

STS 4600 – The Engineer, Ethics, and Professional Responsibility

16288 007 TuTh 12:30pm - 1:45pm

16095 016 TuTh 2:00pm - 3:15pm

16012 018 TuTh 3:30pm - 4:45pm

Instructor and Teaching Team

Sean Ferguson, Assistant Professor, Engineering and Society Department, PhD [he/they]

- Office: I don't have a physical office. We will meet in our Discord Server or on Zoom or phone.
- General availability: I try to find work/life boundaries, expect me to quickly get back to you between 8am to 5pm EDT on weekdays. When pressed you might find me late at night and weekends on Discord.
- Recurring Office Hours: Tuesday all day via Discord; no in person office hours. You can look in Discord for "Events" where I host more meeting sessions.
- Teaching Team: Abbie McNulty (she/her) and Han Willbanks (he/they) will be tasked with supporting our learning community. They will have less impact on the research papers this semester, although you can always ask for their help. TA's will be responsible more for helping answer student logistic questions, track/grade small assignments, facilitate online discussions, and *ad hoc* interventions as needed.

Communication and Orientation

Fast communication and Office Hours	<p>Discord (same as STS4500) https://discord.gg/5aararUUwT</p> <ul style="list-style-type: none">• Sean Ferguson (he/they)#9314• Han.Willbanks#8443• Abbie McNulty#1005
Slow/sensitive communications	<ul style="list-style-type: none">• smf6p@virginia.edu• acm8ym@virginia.edu• vby2je@virginia.edu
Find Tasks and Assignments	<ul style="list-style-type: none">• All date sensitive assignments (grade or otherwise) will be hosted in Collab/Assignments. When in doubt, this is the default location for the most up to date information.• The entire course calendar with links to Assignments, Discussion forums, and Resources will be your home page in Collab.

Introduction:

We are not here to ‘make’ you ethical, that is impossible. We are here for self-reflection, locating our commitments, and developing foundations for moral action in your professional lives. “Know oneself” is a guiding maxim in this course.

This course is built on care of self and others first, flexibility second, and content third. This semester will be an unusual one for many reasons. Some challenges are due to the time we exist within. But there are more universal challenges and opportunities as you move from an educational space to a professional one.

Why do we have a mandatory engineering ethics class? Most engineers in the U.S. will not experience a formal ethics experience. However, UVA and a select number of other engineering schools have deemed it important for you to engage with engineering as a vocation that has important responsibilities given the large amount of power to influence people, organizations, and our built environment. You benefit from generations of engineers coordinating together to maintain respect for the profession. Often, courses like ours work through famous engineering ethics case studies of failure, but these tend to devolve into thin conversations of individual behavior. You just need to communicate better. Don’t cut corners. Be a hero. We will use case studies, but we will use different tactics to practice ethical behavior and deconstruct the micro and macro challenges so that we can reshape the teams we work within and envision what we mean by good, progress, and responsibility. If we learned nothing from last semester, one can only do so much alone particularly when our systems aren’t always optimal or just.

We will also continue with our learning goals related to the research projects you started in STS4500. While the current plan has the ethical learning and research project overlapping in many ways, you can anticipate a feeling that we are pursuing two parallel, but not always completely integrated paths. I have done my best to have the research papers inform the study of ethics, and vice versa.

Goals	Competencies	Assessments
Lifelong learning	Develop and implement a conceptual framework effectively. Describe concepts and methods using appropriate references & apply those concepts as analytical tools for your own research. Locate credible evidence to support your understanding and analysis. Develop information and digital literacy skills to find and judge information.	<ul style="list-style-type: none">• STS Research Paper• Develop Case Study• Practice qualitative methods
Communication	Convey your ideas in a manner that is clear to a wide audience through effective written and visual communication. Learn about building diverse and inclusive spaces.	<ul style="list-style-type: none">• STS Research Paper Sociotechnical Synthesis• Share thoughts and questions with team• Peer review• Practice visual and audible communication• [global classroom]
Contextualize Engineering	Investigate topics related to sociotechnical design, maintenance, governance, and innovation while making visible diverse values, trade-offs, and cross-cultural and moral context.	<ul style="list-style-type: none">• STS Research Paper• Weekly content and quizzes• Practice qualitative methods• [global classroom]

**Personal
Transformation and
Growth**

Personalize ethical reasoning and develop moral integrity through reflection of personal and professional experiences.

Through course instruction and interactions, students will acquire the knowledge, ability, and predisposition to work effectively with people who define problems differently than they do.

