

**STS 4500**  
**STS and Engineering Practice**  
**Fall 2019**  
**Syllabus & Schedule**

Department of Engineering and Society, School of Engineering and Applied Science, University of Virginia

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**Course Overview**

This course challenges you to consider technology and society as integrated systems. In your professional careers you will be presented with problems that require the connection of both technical and social dimensions. The tools you acquire in this course will provide you with marketable skills for your future profession.

STS 4500 is the first of two courses associated with the undergraduate thesis. In STS 4500, you will complete the Thesis Project Prospectus, a document that articulates your approach to resolving a sociotechnical problem related to your field. The first half of STS 4500 offers a broad overview of concepts in STS in order to provide you with an array of scholarly approaches that might frame your Thesis Project. The second half of the course focuses on workshops designed to help you write, edit, and discuss your work with your colleagues.

In STS 4600, you will build on your work in STS 4500 to complete a Thesis Portfolio that will be archived in the Science and Engineering Library at the University of Virginia. The Thesis Portfolio consists of the following documents:

1. Title Page
2. Sociotechnical Synthesis
3. Technical Report
4. STS Research Paper
5. Thesis Project Prospectus

**Course Goals:** By the end of STS 4500 you should be able to apply STS concepts and perspectives to enhance engineering problem solving and prepare you to write your Undergraduate Thesis Project.

**Texts and Supplies:** There is no textbook for this course. All assigned readings are found on our course Collab site. It is critical that you do the assigned reading **before** coming to class. Please prepare a few brief notes or discussion questions for each reading so that you come to class prepared to participate.

**Class Meetings:** We will meet Wednesday evenings from 5 p.m. to 7:30 p.m. in Thornton D222. We will usually take a 15 minute break at 6:15 and resume class at 6:30.

You may use a paper notebook or laptop (preferred) or tablet (acceptable) to take notes during class, but you are not allowed to use your phones for any reason. Please come prepared to start class promptly every time.

**You may not eat in the classroom during class.** This is a rule made by the Dean. However loosely enforced in your other classes, it will be followed here. You may eat before class begins (before 5 p.m.), during our mid-class break, or after class ends. Drinks are allowed, but please be considerate of your fellow students (e.g., try to open cans quietly, etc.) Please contact me if you need different accommodations.

### **Grading Scale**

94-100 A  
90-93 A-  
87-89 B+  
84-86 B  
80-83 B-  
77-79 C+  
74-76 C  
70-73 C-  
Etc.

### **Course Policies**

**Respect and Safety:** It is imperative that our classroom is open and hospitable to all class members. Throughout the semester I want you to examine your perspectives and values as individuals, engineers, students, and as people situated in a broader society and the environment. As you learn about your classmates, I encourage you to respect and appreciate differences.

**Attendance and Participation:** I expect everyone to behave like the professionals you will soon become. Consequently, I assume you will make every effort to attend all of the lectures. You can be an active participant in class by 1) raising thought-provoking questions, 2) sharing critical or informative comments, 3) contributing to group discussions or assignments, and 4) volunteering.

I understand that you have other professional and personal obligations that may prevent you from attending every class. Since we will only meet once a week, it is important to make the most of our brief time together. You are permitted to miss **one** unexcused lecture during the semester. If you need to be absent more than once, I will require documentation for any additional absences. If you accumulate an unreasonable number of absences, your grade will be adjusted accordingly.

**Late Work:** Any late assignments will lose **10 points** for each day late, starting immediately after the deadline (example: if the assignment is due at 11:59 p.m. and the assignment is submitted at 12:00 a.m., the assignment is one day late and the highest grade you could earn is a 90). This includes weekends. If there are extenuating circumstances that prevent you from turning in an assignment in a timely manner, please contact me as soon as possible.

