

Women & Gender in Science & Technology

CONTACT INFORMATION

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COURSE OVERVIEW

This is an interdisciplinary introduction to the mutual influence of science and technological research on contemporary understandings of sex and gender and an examination of the ways that science and social hierarchy interact. While the influence of scientific knowledge is evident in U.S. culture, the influence of U.S. culture on the creation of that knowledge is often more subtle. Since the beginning of the century, U.S. Americans have imagined scientists and engineers as dispassionate, rational, obsessive, and amoral, living outside of their contemporary context and driven only by the excitement of uncovering incontrovertible Truth. In contrast, the realities of day-to-day interactions within science and engineering are very different from this image precisely because of the inescapability of social, cultural, and political contexts. This course introduces students to those contexts, emphasizing the underrepresentation of women in scientific and technological fields.

OVERVIEW OF COURSE LEARNING OBJECTIVES

1. Students will be able to describe how the social, economic, and institutional practices of scientific and technological research are shaped by the presence and absence of women.
2. Students will be able to identify cultural myths about scientists and engineers and compare how those myths in turn foster other myths about gender.
3. Students will critically analyze research about women, examining social and technological knowledge in light of social debates about it.
4. Students will integrate and be able to assess how their experiences of gender are relevant to experiences with scientific and technological information.
5. Students will be able to evaluate specific research about women and gender to analyze and assess existing scientific knowledge and practices.
6. Students will gain a better understanding of *intersectionality* (the way that systems based on race, ethnicity, class, ability, size, gender, and sexuality shape an individual's experience) and its importance in critically analyzing the course topics.

*I've set up an email address specifically for this course section. Please use **wgs210.ncsu@gmail.com** for course-related inquiries which require a swift response.

COURSE PREREQUISITES

There are no prerequisites for this course. This 3-credit-hour course satisfies the U.S. Diversity corequisite and partially fulfills the (5-hour) GEP Interdisciplinary Perspectives requirement. This course is a requirement within the Women's and Gender Studies program here at NCSU, and it is also a prerequisite for the upper-level seminar on women and STEM.

COURSE MATERIALS

All the links to copyrighted readings and other copyrighted materials for the course are provided within each unit for you to download for free as an NCSU student. There is no need to print materials.

Audio: If you don't have one already, you may need to purchase either a headset or headphones/earbuds with an integrated microphone. These aren't always necessary for Zoom calls, but when there's feedback or an echo, asking everyone to use a headset with a built-in microphone can be an easy way to eliminate feedback loops that occur with speakers and microphones. You can get headsets for about \$10 - \$15 [online](#).

Internet Access: This course requires access to a reliable Internet connection for the entire semester. The course will require you to use Zoom for class assignments and Moodle to access information/updates for the course, view assignment requirements, submit assignments, and send/receive course communications. In addition, some of the course assignments will require you to view videos, documentaries, etc. and you will need access to the internet to do so. If you do not have access to reliable internet and/or a computer personally, then you can access them through NC State campus and/or libraries.

COURSE SCHEDULE

Workload Note. This course requires large amounts of reading in order to be prepared for the Discussion forums and Zoom video chat discussions that are the core of the coursework. Planning ahead will be essential to staying on top of the course material. The readings for the semester are available to you on the Moodle site from the first day of the course. This is to help facilitate your planning ahead. The course schedule *is* subject to change with appropriate notice to students; for the most up-to-date schedule of the course, please see the course Moodle site.

Each unit will require you to be on-line to post on Moodle discussion boards, join a Zoom session, complete a quiz, or upload an assignment. The course schedule document included in the "Getting Started" section of the Moodle page outlines the tentative course schedule—the schedule is divided into Mon-Wed and Wed-Fri units, with the unit subject along with any projects and assignments due on that date. A more detailed outline can be found on the course web site as videos, supplemental readings, and other activities are added to course content.

COURSE REQUIREMENTS AND GRADING

This section provides you with a brief overview of the assignments. Full course assignments and assessment of assignments are listed in detail on the Moodle page.

I.	Discussion forum participation	25%
II.	Zoom discussion participation	20%
III.	Quizzes	15%
IV.	Midterm project	20%
V.	Final project	20%

Discussion forums and Zoom conversations are where the bulk of the growth happens in this course. A seminar format only works when the class is actively engaged and has read the materials. To enable as much participation as possible, you will engage in a variety of online discussions and be encouraged to work in small groups on projects. Forums and Zooms are the only way we can monitor your individual understanding and ongoing participation in the course.

I. Discussion forums (25%)

Discussion forum assignments will typically consist of three parts—the first two are discussion questions that students will be asked to answer using the material covered in that unit. To receive full credit for participating in the discussion forums assignment, students should write an answer that clearly demonstrates familiarity with *all* of the unit's materials, cites the materials directly (using either MLA or APA format), and respond to at least one of their classmates' posts. The third part is a forum to which students post their own discussion question. Each Forum is graded out of 12 points (see Discussion Forum Participation Guidelines).

