

EST 502, Ethical Decisions in Engineering (3 credits)

Instructor: *Marypat Taveras, Department of Technology and Society, Computer Science, room 1426, Stony Brook University, 631-632-8762 Email - Marypat.Taveras@stonybrook.edu*

Office Hours:

Tuesdays and Thursdays from 1:30 PM to 2:30 PM or by appointment.

Course Description:

The engineering design process involves more than material choices and cost concerns. Individuals and organizations that create technological innovation must also address social and, more importantly, ethical issues.

This course will review formal frameworks drawn from classical ethics. These frameworks will be used as a basis for considering case studies drawn from a variety of engineering disciplines. In addition, modern multi-disciplinary design approaches such as Value Sensitive Design and Biophilic Architecture will be considered as exemplar templates for the explicit incorporation of social and ethical principles into product development.

Learning objectives:

1. Students will evaluate the methods of ethical reasoning.
2. Students will identify, assess, and debate the ethical decisions encountered in the engineering design process.
3. Students will transfer ideas learned in the classroom and apply this knowledge to problem-solve the ethical issues encountered in engineering design.

Required readings:

Shafer-Landau, Russ. *The Fundamentals of Ethics*. New York, NY, Oxford University Press, 2021

Various journal articles posted in Brightspace.

Grading:

Class participation (20%)

Reflection summaries (35 %)

Final Exam (35 %)

Final Presentation (10%)

Reflection summaries

I'm looking for you to transfer the knowledge and skills gained in the classroom and textbook readings and apply this learning to technology case studies. Summaries will be completed in Brightspace and I will provide the case studies after each class lecture.

Final Exam: Take home exam. Due date Monday, May 8th

Final Presentation:

Americans with Disabilities Act: *If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, Room 128, (631)632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.*

Course policies related to integrity of credit

Academic Integrity: *Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/>*

Critical Incident Management: *Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.*

Course Materials and Copyright Statement: *Course material accessed from Blackboard, SB Connect, SB Capture or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.*

Student Learning Resources:

- **Academic and Transfer Advising Services:** Have questions about choosing the right course? Contact an advisor today. Phone: (631) 632-7082 (option 2); email: advising@stonybrook.edu; website: <http://www.stonybrook.edu/commcms/advising/>
- **Amazon @ Stony Brook:** Order your books before classes begin. Phone: (631) 632-9828; email: Bookstore_Liaison@stonybrook.edu; website: <http://www.stonybrook.edu/commcms/bookstore/>
- **Bursar:** For help with billing and payment. Phone: (631) 632-9316; email: bursar@stonybrook.edu; website: <http://www.stonybrook.edu/bursar/>
- **Career Center** The Career Center's mission is to support the academic mission of Stony Brook University by educating students about the career decision-making process, helping them plan

and attain their career goals, and assisting with their smooth transition to the workplace or further education. Phone: (631) 632-6810; email: sbucareercenter@stonybrook.edu; Website: <http://www.stonybrook.edu/career-center/>

- **Counseling and Psychological Services:** CAPS staff are available by phone, day or night.
- **Disability Support Services:** Students in need of special accommodations should contact DSS. Phone: (631) 632-6748; email: dss@stonybrook.edu; <http://www.stonybrook.edu/commcms/studentaffairs/dss/>
- **Library:** Access to online databases, electronic journals, eBooks, and more!
 - **Library Instruction Website** - <http://library.stonybrook.edu/workshops-this-week-citation-skills-worldcat-and-endnote-the-hsc/>
 - **SBU Library Research Guides and Tutorials** <http://library.stonybrook.edu/research/research-basics/>
- **Registrar:** Having a registration issue? Let us know. Phone: (631) 632-6175; email: registrar_office@stonybrook.edu; <http://www.stonybrook.edu/commcms/registrar/>
- **Writing Center:** Students are able to schedule face-to-face and online appointments. <http://www.stonybrook.edu/writingcenter/>
- **Support for Online Learning** <http://www.stonybrook.edu/commcms/onlineed/student.html>
- **Ombuds Office** The Stony Brook University Ombuds Office provides an alternative channel for confidential, impartial, independent and informal dispute resolution services for the entire University community. We provide a safe place to voice your concerns and explore options for productive conflict management and resolution. The Ombuds Office is a source of confidential advice and information about University policies and procedures and helps individuals and groups address university-related conflicts and concerns. <http://www.stonybrook.edu/ombuds/>

Weekly Schedule – updated January 20, 2023

Weeks	Dates	Weekly topics	Case Studies	Textbook Readings
Week 1	1/25/23	Introduction	The Ethics Gap in Technology Development	Introduction, Chapter 1, 2, 3
Week 2	2/1/23	Desire Theory	Do we always have a reason to pursue the development of new technologies?	Chapter 4
Week 3	2/8/23	Normative Ethics: Morality and Religion	Does religion offer reliable moral guidance?	Chapter 5
Week 4	2/15/23	Natural Law, Psychological Egoism, Ethical Egoism	Are war and violence a natural human behavior?	Chapters 6, 7, 8
Week 5	2/22/23	Consequentialism: Its Nature and Attractions Consequentialism: Its Difficulties	Do you think engineers should design technology to produce the most good?	Chapter 9 and 10
Week 6	3/1/23	The Kantian Perspective: Fairness and Justice The Kantian Perspective: Autonomy, Free Will and Respect	Plagiarism Puffery Hooking up	Chapters 11 and 12
Week 7	3/8/23	The Social Contract Tradition: The Theory and its Attractions The Social Contract Tradition: Problems and Prospects	Duty to obey Environmental ethics	Chapters 13 and 14
Week 8	3/22/23	Ethical Pluralism and Absolute Moral Rules Ethical Pluralism: Prima Facie	The Trolley Problem The Tortured Child	Chapters 15 and 16

		Duties and Ethical Particularism		
Week 9	3/29/23	Virtue Ethics Feminist Ethics	Whistleblowing Ethics of Care	Chapter 17 and 18
Week 10	4/5/23	Ethical Relativism Moral Nihilism	Moral Progress Error theory	Chapter 19 and 20
Week 11	4/12/23	Eleven Arguments Against Moral Objectivity	Disagreements in Ethics	Chapter 21
Week 12	4/19/23	Is Moral Knowledge Possible? Five Skeptical Arguments	Moral Skepticism	Chapter 22
Week 13	4/26/23	Presentations		
Week 14	5/3/23	Presentations		