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UNIVERSITY OF CONNECTICUT

CSE 3000 Syllabus – Fall 2021

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course and Instructor Information

Course Title: Contemporary Issues in Computer Science and Engineering
Credits: 1
Prerequisites: CSE 3100; CSE 2304 or 3666; open only to CSE and Computer Science majors.
Instructor: Cody Turner
Email: cody.turner@uconn.edu
Office: Manchester 104
Office Hours: Mondays 3-4 pm or by Zoom appointment

All assigned and optional readings for the class will be posted on Huskyct in the form of internet links or PDF files. I plan to have the majority of readings for the course posted onto Huskyct prior to the start of the semester

Course Description

Purpose of course: Look at the broader implications of computer science, consider the ethical and philosophical aspects of computing, discuss the responsibilities of computing professionals and the role of professional societies.

Catalog description: *The global and societal impact of computer science and engineering decisions, professional and ethical responsibility.*

This course provides a forum to discuss ethical and other philosophical issues related to the technological and non-technological aspects of computing. The primary goal is that you be able to critically evaluate and discuss the impacts of computing in ethical, economic, environmental, and societal contexts. A primary focus will be on the professional responsibilities of computer scientists, especially those related to diligent information management, which deals with the level and control of an organization's governance over its information assets.

Readings, Handouts and Audio Lectures

Since the 50-minute class period does not provide ample time for group presentations, a lecture, and class discussion, I have chosen to release an audio lecture as well as a handout each week on Huskyct in conjunction with the assigned readings so that our in-person meetings can be focused on group discussion. Given that this is a 1 credit class, and I do not want to unduly overload you with work, I have made listening to the audio lecture each week optional. Students are encouraged to complete both the required readings and listen to the audio lecture, but this is not mandated. The audio lectures and handouts will be located in the relevant content folder on Huskyct and will be posted in conjunction with the discussion board for that week.

Course Schedule

9/8: Virtual Reality and Augmented Reality

- *Selected Readings*: 'Augmented Reality, Augmented Ethics: Who Has the Right to Augment a Particular Space?' (Erica Neely), 'The Gamer's Dilemma' (Morgan Luck), The Experience Machine' (Ben Bramble), 'Real Moral Problems in the Use of Virtual Reality' (Erick Jose Ramirez and Scott LaBarge), 'The Virtual and the Real' (David Chalmers), 'Virtual Worlds and Narrative Identity' (Marya Schechtman)

9/15: Artificial Intelligence, Automation, and Jobs

- *Selected Readings:* 'History of Digital Ethics' (Vincent C. Muller), 'Automated Cars Meet Human Drivers: Responsible Human-Robot Coordination and the Ethics of Mixed Traffic' (Sven Nyholm & Jilles Smids), 'Automation, Work, and the Achievement Gap' (John Danaher and Sven Nyholm), 'Understanding Neural Networks Through Deep Visualization' (Jason Yosinski, et al.), 'How does Artificial Intelligence Pose an Existential Risk?' (Karina Vold and Daniel R. Harris)

9/22: **AI consciousness, the Singularity, and Radical Brain Enhancement**

- *Selected Readings:* 'The Singularity: A Philosophical Analysis' (David Chalmers), 'Cyborg Divas and Hybrid Minds' (Susan Schneider and Joseph Corabi), 'Minds, Brains, and Programs' (John Searle), 'Brain-computer Interfacing Technology and the Ethics of Neurosecurity' (Marcello Ienca and Pim Haselager)

9/29: Privacy, Government Surveillance, and Surveillance Capitalism

- *Selected Readings:* 'The Vulnerable World Hypothesis' (Nick Bostrom), 'Privacy, Autonomy, and Personalized Targeting: Rethinking How Personal Data is Used' (Karina Vold and Jess Whittlestone), *The Age of Surveillance Capitalism* (Shoshana Zuboff, selected passages)

10/6: Drones

- *Selected Readings*: 'Drones and the Threshold for Waging War' (Ezio Di Nucci), 'Ethical Issues with use of Drone Aircraft' (Richard L. Wilson), 'The Possibilities and Pitfalls of Humanitarian Drones' (John R. emery)

10/13: Internet Censorship and the Dark Web

- *Selected Readings:* 'Some Information is too Dangerous to Be on the Internet' (Vincent Muller), 'The Human Right to Free Internet Access' (Merten Reglitz), 'The Right to Be Forgotten: a Philosophical View' (Luciano Floridi), 'A Digital Ethnography of the Dark Web Social Network' (Robert Gehl)