- Weekly content and quizzes
- Sync and Async dialogue between instructor/student and student/student
- Self-reflections
- [global classroom]

Pathways

This is the flexibility and opportunity part of the course. There are three major paths one can take based upon your prior research, interests, and time commitments. I can't promise each pathways has the exact same work load, but the responsibilities are as similar across the assignments as is possible.

Pathway Name	Description	Variability from Local Class
Local Class	<p>This is the default and over 70% of people will be in this group. When you see anything in the schedule with [brackets], you can ignore that information. We will hear from the other paths, but this is the core experience.</p>	
Global Engineering Pathway <i>Signups begin end of first week of class</i>	<p><i>Qualification includes a desire to be open to learning with people from a different society and be flexible in your schedule.</i> We have a partnership with National Yang Ming Chiao Tung University in Taiwan for a small number of students, 7-15 depending on their enrollment, who are working with Professor Sharon Ku—a former UVA professor. The objective is to work with partners to learn about engineering in different cultural and sociopolitical context.</p>	<p>You will be tasked with variations of three small homework assignments —HW1, HW2, HW3 in the schedule. This material you will share with your partners in our Discord server and/or through Google Meets. There will be some demands for flexibility so you can have conversation sessions with your partner. Due to the demands on your time, you will have more flexibility when it comes to deadlines and class meetings. We will also ask that you share your experience with the group at times.</p>
Global Environmental Pathway <i>Signups begin end of first week of class</i>	<p><i>Qualification includes STS research paper dealing with environmental, sustainability, and./or EJ issues. You will also be asked to produce an exhibit of your work to be posted in a digital repository.</i> With the same NYCU partner, but a different multi-disciplinary class a small number of students, ~10, will be learning about how environmentalism, sustainability, environmental justice, local/indigenous movements, and the sociotechnical infrastructures we live with interrelate. You will experience learning with your partners and mentorship from graduate students from UC-Irvine who are working through global environmental movements.</p>	<p>You will also have variations on the same HW1, 2, and 3 as listed in the schedule. You will start with sharing your current STS research. Then move to identifying the different stakeholders, agendas, actants, and values. Then think about local-to-global connections. A final responsibility is to share documentation of your work which will replace an assignment in the Local Class track.</p>

Assessments, Grades, and Deadline Overview

Because I believe in transparency, I will impress upon you that I don't like grades. Those points, fractions, and letters have been critiqued for over a century as inadequate to support meaningful learning experiences. In a different world, we would diversify how we give feedback on your learning: verbally, in writing, during one-on-one sessions, project based, service learning, etc. We would even use self and peer assessments to include more perspectives on who judges what counts as effective learning.

However, the context of our course hinders our options. With 100+ students and mandatory curriculum demands, a highly personalized evaluation and consistent mentoring of your work will be challenging. Further, we have been enculturated (indoctrinated?) that letter and point grades must be associated with performance in class; university and work institutions demand these highly subjective labels.

With that in mind, I am going to focus on differentiating assessment and learning from grading as often as possible. Our goal together is to identify if we are achieving the learning goals and self-improvement, not quantify our worth compared to a subjective scale or against one another. For clarity, we will locate as much as possible in Collab/Assignments. All due dates, instructions, and expectations can be found in Assignments. We will encounter a variety of assessments this semester:

- Everything related to the STS research paper and eventual Portfolio will have more traditional points/grades based upon standard rubrics.
- Weekly assessments of your understanding of the content (readings and videos) will have point values but will be designed so that you can always reiterate until you are comfortable with your effort. Discussions during class time and through online forums will refine our understanding of the content, you can always go back to the quiz to improve your score.
- Where we expand in creative, subjective, unfamiliar territory there will be grades based on the labor you put into it, the trying matters. Feedback will occur, but the goal here is personal growth without the specter of grading hindering our exploration of less-traditional communication styles and forms of inquiry. The teaching team will do what we can to highlight the exceptional and interesting work you produce to help you think about how your perspectives relate to others.

For a full breakdown of all our responsibilities this semester, point allocations, and due dates please see Collab/Assignments and the course calendar.

Care and Safety

It is my goal to create a learning experience that is as accessible, safe, and effective as possible. More importantly I want to treat each other as complex and confusing humans that can't always be understood without respectful dialogue. Let us build a space for respect, kindness, and appreciation so that we can avoid dehumanizing one another or placing false stories onto the behavior of others. Please use your voice to ask for support when you feel unreasonably challenged, have obligations you feel are important but take away from your time in our course, or if you think someone else might benefit from more supportive

attention. Consider our time together an opportunity to explore different ways of working together, a sort of professional practice that could be useful in your future. We will all need to be mindful of our actions and clear in our communication.

