of the Dean of Students:** The Office of the Dean of Students (deanofstudents.utah.edu/) is dedicated to being a resource to students through support, advocacy, involvement, and accountability. It serves as a support for students facing challenges to their success as students, and assist with the interpretation of University policy and regulations. Please consider reaching out to the Office of Dean of Students for any questions, issues and concerns. 200 South Central Campus Dr., Suite 270. Monday-Friday 8 am-5 pm.
9. **Addressing Sexual Misconduct:** Title IX makes it clear that violence and harassment based on sex and gender (which Includes sexual orientation and gender identity/expression) is a civil rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support

and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

If you report to us or anyone else who works for the university, know that we are mandatory reporters. All this means is that after checking that you are okay and helping you reach appropriate resources, we will notify the OEO and they will reach out to you. You are in complete control and can choose to do nothing (ignore their emails), file a report, or request an investigation. They can help you navigate your options and remember, YOU are in control.

10. **University Safety Statement:** The University of Utah values the safety of all campus community members. To report suspicious activity or to request a courtesy escort, call campus police at 801-585-COPS (801-585-2677). You will receive important emergency alerts and safety messages regarding campus safety via text message. Lauren’s Promise – We will listen and believe you if you are being threatened. If you are in immediate danger, call 911. Utah Domestic Violence Coalition is another good resource 800-897-5465. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu.

We are committed to make sure all students have the support they need if they are experiencing violence, including but not limited to domestic violence, interpersonal violence, and stalking. If you are experiencing violence we encourage you to tell someone and seek help from the resources listed below:

Campus Resources

- Safe U safeu.utah.edu
- Advocacy/Mental Health wellness.utah.edu
- Contact a Victim Advocate advocate@sa.utah.edu
- University Police 801-585-2677

Area Resources

- Utah’s Domestic Violence Coalition www.udvc.org
- YWCA of Utah www.ywcautah.org
- Utah Coalition Against Sexual Assault www.ucasa.org
- Rape Recovery Center Crisis Line 901-467-7273
- Love is Respect www.loveisrespect.org

11. **Undocumented Student Support:** Immigration is a complex phenomenon with broad impact—those who are directly affected by it, as well as those who are indirectly affected by their relationships with family members, friends, and loved ones. If your immigration status presents obstacles to engaging in specific activities or fulfilling specific course criteria, confidential arrangements may be requested from the Dream Center. Arrangements with the Dream Center will not jeopardize your student status, your financial aid, or any other part of your residence. The Dream Center offers a wide range of resources to support undocumented students (with and without DACA) as well as students from mixed-status families. To learn more, please contact the Dream Center at 801.213.3697 or visit dream.utah.edu.