HNRS 365

Star Trek, Black Mirror, or Terminator? An exploration of where emerging technologies are taking us

Spring 2022

- Instructor: Lili Solorzano
- Department: Honors College and College of Innovation & Design
- Office Location:
- Telephone:
- Email:
- Preferred Method of Contact:
- Office Hours:
- Classroom Day/Time:
- Prerequisites:

How to use this syllabus

This syllabus provides you with information specific to this course, and it also provides information about important university policies. This document should be viewed as a course overview; it is not a contract and is subject to change as the semester evolves. Any changes to the syllabus will be noted in class, and posted in Blackboard.

Academic Integrity

Students at Wichita State University are expected to uphold high academic standards. WSU will not tolerate a lack of academic integrity. Students are responsible for knowing and following the Student Code of Conduct http://webs.wichita.edu/inaudit/ch8_05.htm and the Student Academic Honesty policy http://webs.wichita.edu/inaudit/ch2_17.htm. When the faculty member determines sanctions are warranted for violations of academic integrity, regardless of severity, the faculty member must report the infraction to the Office of Student Conduct and

Community Standards. If you need more information about the process or wish to appeal a decision, please visit https://www.wichita.edu/about/student_conduct/AcademicDishonesty.php.

Course Description

This course is an exploration of emerging technologies such as VR/AR, AI/machine learning, big data, CRISPR, and blockchain. Students will gain an understanding of key concepts and principles of each technology, discuss potential applications, intended and unintended impact to society through tours and hands-on experience. The class will tour a manufacturing or research facility utilizing machine learning and other technologies. Industry guest speakers will discuss emerging technologies in their field.

Topics include:

• AI as an application in today's world and the issues around it

• Machine learning, what it is and how it is applied

• Big data, what is it and how it is impacting your life

• VR/AR and the potential for sharing experiences

• CRISPR and how it's transforming gene therapy

• Blockchain and its applications including cryptocurrency

• 1 - 2 additional student chosen emerging technologies

Definition of a Credit Hour

Success in this 3 credit hour course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction and preparation/studying or course related activities for a total of 135 hours.

Measurable Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- Understand what emerging technologies are

- Understand what AI is and its applications

- Evaluate AI Bias and its impact in society

- Understand the concept of big data and how it can affect you personally

- Understand how AR/VR, robotics/automation, machine learning are used in industry today and their future potential

- Understand what CRISPR is, how can it be applied for medical treatments and therapies, and evaluate ethical considerations

- Understand the concept of blockchain technology and its uses beyond cryptocurrency, including its potential to disrupt a variety of industries

- Articulate solutions to social or organizational problems related to emerging technologies

What makes this course an honors course?

Students are expected not only to participate but also lead much of the topic discussions. Additionally, they will be required to research topics and share their findings related to how emerging technologies are being used in various organizations and social environments to disrupt industries and reach or exclude population segments. This course also has projects that will advance the students knowledge through hands-on experiences.

Required Texts/Readings Textbook

None

Other Readings (Suggested)

Tools and Weapons by Brad Smith

The Inevitable by Kevin Kelly

Additional readings/materials to be provided throughout class.

Other Equipment/Materials

Students are required to have complete access to a functioning laptop or PC with internet capabilities. Document (MS word or similar) and presentation (MS PowerPoint or similar) applications to complete assignments.

Facebook account will be required for use of Oculus device. Oculus units will be provided.

Class Protocol

Expectations: This class thrives on class participation. Each class is designed like mini-workshop so attendance is critical to fully learn the content. Daily

participation points are given and cannot be made up.

If you are not in class it is your responsibility to contact another student to find out what you missed and/or any new assignments given. You are also responsible to be back on track by the next class period (No assignment extensions because you missed class).