To quick truths that are important this semester. First, you won't be able to learn, won't be engaged, and certainly won't flourish if you burn yourself out mentally and physically. You should probably already know, but I assume we will stumble at some point and have built in fluidity to our semester to accommodate unexpected needs. That leads to the second truth, I will not be perfect this semester. We are trying out new experiences this semester that are untested but that I hope are compelling opportunities. I also have many things that demand my attention outside of this course. Also like you, I am on the job market and will go through fits of elation and panic. And finally, I too have family and friends that need my time even when I want nothing more than to be academically successful.

If you anticipate any issues related to the format, materials, or requirements of this course, please meet with me so we can explore potential options. This includes any religious, cultural, or personal accommodations. Needs may change throughout the semester, you will need to ensure someone on the teaching team is aware of your needs. We all learn differently and engage in the world differently; this will be a mantra throughout our course. I will be proactive in working towards inclusive, safe experiences, but your insights are most welcome.

Students with any unique needs may also wish to work with the Student Disability Access Center to discuss a range of options to removing barriers in this course, including official accommodations. Please visit their website for information on this process and to apply for services online:
sdac.studenthealth.virginia.edu.

Additional Student Support Resources

You have many resources available to you when you experience academic or personal stresses. In addition to your professor, the School of Engineering and Applied Science offers [free tutoring](#), and has three staff members located in Thornton Hall who you can contact to help manage academic or personal challenges. Please do not wait until the end of the semester to ask for help!

- *Lisa Lampe*, Director of Undergraduate Education (academic), ll4uu@virginia.edu
- *Blake Calhoun*, Director of Undergraduate Success (academic), bic4sc@virginia.edu
- *Alex Hall*, Assistant Dean of Students (non-academic issues), aec5d@virginia.edu

In addition to having an Assistant Dean of Students embedded in Engineering, we are also fortunate to have two CAPS counsellors embedded in our School. You may schedule time with *Elizabeth Ramirez-Weaver* or *Katie Fowler* through Student Health (<https://www.studenthealth.virginia.edu/getting-started-caps>). When scheduling, be sure to specify that you are an Engineering student. You are also urged to use [TimelyCare](#) for either scheduled or on-demand 24/7 mental health care.

Finally, the [Center for Diversity in Engineering](#) facilitates free tutoring during the academic year, helps students locate internships and research opportunities, and connects students with the many organizations on Grounds that provide information and support. The center also engages with student organizations, particularly those serving students who are traditionally underrepresented in engineering.

Research and Writing Resources

[Maggie Nunley](#) is our STS Subject Librarian. If you have not worked with her, she is an incredible resource in all things STS research related. She has spectacular reviews from students due to her breadth of knowledge in the subject, capacity to help you work through a research strategy, and willingness to support the development of your projects at any stage. Go early in the semester for support, she will get swamped later in the semester.

There is very little our library can't get for you. You might have to send a message or download a VPN if you are offgrounds, but the UVA library either has access or can get access. Here is a direct link to [all options available](#): interlibrary loan, journal access, search options, and web browser add-ons.

University Wide Policies

The University of Virginia is dedicated to providing a safe and equitable learning environment for all students. To that end, it is vital that you know two values that I and the University hold as critically important:

1. Power-based personal violence will not be tolerated.
2. Everyone has a responsibility to do their part to maintain a safe community on Grounds.

If you or someone you know has been affected by power-based personal violence, more information can be found on the UVA Sexual Violence website that describes reporting options and resources available - www.virginia.edu/sexualviolence.

As a faculty member, I am a responsible employee, which means that I am required by University policy and federal law to report what you tell me to the University's Title IX Coordinator. The Title IX Coordinator's job is to ensure that the reporting student receives the resources and support that they need, while also reviewing the information presented to determine whether further action is necessary to ensure survivor safety and the safety of the University community. If you would rather keep this information confidential, there are Confidential Employees you can talk to on Grounds (See http://www.virginia.edu/justreportit/confidential_resources.pdf). If you wish to report something that you have seen, you can do so at the [Just Report It portal](#). **The worst possible situation would be for you or your friend to remain silent when so many here are willing and able to help.**

Course Calendar (updated throughout the semester in our learning management system Collab)