
NYU ITP Course Syllabus, Spring 2017

Title: **BODIES OF WAR: ENGINEERING ETHICS**

WWW.BODIESOFWAR.ORG

The problem in defense is how far you can go without destroying from within what you are trying to defend from without.

~Dwight D. Eisenhower

The problem with the drone is it's like your lawnmower. You've got to mow the lawn all the time. The minute you stop mowing, the grass is going to grow back.

~Bruce Riedel, Obama Counterterrorism Advisor

The problem of World War III won't be killing. It will be engineering killing with unforeseen technologies and unknown ethics.

~Lt. Col. U.S. Marine Corps

There is no need to fear or hope, but only to look for new weapons.

~Gilles Deleuze

Course Description:

This course examines 21st-century technologies of war and asks: What is the edge of ethical engineering? Students will critically examine U.S. Military technologies including robotic exoskeletons, military robots, neural prosthetics and networking (brain warfare), biometric scanning, and UAVs (drone warfare). Soldiers from the U.S. Air Force, U.S. Army, and U.S. Marine Corps branches will join class sessions along with guest speakers to discuss the role of new technologies and robotic warfare during their service in Iraq and Afghanistan and the future of technologies. Students will produce a final course project that may be submitted as an essay, multimedia project, or applied technology that engages with the ethical questions posed in the class. Each project will be designed over the course of the semester in direct collaboration with a U.S. Military former or active-duty soldier who will work with students on a theoretical, technical, or performative final project.

Practically, the course poses a design challenge: If the U.S. Military is primarily concerned with engineering “technologies of war,” is there an opportunity for engineers, such as ITP graduates, to engineer “technologies of peace?” What design and function would such “technologies of peace” play and can they intervene in an increasingly militarized U.S. society where Google owns military robotic companies and Apple iPhones are used to detonate bombs throughout the Middle East? Students will produce a final project that may be submitted as an essay, project blueprint, prototype, or applied technology that engages with the ethical questions posed in the class.

Theoretically, the course explores the ethics of engineering 21st-century technologies of war, particularly U.S. Department of Defense technologies that are often developed in handshake with consumer technology (e.g. ARPANET, GPS, ENIAC, CALO Project (i.e. Siri), onion (Tor) routing, and UAV's (drones). In the United States, government, university, and private institutions all collaborate to “look for new weapons” through coordinated engineering and R&D programs. Significantly, these weapons often focus on the human body as the site of military innovation, including the design of technologies that seek to transform the material and physiological bounds of the human body itself through technology. The course thus inquires: What are the ethics of enhancing or replacing human bodies in culture and labor through military-derived technologies?

Course Sessions:

- Week 1: Introduction to Engineering Bodies of War** [\[March 23rd\]](#)
- CLASS: GUIDING QUESTIONS
- How are bodies engineered for U.S. warfare in the early 21st Century?
 - How will human soldiers be enhanced or replaced by robotic, virtual, physio-prosthetic, and unmanned technologies?
 - What are the ethical responsibilities of (ITP) engineers as global citizens to engage with dilemmas of the militarization of technologies and the human body?
- READ: Week 1 Articles: *The Ethics of Engineering* (Online at Class Website)
- POST: 2 Ethical questions/concerns you have about engineering bodies for warfare
1 Paragraph Response to Week 1 Course Readings
- Week 2: Embodied Exoskeletons and Physical Prosthetics** [\[March 30th\]](#)
- CLASS: GUIDING QUESTIONS
- What is a human body? Can the definition of a body be fundamentally changed by integrating—embedding, surgically altering, or enhancing—technologies into it?
 - What are current and anticipated R&D projects to transform “human” soldiers?
 - What ethical, legal, and juridical precedents inform the use of new technologies?
- READ: Week 2 Articles: *The Boundaries of Bodies & Ethics* (Online at Class Website)
- POST: 2 Questions for Guest Speakers for April 6th Class
1 Paragraph Response to Week 2 Readings
- PANEL: [U.S. Military former and active-duty personnel join ITP class for panel](#)
- Week 3: Robotic, Drone, and Unmanned Armies** [\[April 6th\]](#)
- CLASS: GUIDING QUESTIONS
- What makes drone and unmanned warfare different from earlier paradigms?
 - Who is responsible for the human consequences and collateral of deploying “unmanned” military technologies—an operator or his or her drone/robot/UGV?
 - How do (should) engineers participate in the robotic military revolution?
- READ: Week 3 Articles: *Robots and Rights of War* (Online at Class Website)
- EMAIL: Proposal for final project (essay, blueprint or prototype, or technology application)
- POST: 2 Questions for Guest Speakers for April 13th Class
1 Paragraph Response to Week 3 Readings
- PANEL: [U.S. Military former and active-duty personnel join ITP class for panel](#)
- Week 4: Neural Networking, Nanoscience and Biometrics** [\[April 13th\]](#)
- CLASS: GUIDING QUESTIONS
- What happens when you bypass the body and weaponize the brain?
 - What are the ethics of neural networking, nano, and biometric military projects?
 - What discrepancies exist for soldiers between scientific development and the real-time deployment of various technologies?
- READ: Week 4 Articles: *The Networked and Nano Soldier* (Online at Class Website)
- POST: 2 Questions for Guest Speakers for April 20th Class
1 Paragraph Response to Week 4 Readings
- PANEL: [U.S. and UK guest speakers and scholars join ITP class for panel](#)

Week 5: The Ethics of Engineering, Design & Deployment [April 20th]**CLASS: GUIDING QUESTIONS**

- What are the primary ethical paradigms that govern the use of war technologies?
- What are the primary legal and juridical precedents that guide war technologies?
- What professional interventions, if any, are required to be an ethical engineer?

READ: Week 5 Articles: *Just Wars: Design & Deployment* (Online at Class Website)

EMAIL: Proposal 2 for final project (essay, blueprint or prototype, or technology application)

POST: 3 Interview Questions for U.S. Military personnel joining our class

PANEL: [U.S. Military former and active-duty personnel join ITP class for panel](#)

Week 6: Engineering Technologies of Peace [April 27th]**CLASS: GUIDING QUESTIONS**

- What are technologies of peace?
- How will (ITP) engineers engage professionally and productively in R&D ethics?
- What are the responsibilities of engineers to design technologies of peace?

READ: Week 6 Articles: *Designing Technologies of Peace* (Online at Class Website)

EMAIL: Final Project Documentation

Week 7: Final Student Presentations [May 4th]**CLASS: STUDENT PRESENTATIONS**

- Individual Student Presentations (for individual projects)
- Working Group Student Presentations (for group projects)
- Final Student Essay Readings (excerpt of writing)

Pass/Fail Course Grading:

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- ▶ **Attendance and Class Participation: 40%**
 - 1 excused absence permitted.
 - ▶ **Submitted Short Assignments: 30%**
 - Interview questions for guest speakers, short reading response posts, and project descriptions must be submitted on time for full credit. [All posts are due by Tue at 9pm.](#)
 - ▶ **Final Project: 30%**
 - Final projects may take the form of an essay, project prototype, performance or applied technology. Please consider the short course term when determining your project's scope. Assigned project descriptions and final presentations are required for the final project to be considered "complete." Conferences and office hours happily scheduled as needed.
 - ▶ **Note on Course Content:** This course examines military technologies, war tactics and weapons, and ethical considerations of U.S. warfare that may (and should) engender lively, controversial discussion. In the context of a learning environment, the course assumes respect and consideration for every individual's personal, ethical, cultural, religious, and professional views as we engage in dialogue with one another as colleagues, and with outside guest speakers and U.S. Military personnel joining the course.

Course Admin:

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- ▶ **Course Number:** NYU ITP Spring 2017
 - ▶ **Course Location:** NYU ITP, Room 15
 - ▶ **Course Instructor:** Jessica Behm, MPS, PhD
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