**Final Grades:** Your final grade will be calculated using UVA's Grading Policies, which are found at: <http://records.ureg.virginia.edu/>

**Academic Integrity:** I expect that all students abide by the University of Virginia Honor Code at all times. Please be aware that cutting and pasting from websites is considered plagiarism. Document all sources, including websites, using APA style guidelines. See the University of Virginia code at <http://www.virginia.edu/honor/> or Honor Guidelines for STS papers <http://guides.lib.virginia.edu/content.php?pid=607723&sid=5088610#tips> for more information. The pledge for STS papers should read as follows:

*On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for STS papers.*

**Support:** If you need help beyond what I can provide, there are numerous support networks at the University of Virginia that provide training, tutoring, or advocacy. Here are a few:

- *STS Librarian:* Maggie Nunley – [maggie@virginia.edu](mailto:maggie@virginia.edu) Brown Science and Engineering Library, Room I-046.
- *STS Subject Guide:* Here you will find the Undergraduate Thesis Manual and other information about appropriate scholarly sources. <http://guides.lib.virginia.edu/sts>
- *Computer Help Desk:* Provides assistance with computer-related problems and computer accounts. <http://its.virginia.edu/helpdesk/>
- *Undergraduate Success:* Lisa Lampe provides links to information and resources needed by undergraduate students at different stages of their careers. **Lisa Lampe**, Director of Undergraduate Success [l4uu@virginia.edu](mailto:l4uu@virginia.edu)
- *Disability Resources Center:* Provides a comprehensive range of academic support services and accommodations for qualified students with disabilities. <http://www.virginia.edu/studenthealth/sdac/sdac.html>
- *Student Financial Aid Office:* Offers information and applications for student funding such as grants, loans, scholarships and student employment. <http://sfs.virginia.edu/>
- *Student Legal Assistance:* Provides legal advice and counsel to all students in areas such as landlord-tenant law, credit reports and collection issues, taxability of scholarships and grants, etc. <http://www.student.virginia.edu/~stud-leg/>

**Individual Accommodations:** It is my goal to create a learning experience that is as accessible as possible. If you anticipate any issues related to the format, materials, or

requirements of this course, please contact me outside of class so we can explore potential options. Students with disabilities 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](http://sdac.studenthealth.virginia.edu). If you have already been approved for accommodations through SDAC, please send me your accommodation letter and contact me so we can develop an implementation plan together.

**Religious Accommodations:** It is the University's long-standing policy and practice to reasonably accommodate students so that they do not experience an adverse academic consequence when sincerely held religious beliefs or observances conflict with academic requirements.

Students who wish to request academic accommodation for a religious observance should submit their request in writing directly to me as far in advance as possible. Students who have questions or concerns about academic accommodations for religious observance or religious beliefs may contact the University's Office for Equal Opportunity and Civil Rights (EOCR) at [UVAEOCR@virginia.edu](mailto:UVAEOCR@virginia.edu) or 434-924-3200.

**Discrimination and power-based violence:** 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](http://www.virginia.edu/sexualviolence).

As your professor and as a person, know that I care about you and your wellbeing and stand ready to provide support and resources as I can. 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 wish to report something that you have seen, you can do so at the **Just Report It** portal (<http://justreportit.virginia.edu/>). **The worst possible situation would be for you or your friend to remain silent when there are so many here willing and able to help.**

## Course Schedule

### Assignments

Gattaca Reflection = 100 points

Thesis Critique = 100 points

Topic Statement = 50 points

Annotated Bibliography 50 points

Prospectus = 300 points

Prospectus Presentation = 100 points

Attendance = 50 points

Participation = 50 points

QQC Reading Comprehension (12 X 10 points) = 120 points

Final Assessment = 100 points

Total = 1,000 points

### WEEK 1

#### August 28: Introduction

Review syllabus and master schedule; activities in class.

### WEEK 2

#### September 4: Gattaca

Class will not meet this week. Watch this from home and work on your Week 3 readings/assignments.

