IMAGINEERING THE TECHNOSPHERE

INSTRUCTORS:	**COURSE ID:** DCP4930, DIG4905, CLA3930, MEM3931
DR. ANGELOS BARMPOUTIS - Lead Instructor	**CLASS NUMBERS:** 25004, 25625, 25845, 21091
DR. MORRIS (MARTY) HYLTON- Lead Instructor	**SEMESTER/YEAR:** SPRING 2020
DR. ELENI BOZIA	**CREDIT HOURS:** 3.0
DR. SARA RUSSELL GONZALEZ	**CLASS LOCATION:** MSL L136
DR. WILL HASTY	**CLASS MEETING TIME(S):** TUESDAYS 7-9TH PERIODS
DR. KENNETH SASSAMAN	**CONTACT EMAIL:** ANGELBAR@ UFL.EDU
DR. YING XIAO	**COURSE WEBSITE:** HTTP://ELEARNING.UFL.EDU/

COURSE DESCRIPTION

This multi-disciplinary, team-taught course explores the separation between nature and culture as humans develop and use technology to imagine and modify the environments they occupy and ultimately create the technosphere (past, present, and future). Examining a range of technologies and technological advances from different time periods and contexts (social, cultural, political, etc.), students will gain a better understanding of how technology has shaped our lives and world. The course will also investigate a range of digital technologies and how they might help us address some of the more pressing problems we face today and in the future. Particular emphasis is placed on the act of understanding, visualizing, conceptualizing, making, and shaping our world and the benefits and challenges of technology in the process.

PREREQUISITE KNOWLEDGE AND SKILLS

There are no pre- or co-requisites for this course.

PURPOSE OF COURSE

The purpose of this course is to respond to the grand challenge question: "How do technologies influence our lives, then and now?" from the perspectives of our 6 thematic units:

 Inventions and Sciences

 Spaces and Infrastructure

 Past and Future

 Imagining and Designing

 Conservation and Sustainability

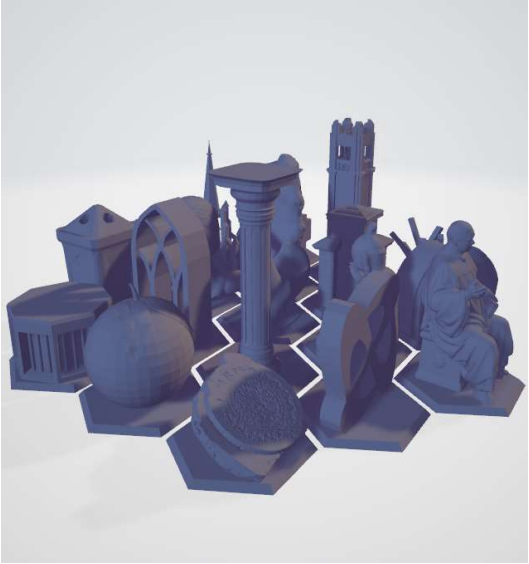
 Culture and Society

This interdisciplinary approach will equip the students with foundational knowledge and tangible skills through weekly modules and experiential learning activities that will be organized as part of the "UF Quest Game", a gamified learning experience specially designed for this course. The students will be able to transcend the boundaries of traditional disciplines and demonstrate how the humanities serve as the foundation for understanding science and technology and how this holistic approach could affect our decision making processes in ourselves, and on a planetary scale.

COURSE GOALS AND/OR OBJECTIVES: At the conclusion of this course, students will be able to:

1. Transcend the boundaries of traditional disciplines and demonstrate how the humanities serve as the foundation for understanding science and technology.
2. Explore and possibly redefine humanity as a creature of technology, Homo technos.
3. Develop a broad view of technology as techne and to blur the boundaries of art, culture, science, and its products.
4. Reveal the active process of making, fashioning, and designing in landscapes, buildings, social environments, and in ourselves, and on a planetary scale. Students will reconsider the cultural significance of physical constructions from the past and present.
5. Introduce students to alternative temporalities, different ways that the past, present, and future relate.
6. Present the contributions of arts and humanities disciplines to interaction design.
7. Enable students to analyze and evaluate technological human experiences using standard methodologies for interaction design

THE UF QUEST GAME: In the beginning of the semester each student will be given a box with the UF Quest Game, a specially designed learning experience that will be used in each module of this course. Using an old aerial photograph of the UF campus as a map and a GPS app as a guide, students and faculty engage in a unique adventure through space and time. This time travel can be used as an experiential learning tool that moves the student outside of the traditional classroom setting to explore how humans use technology to alter our physical world. During this journey students can discover what the lessons of the past inventions can teach us about how to address the problems facing humanity today, particularly as they emerge in the "technosphere," the landscape shaped by the human hands.