All assignments are due at the beginning of class on the assigned day unless otherwise indicated. All assignments are to be typed. Use of computer word processing and bibliographic database software (e.g., EndNote) is highly recommended. Organization, appearance and mechanical correctness are extremely important and will be reflected in points awarded. Use of spell and grammar checking software should only be considered a first step in editing your writing with a review by a peer is highly recommended. Ideally, you would allow enough time in your writing process for review by a peer or at the Learning and Writing Center.

It is expected that you will check your BlackBoard account for messages from your instructor and the department on a daily basis.

Cell phones should be silenced during class.

Contact Policy

Prefer contact by email, but if need be, call or text.
Feel free to email me any questions or concerns following these guidelines:

- If you won't be in class

- Have any question regarding the assignment or a grade

- Remember to sign your name.

- **Always** email me from your WSU email address. Email sent from personal email servers like Gmail, Yahoo, etc., have a tendency to end up in my spam folder, and I may not see them. You may also email me through Blackboard via the Email My Instructor tab. I also offer an Ask My Instructor forum on Blackboard which allows common questions to be seen and responded to publicly.

- You should NOT contact me for tech support.

  o Any technical problems involving your computer, or issues regarding file uploading or sharing, should go through the OneStop. You can contact them at 316-978-3909. You can also fill out a request for help form at their website.

  o However, if you have a problem with access or uploading assignments, you *should* let me know before your assignment is due. You will also have to accompany this notification with the file in question, so I can verify that it is completed by the due date/time.

4

When you email, I will respond to questions as quick as possible, usually within the hour, except weekends or late in the evening may be the next day.

Feedback on Assignments: Will provide feedback on bigger assignments. Smaller assignments or those discussed in class will not have additional feedback.

Grading Scale

WSU uses a +/- grading scale for final grades and to calculate grade point averages. In this class, grades are assigned according to the following chart. (Other classes might assign grades differently: Be sure to understand the different grading scales in all of your classes.)

Points/Percentage	Letter Grade	Grade Points	Interpretation
	A	4.00	A range denotes excellent performance
	A-	3.70	
	B+	3.30	
	B	3.00	B range denotes good performance
	B-	2.70	
	C+	2.30	
	C	2.00	C range denotes satisfactory performance
	C-	1.70	
	D+	1.30	
	D	1.00	D range denotes unsatisfactory performance
	D-	0.70	

Points/Percentage	Letter Grade	Grade Points	Interpretation
	F	0.00	

Assignments

Will be assigned in class and posted on Blackboard. Unless otherwise noted, all assignments are due at the beginning of class. Expect daily exercises and readings that will take up to 90 minutes per day. In most cases it will require less than a hour per day outside of the class.

Extra Credit

Does not apply

Late Assignments

Late assignments will receive a grade deduction, after 2 weeks past the due date the grade is a "0". Final project will not have an extension.

If you are not in class it is your responsibility to contact another student to find out what you missed and/or any new assignments given. You are also responsible to be back on track by the next class period (No assignment extensions because you missed class).

All assignments are due at the beginning of class on the assigned day unless otherwise indicated. All assignments are to be typed. Use of computer word processing and bibliographic database software (e.g., EndNote) is highly recommended. Organization, appearance and mechanical correctness are extremely important and will be reflected in points awarded. Use of spell and grammar checking software should only be considered a first step in editing your writing with a review by a peer is highly recommended. Ideally, you would allow enough time in your writing process for review by a peer or at the Learning and Writing Center.

Missed Assignments and Exams

Grades are based on projects and class participation, exams do not apply. Missed assignments will receive a grade deduction, after 2 weeks past the due date the grade is a "0". Final project will not have an extension.

If you are going to miss a presentation or test you must notify me ahead of time to make arrangements for a make-up presentation or test.

Important Academic Dates

6

For _____semester 20__, classes begin _____, _____ 20__, and end ____, ____, 20__. The last date to drop a class and receive a W (withdrawn) instead of F (failed) is ____, 20__. There are no classes on _____, 20__. The final exam period is _____, 20__.