Please make good use of these forums throughout the unit to demonstrate your active engagement in materials and class discussions. There are no make-ups for missed Forums; however, I will drop your lowest Forum score.

Further details on Discussion Forum Participation Guidelines are posted in the "Getting Started" section of the Moodle course site.

II. Zoom small-group discussions (20%)

Several assignments for this course will require that you sign up for a specific time-slot and log-in for a group conversation via Zoom (which you will record within Zoom). The Zoom sign-up process, as well as the conversations, will be structured by the instructor. Each assignment will come with a list of discussion questions that should be covered with the members of your group. Detailed instructions for each Zoom assignment can be found on Moodle.

For each Zoom assignment, you are required to complete a Feedback Quiz wherein you assess your classmates' participation in the Zoom session (peer assessments). I will review your feedback responses and spot-check the group conversations to ensure that the relevant topics were discussed, that all group members came to the conversation prepared, and to assign grades based on my assessment. If your peer assessments seem inflated (for example, in your group of two, neither of you completed the reading or took notes, but gave each other full credit) you will not get credit for the Feedback Quiz. Zoom sessions are graded out of 10 points. I understand that sometimes things come up, and you may have to miss a scheduled session; for this reason your lowest Zoom grade will be dropped.

III. Quizzes (15%)

To give you all a break from posting on Moodle and coordinating Zoom sessions, I will use quizzes to check your comprehension of the material. These will include multiple choice, matching, and true/false questions. Each quiz will have 4-6 questions and will be timed (between 15-30 minutes). You will need to read the assigned readings and listen to the lectures before taking each quiz. Unless otherwise noted, each quiz will only be based on the material in the unit in which it is assigned. Quizzes are graded out of 10 points.

IV. Midterm assignment (20%)

Students will complete the midterm assignment individually. You'll be asked to choose a topic you care about and outline a discussion on your chosen topic, reflecting on ways you might navigate particular responses to your argument. Further information about the midterm project can be found on the Moodle site.

V. Final Dinner Party project (20%)

The final project is designed to give you a chance to explore and apply qualitative data analysis procedures that are an important aspect of many feminist research projects, as well as giving you the opportunity to take what you have learned in this course and share it with people outside of the course. For this project, you will be asked to host a group conversation, or "dinner party", at which you discuss issues relevant to the course and then write an integrative essay connecting the themes that arose to the course material.

We strongly recommend you complete the final project in groups of 2-4. Mid- October, you will be expected to form groups on-line by connecting on the Moodle forum provided, then contacting each other via e-mail or through the forum to set times and dates to meet either in-person or virtually. (You may, of course, start working on it before then.) Even working in a group, with the online collaborative tools that are available to us, it is possible to complete this project 100% online.

More details on the Final Dinner Party Project can be found in the "Final Project" section of the Moodle course site.

GRADE SCALE

A+ = 98 - 100	B+ = 87 - 89	C+ = 77 - 79	D+ = 67 - 69	< 60% receives a failing grade.
A = 94 - 97	B = 84 - 86	C = 74 - 76	D = 64 - 66	
A- = 90 - 93	B- = 80 - 83	C- = 70 - 73	D- = 60 - 63	

Some key points about grading:

- All grades and assignments will be posted in Moodle (do not e-mail papers, please)
- Completing all assignments does not guarantee you an A or even a B. C is the default grade for completion of tasks and full participation in class and As and Bs denote higher performance in all class activities and assignments.
- If you are unsure about assignment requirements, including formatting or citation requirements, please post on the Q&A Forum or email sts210.ncsu@gmail.com rather than make the wrong assumption and lose points.

POLICIES AND PROCEDURES

Late assignments. Late assignments will be accepted at the instructor's discretion and may be penalized by one letter grade for each day late. See Forum Guidelines for the policy on late forum posts. You are expected to manage your time and ensure all assignments are submitted on or before the due date—this helps you stay on track with assignments and helps me stay on track with grading. That said, I would rather you ask for an extension than miss an assignment or submit unfinished work.

Attendance and class participation. The equivalent for attendance in an on-line course is regular participation and timely completion of assignments. The university's definition of excused absences will be applied in cases where work could not be submitted on time. Note: Excuses for unanticipated absences must be reported to the instructor no more than one week after you return to class.

The last day to drop and get a refund is Monday, January 25th; the last day to drop without receiving a grade is Monday, February 1st; the last day to drop and receive a W is Wednesday, March 17th.

Electronically-hosted course components. Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web postings, where relevant to the course. Examples include online discussions of class topics, and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course.