10/20: Social Media, Fake News, and Virtue Epistemology

- *Selected Readings:* 'Computational Propaganda' (Renee DiResta), 'Fake News and Partisan Epistemology' (Regina Rini), 'A Social-Epistemological Analysis of Autocompleted Web Search' (Boaz Miller and Isaac Record), 'Virtues for Agents in Directed Social Networks' (Mark Alfano), 'Echo Chambers and Epistemic Bubbles' (C. Thi Nguyen), 'How Twitter Gamifies Communication' (C. Thi Nguyen), 'Online Shaming and the Ethics of Public Disapproval' (James Fritz)

10/27: 3D Printing

- *Selected Readings:* 'Ethical Dilemmas in 3D Printing from a US Perspective' (Erica Neely), 'The Security Implications of 3D-Printing of Weapons' (Gerald Walther), 'Ethical and Regulatory Issues Emerging from 3D Bioprinting in Medicine' (Frederic Gilbert et al.)

11/3: Intellectual Property Law and Reverse Engineering

- Selected Readings: 'Ethical Issues Surrounding Intellectual Property Rights' (Jorn Sonderholm), 'How the Digital Turn Upsets Intellectual Property' (Constantin Vica and Emanuel-Mihail Socacio),

'Intellectual Property' (Adam Moore), 'Enforcing Intellectual Property on the Blockchain' (Martin Zeilinger)

11/10: Responsibility for Use of Software, Liability, Open Source

- *Selected Readings:* 'Professional Ethics of Software Engineers: An Ethical Framework' (Yotam Lurie and Shlomo Mark), 'An End-User Perspective on Free and Open-Source Software' (Carl Mitcham), 'From Open-Source Software to Wikipedia: Backgrounding Trust by Collective Monitoring and Reputation Tracking' (Paul B. de Laat)

11/17: Cryptocurrency and Blockchain

- *Selected Readings:* 'Elections, Civic Trust, and Digital Literacy: The Promise of Blockchain as a Basis for Common Knowledge' (Mark Alfano), 'Blockchain Technology as an Institution of Property' (Georgy Ishmaev), 'Notes on Blockchain Governance' (Vitalik Buterin), 'What is Bitcoin?' (Craig Warmke)

12/1: Hacking, Cyber Attacks, Virus Protection, and Encryption

- *Selected Readings:* 'Cyber Attacks and Terrorism: A Twenty-First Century Conundrum' (Marwan Albahar), 'The Ethics of Cyberwarfare' (Randall R. Dipert), 'Is it OK to be an Anonymous?' (Philip Serracino-Inglott), 'Cyber Security and Individual Rights, Striking the Right Balance' (Mariarosaria Taddeo), 'How to Think About Cyber Conflicts Involving Non-State Actors' (Phillip McReynolds), 'Anonymizing Technology in Cyberspace' (Ross Bellaby)

12/8: Information management (no presentation)

- *Selected Readings:* 'Defining Information Security' (Bjorn Lundgren and Niklas Moller), 'Issues in Data Management' (Margi Joshi and Sharon Krag), 'Developing and Communicating Responsible Data Management Policies to Trainees and Colleagues' (Julia Frugoli et al.)

Course Requirements and Grading

Summary of Course Grading:

Course Components	Weight
Final Essay	30%
Participation	20%
Group Presentation	35%
Quizzes	15%

The group presentation consists of an executive summary (20% of total course grade), a vocal presentation (7.5% of total course grade), and a Powerpoint slideshow (7.5% of total course grade)

Group presentation and final essay grades will be emailed directly to students. Grades in the C+ to B- range represent performance that *meets expectations;* Grades in the B+ to A- range represent performance that is significantly *better than the expectations*; Grades in the A range represent work that is *excellent*. You may contact me for information about your current grade or your expected grade in the course.

Group Presentation

Basic Breakdown: Working in teams, students will give a presentation on their chosen topic to the class, which should be approximately 15 minutes long. This presentation should include a powerpoint presentation

and go beyond the assigned readings for that topic. A works cited page should be included at the end of the powerpoint presentation. The overarching goal of the project is to give a nuanced overview of the topic. Prior to the presentation, each team will write and submit an executive summary. The presenters should be prepared to take and answer questions about their topic from the class. I do not expect students to be experts on their topic, but do want to see that each presenter has been thinking about the issues and can competently talk about some component of the topic.

