

## **EST 599 - Ethical Decisions in Engineering**

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

### **How we will communicate (office hours):**

Questions about the course content can be asked online in Blackboard under the Discussions link and within the QUESTIONS FORUM. I will be in Blackboard quite frequently, so if you have question regarding the course structure and its content, please post your question in this space. Email me or contact me via Google Hangout if you have a personal issue like a grading concern or an illness.

### **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.

This course will be delivered on-line through the Blackboard learning management system. Each week there will be topic content and reading materials posted within folders labelled *Modules*. Students will be responsible for preparing and explaining all reading materials from the textbook and assigned readings. Weekly group discussions will require substantial engagement with classmates through discussion boards and other forms of on-line interaction. Weekly discussion summaries will also include the preparation of analyses of the discussions that incorporates ethical arguments in support of a thesis.

### **Learning objectives:**

1. Students will learn methods of ethical reasoning
2. Students will gain experience in selecting choices that involve interplay among safety, risk, cost, convenience, and human factors in engineering design and practicenology design criteria.

### **Required readings:**

Leben, Derek. *Ethics for Robots, How to Design a Moral Algorithm*. New York, NY: Routledge, 2019.

Print

### **Grading:**

Exam (33%)

Posts & other on-line interaction (20%)

Weekly written group analyses (13%)

Final Project (due week 15) (33%)

## **Posts & other on-line interactions (group discussions)**

The purpose of the Group Discussion is to engage you in the course content and to promote student to teacher and student to student interactions. Each week I will assign a leader who will participate and guide the discussion. Discussion assignments will be posted Monday mornings. You have 7 days to be “actively present” in the discussion. To be “actively present” in each group discussion, you will be expected to:

- a) respond to the discussion prompt with relevant and well thought out answers to the prompts
- b) Stimulate further thought and conversation by responding to at least 3 of your classmates over the course of the week. A short answer like “I agree or disagree” does not constitute meaningful dialog and will not be counted toward your contribution grade. You will be graded on the content of your answers and your responses to your classmates.
- c) **You must participate throughout the week - you will lose points if you post all your work on a single day.**
- d) **I will not count any posting made after the discussions’ ending date.**

At the end of the week, the group leader will analyze the group postings and submit the summary. Your group will be graded on content, the analysis and how the content incorporates ethical arguments in support of a thesis.

## **Course Delivery Mode and Structure:**

This is an online course, delivered in the Blackboard learning management system. Students must be mindful of all course expectations, assignments and due dates. All assignments and course interactions will utilize internet technologies. See “Technical Requirements” section for more information. In Blackboard, you will access online lessons, course materials, a recorded lecture, and additional resources. LEARNING MODULES; with deadlines on Sunday at end of day.

## **Technical Requirements:**

This course uses Blackboard for the facilitation of communications between faculty and students, submission of assignments, and posting of grades. The Blackboard course site can be accessed at <https://blackboard.stonybrook.edu> If you are unsure of your NetID, visit <https://it.stonybrook.edu/help/kb/finding-your-netid-and-password> for more information. You are responsible for having a reliable computer and Internet connection throughout the term. *Caution! You will be at a disadvantage if you attempt to complete all coursework on a smart phone or tablet. It may not be possible to submit the files required for your homework assignments.*

The following list details a minimum recommended computer set-up and the software packages you will need to have access to, and be able to use:

PC with Windows XP, Vista 7 or 8

Macintosh with OS 10.4 or higher

Latest version of Chrome, Firefox or Explorer; Mac users may use Chrome, Firefox or Safari. (A complete list of supported browsers and operating systems can be found on the My Institution page when you log in to Blackboard.)

2 GB RAM

High speed internet connection

Printer

Word processing software (Microsoft Word, Pages, etc.)

Speakers (either internal or external) or headphones

Ability to download and install free software applications and plug-ins (note: you must have administrator access to install applications and plug-ins).

Adobe Flash player with the latest update is crucial for playing multiple videos throughout the course

### **Technical Assistance:**

If you need technical assistance at any time during the course or to report a problem with Blackboard you can:

Visit the Stony Brook University Student Help Desk Page

Phone:

(631) 632-9602 (technical support and Blackboard issues)

(631) 632-9800 (client support, wifi, software and hardware)

E-Mail: [helpme@stonybrook.edu](mailto:helpme@stonybrook.edu)

Live Chat: [Chat Live with the TLT Student Help Desk!](#)

For assistance after 5 PM or over the weekend, please contact the Open SUNY help desk at 1-844-673-6786 or [OpenSUNYHelp@suny.edu](mailto:OpenSUNYHelp@suny.edu)

***Online Classes Require Better Communication:*** It is important to remember that we will not have the non-verbal cues that occur in a face-to-face classroom. I cannot see the confused, frustrated, or unhappy expressions on your face if you encounter problems. **You MUST communicate with me so that I can help.** To make the experience go smoothly, remember that you're responsible for initiating more contact, and being direct, persistent, and vocal when you don't understand something.

***My Role as the Instructor:*** As the instructor, I will serve as a "guide" in terms of the Discussion Board. While I will not respond to every post, I will read what is posted, and reply when necessary. Expect instructor posts in the following situations:

- To assist each of you when it comes to making connections between discussion, lectures, and textbook material.
- To fill in important things that may have been missed.
- To re-direct discussion when it gets "out of hand".
- To point out key points or to identify important posts.

**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.

**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](mailto: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](mailto: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](mailto: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) 6810; email: [sbucareercenter@stonybrook.edu](mailto: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](mailto: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](mailto: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 Course Outline** – this outline is subject to change. I will notify the group if the dates or the topics change. Last updated January 24, 2020

Weeks	Dates	Topics	Readings	Work
Week 1	1/27 – 2/2	The Ethics Gap in Technology Development	Assigned in Blackboard	<i>Group Discussion</i>
Week 2	2/3 – 2/9	Metaethics	Assigned in Blackboard	<i>Group Discussion</i>
Week 3	2/10 – 2/16	Ethical Theories	Assigned in Blackboard	<i>Group Discussion</i>
Week 4	2/17 – 2/23	Applied Ethics	Assigned in Blackboard	<i>Group Discussion</i>
Week 5	2/24 – 3/1	Ethical Questions in the Design of Technology	Assigned in Blackboard	<i>Group Discussion</i>
Week 6	3/2 – 3/8	Values and Moral Responsibilities	Assigned in Blackboard	<i>Group Discussion</i>
Week 7	3/9 – 3/15	Value Sensitive Design theory	Assigned in Blackboard	<i>Group Discussion</i>
Week 8	3/23 – 3/29	Emerging technologies and Technical Risk	Assigned in Blackboard	<i>Group Discussion</i>
Week 9	3/30 – 4/5	Cybersecurity and ethical decisions	Assigned in Blackboard	<i>Group Discussion</i>
Week 10	4/6 – 4/12	Biophilic Design	Assigned in Blackboard	<i>Group Discussion</i>

Week 11	4/13 – 4/19	Exam		Exam will cover assigned work and textbook
Week 12	4/20 – 4/26	Sustainability, Ethics and Technology	Assigned in Blackboard	<i>Group Discussion</i>
Week 13	4/27 – 5/3	Ethics and policy decisions	Assigned in Blackboard	<i>Group Discussion</i>
Week 14	5/4 – 5/10	Digital Divide, the Ethics of Technology in the classroom	Assigned in Blackboard	<i>Group Discussion</i>
Week 15	5/11 – 5/17	Final Project Due		<i>writing assignment due</i>