Disabilities

If you have a physical, psychiatric/emotional, or learning disability that may impact on your ability to carry out assigned course work, I encourage you to contact the Office of Disability Services (DS).

The office is located in Grace Wilkie, room 203, (316) 978-3309 (voice/tty) (316-854-3032 videophone). DS will review your concerns and determine, with you, what academic accommodations are necessary and appropriate for you. All information and documentation of your disability is confidential and will not be released by DS without your written permission.

Counseling & Testing

The WSU Counseling & Testing Center provides professional counseling services to students, faculty and staff; administers tests and offers test preparation workshops; and presents programs on topics promoting personal and professional growth. Services are low cost and confidential. They are located in room 320 of Grace Wilkie Hall, and their phone number is (316) 978-3440. The Counseling & Testing Center is open on all days that the University is officially open. If you have a mental health emergency during the times that the Counseling & Testing Center is not open, please call COMCARE Crisis Services at (316) 660-7500.

Diversity and Inclusion

Wichita State University is committed to being an inclusive campus that reflects the evolving diversity of society. To further that goal, Wichita State University does not discriminate in its employment practices, educational programs or activities on the basis of age (40 years or older), ancestry, color, disability, gender, gender expression, gender identity, genetic information, marital status, national origin, political affiliation, pregnancy, race, religion, sex, sexual orientation, or status as a veteran. Retaliation against an individual filing or cooperating in a complaint process is also prohibited. Complaints or concerns related to alleged discrimination may be directed to the Office of Institutional Equity and Compliance, Wichita State University, 1845 Fairmount, Wichita, KS 67260, telephone 316-978-3187.

Intellectual Property

Wichita State University students are subject to Board of Regents and University policies (see http://webs.wichita.edu/inaudit/ch9_10.htm) regarding intellectual property rights. Any questions regarding these rights and any disputes that arise under these policies will be resolved by the President of the University, or the President's designee,

and such decision will constitute the final decision.

Shocker Alert System

Get the emergency information you need instantly and effortlessly! With the Shocker Alert System, we will contact you by email the moment there is an emergency or weather alert that affects the campus. Sign up at www.wichita.edu/alert.

Student Health Services

WSU's Student Health clinic is located in 209 Ahlberg Hall. Hours are 8:00am to 7:00pm (8:00 am to 5:00 pm on Fridays), though the clinic may be closed occasionally on Wednesdays from noon to 1:30pm. The telephone number is (316) 978-3620. In addition to outpatient and preventive care (including immunizations, a prescription service, and testing/counseling for sexually transmitted infections), Student Health can handle minor injuries. All services are confidential. For more information see www.wichita.edu/studenthealth.

Title IX

Title IX of the Educational Amendments of 1972 prohibits discrimination based on sex in any educational institution that receives federal funding. Wichita State University does not tolerate sex discrimination of any kind including: sexual misconduct; sexual harassment; relationship/sexual violence and stalking. These incidents may interfere with or limit an individual's ability to benefit from or participate in the University's educational programs or activities. Students are asked to immediately report incidents to the University Police Department, (316) 978- 3450 or the Title IX Coordinator (316) 978-5177. Students may also report incidents to an instructor, faculty or staff member, who are required by law to notify the Title IX Coordinator. If a student wishes to keep the information confidential, the student may speak with staff members of the Counseling and Testing Center (316) 978-3440 or Student Health Services (316)978-3620. For more information about Title IX, go to: http://www.wichita.edu/thisis/home/?u=titleix

The Heskett Center and Campus Recreation

Whether you are wanting to be active on campus, relieve the stress from classes or take care of your body, Wichita State Campus Recreation is the place for you. Campus Recreation, located inside the Heskett Center, contributes to the health, education, and development of Wichita State University students, faculty, staff, alumni, and community members by offering quality programs and services. With many programs and facilities which are free to all students and members, Campus Recreation offers its members limitless opportunities. For more information about our services see www.wichita.edu/heskett.