Executive Summary and Powerpoint Presentation*:* Each team will submit a written summary of their readings and discussion. This summary should be a single, *co-written* document, on the order of 3-5 pages single spaced (1500-3000 words) – it should identify the main topic, describe the technology involved/give a brief history of the technology, explain why the topic is a significant societal/ethical issue, present multiple perspectives on the topic, explain how the five CLOs are covered by the topic, and include a works cited page. Each group will email me their executive summary along with their powerpoint slides by midnight on the Tuesday preceding their presentation date. I will make the powerpoint slides available on Huskyct in the relevant content folder as optional viewing content for the rest of the class. For more information on the executive summary, see the *CSE 3000 Further Information* document on Huskyct.

Participation

Students are expected to attend class each week in order to meet the minimal threshold for participation. To receive an A grade for participation, students must also be actively engaged with the course content and contribute to course discussions. There are two ways to actively contribute in this manner: (1) by vocally participating in class discussion during our in-person meetings, and/or (2) by contributing a post to the discussion board onto Huskyct each week. You do not need to do both (1) and (2) in order to receive an A grade for participation, although it is encouraged. As long as you either consistently attend class and vocally contribute to in-person discussions, OR consistently attend class and contribute to the discussion board each week, you will receive an A grade for participation. The discussion board each week will be located in the relevant content folder on our Huskyct class page and will contain a couple of open-ended questions pertaining to the week's topic. Students can contribute to a discussion board on topic X during the week leading up to X and/or in the two days following our discussion of X in class (i.e. Thursday by midnight). Students are encouraged to answer, problematize, or analyze one of these questions in a paragraph or so (around 100-400 words). Students are also encouraged to comment upon each other's posts and use the discussion forum as a platform for lively interaction on the week's topic. Commenting on another student's post is another way to earn participation marks. I will make sure to read and record every discussion board post. If you do comment upon another student's post, the comment should be respectful and professional. Harmful or abusive writing will not be tolerated. The goal is to promote an inclusive learning environment that is hospitable to all students. Be charitable. Give your peers the benefit of the doubt. Try to understand what they intend to say, be respectful of your peers, their points of view and their desire to learn. Disagreeing with a point is good. If you disagree with a point, give a reason for why you disagree. Attacking the person who made the point is not allowed.

Final Essay

Each student will also complete a final essay at the end of the course, which will be due on our scheduled exam date. This essay should be a *single-authored* document, on the order of 1100-1500 words. Unlike the executive summary, the final essay will not be centered around a single topic but will instead be a reflection on the many different topics that the student learned about during the semester. For each CLO, the student will identify which topic they think best covered that CLO (for a total of five topics). At the end of the final essay, the student will then identify which topic they think warrants the most societal attention/allocation of resources; this can be one of the five topics already discussed or it can be an additional sixth topic. For more information on the final essay, see the *CSE 3000 Further Information* document on Huskyct.

Reading Quizzes

There will be three short reading quizzes administered throughout the semester, each administered right at the beginning of class. The quizzes will be announced in advance and mostly consist of multiple-choice

questions with potentially a few short answer questions as well. Additionally, there will be one take-home quiz on the concept of 'Information Management' which students have a week to complete. This quiz will be a very short assignment (3-5 paragraphs) which will be administered towards the end of the semester; it will count as a normal quiz grade.

Grading Scale (per the Registrar):

Grade	Letter Grade
Excellent	A
	A-
Very Good	B+
Good	B
	B-
	C+
Average	C
Fair	C-
Poor	D+
	D
Merely Passing	D-
Failure	F

Due Dates and Late Policy

Assignment deadlines are based on U.S. Eastern Time; if you are in a different time zone, please adjust your submittal times accordingly. *The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.*

If you are unable to complete an assignment on time and have a valid reason (unavoidable study disruptions, health issues, family obligations), then send me an email beforehand to let me know and I am happy to grant an extension. I will make every effort to provide feedback on your papers within a week's time span.

Statement on Coronavirus Pandemic: I understand that the Covid-19 pandemic has thrust us into volatile times. If you ever feel sick and need to quarantine, please shoot me an email and do not come to class. I have intentionally designed the class in a hybrid manner so that students can participate and engage with the course content in an online setting.

Academic Integrity Policy

The Policy: In addition to skills and knowledge, the University of Connecticut aims to teach students appropriate Ethical and Professional Standards of Conduct. The Academic Honesty Policy exists to inform students and Faculty of their obligations in upholding the highest standards of professional and ethical integrity. All student work is subject to the Academic Honesty Policy. Professional and Academic practice provides guidance about how to properly cite, reference, and attribute the intellectual property of others. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this

standard. It is your job to be sure that the instructor has no reason to suspect academic dishonesty. Any perceived dishonesty will be dealt with according to the guidelines of the UConn's Academic Integrity Policy.