Link to watch:

<http://proxy01.its.virginia.edu/login?qurl=https%3A%2F%2Fdigitalcampus-swankmp-net.proxy01.its.virginia.edu%2Fuva296909%2Fwatch%3Ftoken%3D6774abd7db8b92f24c2ff483bfcfb43f349b43c5b4a9f39bfad2b43fc7adf3ae>

### WEEK 3

#### September 10: 2019 Engineering, Science & Technology Career Fair

*Time: 10 a.m.-3 p.m. Location: John Paul Jones Arena*

#### September 11: Technological Fix; The Social Construction of Technology (SCOT); Technological Determinism

Read:

“Can We Define ‘Technology’?” Chapter 1 by Nye

“Technological Fix” by Newberry

"The Social Construction of Technology: Structural Considerations" by Klein/Kleinman  
"Domestic Technology: Labour-saving or Enslaving?" by Wajcman  
"Technological Determinism in American Culture" by Smith (found in the document  
"Does Technology Drive History"  
[http://proxy01.its.virginia.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=28215&site=ehost-live&scope=site&ebv=EB&ppid=pp\\_VII](http://proxy01.its.virginia.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=28215&site=ehost-live&scope=site&ebv=EB&ppid=pp_VII) )

DUE: Question, Quote, Comment (QQC)  
DUE: Gattaca Reflection (100 points)

#### **WEEK 4**

September 18: Picking a Prospectus Topic; Library Resources and Research Tips

DUE: Thesis Critique (100 points)

#### **WEEK 5**

September 25: Technological Momentum; Does Improved Technology Always Equal Progress?

Read:  
"Technological Momentum" by Hughes (found in the document "Does Technology Drive History"  
[http://proxy01.its.virginia.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=28215&site=ehost-live&scope=site&ebv=EB&ppid=pp\\_VII](http://proxy01.its.virginia.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=nlebk&AN=28215&site=ehost-live&scope=site&ebv=EB&ppid=pp_VII) )  
David Nye (Chapters 2 and 4) "Does Technology Control Us?" AND "How Do Historians Understand Technology?"

DUE: Question, Quote, Comment (QQC)  
DUE: Topic Statement (50 Points)

#### **WEEK 6**

October 2: Political Technologies; Risk Analysis

Read:  
"Do Artifacts Have Politics?" by Winner  
"Risk Society Revisited: Theory, Politics and Research Programmes" by Beck

DUE: Question, Quote, Comment (QQC)  
DUE: Annotated Bibliography (50 points)

## **WEEK 7**

### October 9: Co-Production; Paradigm Shift

Read:

“Ordering knowledge, ordering society” by Jasanoff

"The Priority of Paradigms" by Kuhn (chapter five from *The Structure of Scientific Revolutions*)

DUE: Question, Quote, Comment (QQC)

## **WEEK 8**

### October 16: Methodologies Workshops

DUE: Prospectus Draft

## **WEEK 9**

### October 23: Actor-Network Theory

Read:

"A Brief Overview of Actor-Network Theory: Punctualization, Heterogeneous Engineering & Translation" by Cressman

"Wildlife Tourism, Science and Actor Network Theory" by Rodger, Moore, and Newsome

There will be time to work on your prospectus in class.

DUE: Question, Quote, Comment (QQC)

## **WEEK 10**

### October 30: Peer Editing Workshop; Prospectus Work Day

DUE: Prospectus

## **WEEK 11**

### November 6: The Imitation Game and discussion

READ: David Nye (Chapter 9) “More Security, or Escalating Dangers?”

DUE: Question, Quote, Comment (QQC)  
DUE: Qualifying Exam

## **WEEK 12**

November 13: Prospectus Presentations

## **WEEK 13**

November 20: Prospectus Presentations

## **WEEK 14**

**November 26 is the last day to receive Prospectus approval from your Technical Advisor! (Get those cover pages signed!)**

November 27: Thanksgiving Break

Class will not meet! Gobble gobble...

## **WEEK 15**

December 4: Prospectus Presentations; Conclusion

READ:  
David Nye (Chapter 11) "Not Just One Future"

DUE: Question, Quote, Comment (QQC)  
DUE: Final Assessment (100 points)

**Disclaimer:** I reserve the right to amend the syllabus as the semester progresses. You have the right to make suggestions for readings and assignments. Each class has unique interests, goals, and learning styles; this flexibility allows for a more fruitful discourse.

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