Academic integrity. The learning activities in this course are designed to promote discussion among students as peer educators. Though you are free to use any legitimate academic materials at your disposal, you may not plagiarize available sources (such as existing book or movie reviews) or simply replicate answers of others enrolled in the course. I understand and expect all students to follow the university's honor pledge: "I have neither given nor received unauthorized aid on this test or assignment." For the university's policy, see: <http://policies.ncsu.edu/policy/pol-11-35-01>

NC State University Anti-Discrimination Policies. NC State's policies and regulations covering discrimination, harassment, and retaliation may be accessed at <https://policies.ncsu.edu/policy/pol-04-25-05/>. Any person who feels that they have been the subject of prohibited discrimination, harassment, or retaliation should contact the Office of Institutional Equity and Diversity (OIED) at 515-1151.

Accommodations for disabilities. Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with the Disability Resource Office at Holmes Hall, Suite 304, 2751 Cates Avenue, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01). <https://policies.ncsu.edu/regulation/reg-02-20-01>.

Trans-Inclusive Statement. In an effort to affirm and respect the identities of transgender students in the classroom and beyond, please contact us if you wish to be referred to using a name and/or pronouns other than what is listed in the student directory. Information on how to change your name and/or pronouns in the student directory is available at <https://studentservices.ncsu.edu/your-resources/privacy/pronouns-and-gender-identity/>; additionally, a GLBT center staff member can assist you at 919.513.9742 or via gltcenter@ncsu.edu

Policy on teaching and learning practices. This course is designed to foster dialog about how a wide variety of exclusionary practices (including those based on gender, race, class, sexual preference, ethnic or religious background, and physical disabilities) promote social inequalities. Full participation in this course requires your willingness to (1) read the material, (2) share your reactions and experiences, (3) show respect for others' perspectives and experiences, and (4) challenge your current ways of thinking. Students may be required to disclose personally identifiable information to other students in the course, via electronic tools like email or web-postings, where relevant to the course. Examples include online discussions of class topics and posting of student coursework. All students are expected to respect the privacy of each other by not sharing or using such information outside the course. It is my job to create a classroom environment in which you feel safe and fully included. Please alert me if you have concerns about the course content, classroom culture, or to report inappropriate behavior by another student as the semester progresses.

Online Course Evaluations. Students will be able to complete an online evaluation of this course towards the end of the spring term. You will receive an email message directing you to a website where you can login with your UnityID and complete the evaluation. These evaluations are completely confidential and we will not have access to the evaluations until after the end of the semester, that is, after your final course grades have been submitted to Records & Registration. Visit this site for more information: <https://oirp.ncsu.edu/classeval/about-classeval>

Syllabus Modification Statement. Our syllabus represents a flexible agreement. It outlines the topics we will cover and the order we will cover them. Dates for assignments represent the earliest possible time they would be due. However, minor changes in the syllabus can occur if there is a disruption in university services.

NC State Policies, Regulations, and Rules (PRR). Students are responsible for reviewing the PRRs which pertain to their course rights and responsibilities. These include: <http://policies.ncsu.edu/policy/pol-04-25-05> (Equal Opportunity and Non-discrimination Policy Statement), <https://oied.ncsu.edu/divweb/policies/> (Office for Institutional Equity and Diversity), <http://policies.ncsu.edu/policy/pol-11-35-01> (Code of Student Conduct), <http://policies.ncsu.edu/regulation/reg-02-50-03> (Grades and Grade Point Average), <https://policies.ncsu.edu/regulation/reg-02-20-04> (Audits), and <https://policies.ncsu.edu/regulation/reg-02-50-03> (Incompletes).

COURSE CONTENT

This course addresses a number of difficult issues, some of which may have personal resonance for you or your classmates. Holding that in mind, it is of the utmost importance that we treat the issues (and each other) with respect and empathy in our discussions. I will attempt to give content warnings about potentially triggering content prior to each class. Below is a list of potentially contentious issues that we'll be discussing over the course of the semester.

rape and sexual assault, interpersonal violence, suicide, enslavement, imprisonment, torture, war, hate crimes, scientific racism, medical procedures performed without patient consent, human sexuality, vibrators, birth control, and abortion

CAMPUS RESOURCES

University Writing Center For help with any writing assignment, for any course, Writing Tutors are available through the University Writing Center in D.H. Hill, although this semester they are conducting sessions online. To sign up for an appointment, visit <https://asc.dasa.ncsu.edu/undergraduate-writing-center/policies-and-procedures/>

Disability Services for Students: As mentioned above, reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 919-515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.01).