Note: Plagiarism implies academic misconduct and is defined as "The practice of taking someone else's work or ideas and presenting them as one's own." Importantly, plagiarism need not be intentional and can be the result of negligence.

Consequences: An instructor may impose a sanction on the student that varies depending upon the instructor's evaluation of the nature and gravity of the offense. Possible sanctions include but are not limited to, the following: (1) Require the student to redo the assignment; (2) Require the student to complete another assignment; (3) Assign a grade of zero to the assignment; (4) Assign a final grade of "F" for the course. A student may appeal these decisions according to UConn's Academic Integrity Policy.

Copyright

My audio lectures, handouts, and displays are protected by state common law and federal copyright law. They are my own original expression and I've created them prior or during my lecture in order to ensure that I obtain copyright protection.

(Student Created Powerpoints) The powerpoint presentations created by students as part of this course are for sole use of the students enrolled in this course. Any other use of these slides or derivatives of them without the written consent of the creator is prohibited.

Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important standards, policies and resources, which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault Reporting Policy

Students with Disabilities and Sexual Harassment Policy

Students with Disabilities: The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or http://csd.uconn.edu/.

Sexual Harassment Policy: It is UCONN policy to maintain a working and learning environment free from sexual harassment and from discrimination. Sexual harassment is illegal under Title VII of the Civil Rights Act of 1964, and Title IX of the Higher Education Amendments of 1972. UCONN will not tolerate sexual harassment of students or employees and will take action to eliminate such behavior. https://titleix.uconn.edu/

Software/Technical Requirements (with Accessibility and Privacy Information)

The University has set minimum device requirements for all students. **NOTE:** Chromebooks do not meet the minimum requirements.

The software/technical requirements for this course include:

- HuskyCT/Blackboard (HuskyCT/ Blackboard Accessibility Statement, HuskyCT/ Blackboard Privacy Policy)
- Microsoft Office/Powerpoint (free to UConn students through uconn.onthehub.com) (Microsoft Accessibility Statement, Microsoft Privacy Statement)
- Dedicated access to high-speed internet with a minimum speed of 1.5 Mbps (4 Mbps or higher is recommended).

For information on managing your privacy at the University of Connecticut, visit the University's Privacy page.

Help

This course is facilitated online using the learning management platform, HuskyCT. The IT Knowledge Base provides students with support, troubleshooting, and how-to information about HuskyCT. The IT Knowledge Base includes a video tour of HuskyCT.

For technical help with HuskyCT, you have access to the in-person/live person support options available during regular business hours through the Help Center. You also have 24x7 Course Support outside of business hours, including access to live chat, phone, and support documents.

Technical and Academic Help provides a guide to frequently asked questions for online students.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.

CS 3000 - Course Learning Outcomes (CLOs) ABET / CSAB Course Learning Outcomes Applicable to CSE 3000

RED indicates coverage by Group Topic, GREEN indicates coverage by Required Group and Individual Deliverables

CLO1 - Ethics:

Understand the importance of ethics, ethical behavior with peers, clients, self, products, and Identify ethical dilemmas and varying perspectives
(requirement met by topic chosen)

CLO2 - Working in Groups: (requirement met by organizing in groups)

Understand the dynamics of groups in order to be able to communicate and work efficiently in a team.

CLO3 - Professional Growth:

Understand various aspects of professional practice of Software engineering such as licensing, economic effects, contracts, certification, etc.
(requirement met by topic chosen)

CLO4 - Social Effects:

Understand legal, social, etc. issues and constraints of software systems. (requirement met by topic chosen)

CLO5 - Legal Considerations:

Understand the laws and rules governing the practice of the Software Engineer profession in your current locale. (requirement met by topic chosen)

CLO6 - Technical Writing: (requirement met by Executive Summary, and Individual Essay)

Communicate effectively using correct English through a written a report.

CLO7 - Public Speaking: (requirement met by Group Presentation)

Present a major talk to a peer audience, covering social and ethical issues in computer science and engineering.

CLO8 - Independent Learning: (requirement met by Choice of Topic and Executive Summary)

Recognize the importance of continuous learning after graduation as an ethical responsibility

CLO9 - Evaluation of Others: (requirement met by participating in Class Discussion and Individual Essay)

Effectively evaluate a peer's presentation.

CLO10 - Professional Responsibility:

Demonstrate a commitment to professionalism and socially responsible behavior. (requirement met by topic chosen)