Video and Audio Recording

Video and audio recording of lectures and review sessions without the consent of the

instructor is prohibited. Unless explicit permission is obtained from the instructor, recordings of lectures may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

CARE Team

Wichita State University is committed to the safety and success of and cares about all members of the University community. If you or someone you know needs support, is distressed, or exhibits concerning behavior that is interfering with their own or others' academic or personal success or the safety of members of our community, resources and assistance are available. As your Faculty, I may seek support for you. If you or another member of our campus community is in need of help, please submit a concern at www.wichita.edu/ubit or call any CARE team member listed on that webpage. In case of emergency, please call the University Police Department at (316) 978-3450 or 911.

Concealed Carry Policy

The Kansas Legislature has legalized concealed carry on public university campuses. Guns must be out of view, concealed either on the body of the carrier, or backpack, purse or bag that remains under the immediate control of the carrier.   Gun owners must familiarize themselves with WSU's Concealed Carry Policy at http://webs.wichita.edu/?u=wsunews&p=/weapons_policy_documents and the Kansas Board of Regent's policy at http://www.kansasregents.org/about/policies-by-laws-missions/board_policy_manual_2/chapter_ii_governance_state_universities_2/chapter_ii_full_text#weapons. If you believe that there has been a violation of this policy, please contact the University Police Department at 316 978-3450

Additional Concealed Carry Language for lab courses or other courses where student belongings are unattended and out of immediate control

Under the Concealed Carry Policy, a backpack or other bag used to carry a handgun must be within the immediate control of the individual. This course requires students to leave belongings such as backpacks or other bags out of reach and unattended for the duration of class time. Students who choose to carry a concealed handgun in a backpack or other bag must plan each day accordingly, and are responsible for making alternate arrangements as necessary. Wichita State does not provide publicly available secure storage for concealed handguns. If you believe that there has been a violation of this policy, please contact the University Police Department at 316 978-3450.

Names and Pronouns

Everyone has the right to be addressed as and referred to by the name and pronouns (including non-binary pronouns) that they choose and that correspond to their gender

identity. Class rosters have a student's legal name and do not include pronouns, therefore, all students will be asked in class to indicate the names and pronouns they use for themselves. A student's chosen name and pronouns are to be respected at all times in the classroom.

Tentative Schedule for 8 week class

Week	Date	Topics, Readings, Assignments, Deadlines
1		Overview of emerging technologies Class to research additional topics of interest
2		AI - what is it, how is it used, issues? Class selects additional topic(s) of interest for weeks 14 & 15 AI project assigned
3		AI Bias and ethics Intro to big data and how it fits in AI
4		Big data case studies & discussion \ Ethics of using certain sets of data or how they are used (target pregnancy example)
5		AR/VR -- what is it, how is it used, transformative potential AI – project presentations AR/VR project assigned
6		AR/VR including digital twin continued Machine learning / Robotics & automation – overview
7		Machine learning / Robotics & automation – continued Smart/future Factory, guest speaker Pierre Harter, NIAR R&D Director
8		AR/VR – project presentations

Week	Date	Topics, Readings, Assignments, Deadlines
		Manufacturing facility tour (tentative)
9		Blockchain technology, what is it? and transformative potential Blockchain continued, cryptocurrencies overview and mining demonstration. Blockchain or Automation (student choice) project assigned
10		CRISPR intro, overview, and hands-on experiment utilizing CRISPR kits
11		Socratic exploration on how emerging technologies can be further combined, and what problems it can solve.
12		Unintended consequences (positive & negative) of emerging technologies. Looking back to see forward. Blockchain or Automation (Student choice) project presentations Final Project Assignment
13		Technologies in science fiction - how can we get there? Ethical uses and dilemmas in emerging technologies
14		Student interest topic(s) - determined by class
15		Student interest topic(s) - determined by class Final Project Due
16		Final Project Presentations Close out discussions

Updated for accessibility on October 11, 2017 from content that was updated on August 13th, 2017