Date (Available Due)	Topic	Readings	Assignments
Jan 19 th Jan 22 nd	Introductions and Reflection		Forum 1 Zoom 1
<i>Science and Social Hierarchy</i>			
Jan 25 th Jan 27 th	Privilege, Power, & Normativity	Choose from reading options provided on Moodle	Forum 2A
Jan 27 th Jan 29 th	Gender, Sex, Race, and Science	Read Fisher chapter Listen to Seeing White podcast, Episode 8	Forum 2B Forum 2C
Feb 1 st Feb 3 rd	Complicating Biological Beliefs: Sex and Race	Read Rogers "Sexing the Brain" Read Rose "Should Scientists Study Race & IQ?"	Quiz 1
Feb 3 rd Feb 5 th	Complicating Biological Beliefs: Medicalization of Sex	Read Kessler "Medical Construction of Gender" Watch "Intersexion"	Zoom 2
Feb 8 th Feb 12 th (Wellness Day Tues 2/9 – you have all week to complete Forums 3A, 3B, and 3C)	Medical Science of Reproduction and Unethical Experimentation	Read Schmid "Crafting the Perfect Woman" Listen to Sawbones podcast, "Memorialization and Medical Ethics"	Forum 3A
Feb 10 th Feb 12 th	Whose Health?	Read Wing "Whose Epidemiology" Read Kearns "Queering Epidemiology"	Forum 3B Forum 3C
<i>Socialization of Scientific Beliefs</i>			
Feb 15 th Feb 17 th	Science and Gendered Socialization	Read Witt's intro chapter Read Tenenbaum & Leaper article	Quiz 2
Feb 17 th Feb 19 th	Scientific Education, and Interventions	Read Brotman & Moore article	Zoom 3 STEM Initiatives
Feb 22 nd Feb 24 th	Field-specific Ability Beliefs	Read Leslie, et al. article Read Feng, Spence, and Pratt article	Quiz 3 Post midterm topic
Feb 24 th Feb 26 th	Scientific Stereotypes, Visibility, & Media	Read Barbercheck Watch Killing Us Softly	Zoom 4
Mar 1 st Mar 3 rd	Implicit Bias	Read Moss-Racusin (2012) Read Moss-Racusin (2015)	Quiz 4
Mar 3 rd Mar 4 th (Wellness Day Fri 3/5)	No readings or assignments for March 3 rd		Midterm due at midnight 3/8

<i>Women in STEM</i>			
Mar 8 th Mar 10 th	Personal Narratives – Women in STEM	Read Wayne article Read Sands interview	Forum 4A
Mar 10 th Mar 12 th	Personal Narratives – Lost Perspectives	Read Horn article Read Subramaniam narrative	Forum 4B Forum 4C
Mar 15 th Mar 17 th	Women at Work in the U.S.	Read Light “When Computers Were Women”	Forum 5A last day to drop and receive a W
Mar 17 th Mar 19 th	Women at Work Internationally	Read Rana “Fulfilling Technology’s Promise”	Forum 5B Forum 5C
<i>Women AND Science</i>			
Mar 22 nd Mar 26 th (Wellness Day Wed 3/24 – you have all week to complete Quiz 5)	Women, Technology, and Sexuality	Read Maines Read NYT article Read Drew “The Myth of Female Sexual Dysfunction”	Quiz 5
Mar 25 th Mar 26 th (Wellness Day Wed 3/24)	Reproductive Technologies	Watch “The Pill” Read “Different Stakes” article and birth control timeline	Zoom 5 Submit Final Group list for Group Project by midnight 3/26
Mar 29 th Mar 31 st	Reproductive Technologies	Read Watkins “From Boom to Bust...”	Forum 6A
Mar 31 st Apr 2 nd	Race, Gender, and Genetic Technologies	Read Roberts “A New Reproductive Dystopia”	Forum 6B Forum 6C
<i>(Re)Imagining STEM</i>			
Apr 5 th Apr 7 th	Decolonial Queer Feminism & Technology	Read Cox “Decolonial Queer Feminism in A Cyborg Manifesto”	3-2-1 Quiz 6
Apr 7 th Apr 9 th	Meaning, Language, and Nature	Read Keller “Gender and Science: An update”	Zoom 6
Apr 12 th Apr 14 th	Biopossibility	Read Willey “Biopossibility”	3-2-1 Quiz 7
Apr 14 th Apr 16 th (Wellness Day Fri 4/15)	Changing the Questions	Read Roy “Asking Different Questions”	Forum 7 (Posts only, replies to classmates not req’d)
Apr 19 th Apr 21 st	Transformative Possibilities	Read Riley “Feminisms in Engineering Education”	Quiz 8 (covers Roy and Riley articles)
Apr 21 st Apr 25 th	Cyberfeminism and Technology as Liberation	Read “Rethinking Cyberfeminism(s)” by Daniels Watch San Junipero	Zoom 7 Critical Media Analysis
Apr 26 th Apr 30 th	No Readings or Assignments—Finish Final Project		Final Project due at midnight 4/30