HOW TO PLAY: The instructors of this course have identified 21 landmarks on UF campus and associated them with important critical thinking questions from our 6 thematic units. During the semester you will be asked to explore these landmarks in order to complete a weekly task, such as a critical thinking assignment or related project.

Use the Time Traveler App to unlock and explore the 21 hidden UF landmarks in the UF Quest Game. Complete the assigned task in each place to earn a 3D printed token for your game board. New destinations will be released every week of the semester. Try to complete your game board by collecting as many 3D tokens as you can, including the bonus ones.

THE INSTRUCTORS:

Each instructor will offer 2 modules that will cover topics from our 6 thematic units as shown in the following diagram.

Names / Affiliations	Thematic Units	Topics
Angelos Barmpoutis Digital Worlds Institute		Human-Computer Interaction, the effects of wearable technologies on the human body, the influence of Artificial Intelligence in our life
Eleni Bozia Classics		Technology as cultural production, digitization tools, technology's effect on historic preservation and authenticity of experience.
Sara Russell Gonzalez Marston Science Library		Technology for social good vs. risks, Impact of visualization on how society understands a problem or artifact, Genomics & ethical dilemmas.
Will Hasty Languages, Lit. & Cultures		Artificial Hand, Human and Nature, Digital Cosmology, Binary or "digital" relations of eternal and immediate, infinite and infinitesimal.
Morris (Marty) Hylton Construction and Planning		Technology and Cultural Heritage Conservation, terrestrial laser scanning, photogrammetry, and drone imaging.
Ken Sassaman Anthropology		Temporalities of modern technologies, alternative temporalities, impact of Virtual Reality visualizing the past to inform the future.
Ying Xiao Languages, Lit. & Cultures		Sci Fi discourse on modernism and futurism, Cyborgism, Eastern vs. Western cultural effect on technosphere vis-à-vis artscape.

COURSE SCHEDULE:

Week	Topic	Instructor	Thematic Units
Jan 7	Introduction of the Course and History of Science	All Instructors	
Jan 14	Hands: A Digital Cosmology - Literal Grips	Will Hasty	
Jan 21	Hands: A Digital Cosmology – Figurative Grips	Will Hasty	
Jan 28	Experience Design: Beyond Human-Computer Interaction	Angelos Barmpoutis	
Feb 4	Media, Movement, and Machines	Angelos Barmpoutis	
Feb 11	Technology and Invention in Pre-Modern Asian Contexts	Ying Xiao	
Feb 18	Science Fiction Film & the Representation and Prefiguring of Technology	Ying Xiao	
Feb 25	Technology as Cultural Production I	Eleni Bozia	
Mar 10	Technology as Cultural Production II	Eleni Bozia	
Mar 17	If Progress is Our Future, Why Look Back?	Ken Sassaman	
Mar 24	Ruins for the Future	Ken Sassaman	
Mar 31	Technology and Cultural Heritage Conservation	Marty Hylton	
Apr 7	Digitally Preserving the Past for the Future	Marty Hylton	
Apr 14	Technology, Society, and Ethical Dilemmas	Sara Gonzalez	
Apr 21	Technology for Social Good: The Case of 3D printing	Sara Gonzalez	
Apr 30	Final Student Presentations 12:30-2:30pm	All Instructors	

READING MATERIALS:

- Hawking, S., Musk, E. et al. (2015) Research Priorities for Robust and Beneficial Artificial Intelligence: An Open Letter, January 2015.
- Read about the "Trolley problem" from the book: Foot, Philippa. (1978). The Problem of Abortion and the Doctrine of the Double Effect in Virtues and Vices, Oxford: Basil Blackwell.
- Hines, Albert C., Don P. Chambers, Tonya D. Clayton, Mark R. Hafen, and Gary T. Mitchum (2016) *Sea Level Rise in Florida: Science, Impacts, and Options*. Gainesville: University Press of Florida.
- Dawdy, Shannon Lee (2016). *Patina: A Profane Archaeology*. Chicago: University of Chicago Press.
- Thompson, E. P. (1967). Time Work-Discipline, and Industrial Capitalism. *Past and Present* 38:56-97.
- Chapters 16-17, York, D. G., Gingerich, O., & Zhang, S. (Eds.). (2011). *The astronomy revolution : 400 years of exploring the cosmos*.
- Chapter 18: "The Future of Nanotechnology" and Chapter 19: "Society's Grand Challenges" in Ramsden, Jeremy J. (2018). *Applied Nanotechnology - The Conversion of Research Results to Products (3rd Edition)* Elsevier.
- Maxmen, Amy. "Three Technologies That Changed Genetics." *Nature*, vol. 528, Dec. 2015, pp. S2–3. *www.nature.com*, doi:10.1038/528S2a.
- Pugh, Jonathan. "Driven to Extinction? The Ethics of Eradicating Mosquitoes with Gene-Drive Technologies." *Journal of Medical Ethics*, vol. 42, no. 9, Sept. 2016, pp. 578–81. *jme.bmj.com*, doi:10.1136/medethics-2016-103462.
- Joseph and Frances Gies, *Life in a Medieval City* (New York: Harper & Row, 1969), especially chapter 10, The Cathedral, 135-153 and chapter 11, Schools and Scholars, pp. 154-165.
- C.H. Lawrence, *Medieval Monasticism: Forms of Religious Life in Western Europe in the Middle Ages*, 3rd ed. (New York: Routledge, 2013), especially chapter 1, The Call to the Desert, pp. 1-17.
- Frances and Joseph Gies, *Cathedral, Forge, Waterwheel: Technology and Invention in the Middle Ages* (New York: HarperCollins, 1994). Especially chapter 1: Nimrod's Tower, Noah's Arc" (1-16), chapter 2: The Triumphs and Failures of Ancient Technology (17-38), chapter 3: The Not-So Dark Ages: A. D. 500-900, and ch. 4: The Asian Connection (82-104).
- Excerpts from *The Book of Ser Marco Polo: The Venetian Concerning Kingdoms and Marvels of the East*
- Excerpts from *The Scientific Revolution (Greenhaven World History Program)* by Peter Amey
- Chapters of *The Society of Spectacle* by Guy DeBord
- Chapters of *Science Fiction Film: A Critical Introduction* by Keith M. Johnston
- Chapters of *Liquid Metal: The Science Fiction Reader* ed. by Sean Redmond
- Wythe, Deborah. "New Technologies and the Convergence of Libraries, Archives, and Museums." *RBM: A Journal of Rare Books, Manuscripts, and Cultural Heritage* 8.1 (2007).
- Berry, David M. *Understanding Digital Humanities*. Palgrave Macmillan, 2012.
- Bodenhamer, David J., Corrigan, John, and Harris, Trevor M, eds. *Deep Maps and Spatial Narratives*. Bloomington: Indiana University Press, 2015.
- Di Giuseppantonio, P. et al. (eds.) 2018. *Authenticity and cultural heritage in the age of 3D digital rerpoductions*. McDonald Institute for Archaeological Research. (selection of chapters)
- Meskell, L. 2018. *A Future in Ruins*. Oxford University Press. (selection of chapters)

ADDITIONAL RESOURCES:

- To see how the Dutch have dealt with and continue to deal with rising sea, check out this New York Times feature from June 2017: https://www.nytimes.com/interactive/2017/06/15/world/europe/climate-change-rotterdam.html
- Since China stopped accepting the world's plastic refuse at the end of 2017, the recycling industry is challenged to find alternatives. Check out this 2018 story from the online news of National Geographic for a review of some of the challenges and possible solutions: https://www.nationalgeographic.com/news/2018/06/china-plastic-recycling-ban-solutions-science-environment/
- Check out the efforts of the Long Now Foundation to foster long-term thinking with projects in art, music, and technology: http://longnow.org/

- "Can Genes Be Patented?" *Genetics Home Reference*, https://ghr.nlm.nih.gov/primer/testing/genepatents.
- Richard W. Young, "Evolution of the human hand: the role of throwing and clubbing": https://onlinelibrary.wiley.com/doi/full/10.1046/j.1469-7580.2003.00144.x);
- Genesis, Latin and English Online: http://vulgate.org/ot/genesis_2.htm
- New York Times: "How Robot Hands are evolving to do what ourscan": https://www.nytimes.com/interactive/2018/07/30/technology/robot-hands.html.
- Video: Building the Great Cathedrals: https://www.youtube.com/watch?v=IYOysQvaOqk&t=5s
- Gottfried von Leibniz, "Explanation of Binary Arithmetic": http://www.leibniz-translations.com/binary.htm).
- https://www.nature.com/news/the-mountain-top-battle-over-the-thirty-meter-telescope-1.18446
- Film: *Beijing 2008 Olympic Opening Ceremony* (NBC, 2008)
- Film: *Blade Runner* (dir. Ridley Scott),
- Film: *Minority Report* (dir. Steven Spielberg, 2002),
- Film: *Ready Player One* (dir. Steven Spielberg, 2018),
- Film: *Black Panther* (dir. Ryan Coogler, 2018)

MATERIALS AND SUPPLIES FEES:

Material and supply fees are assessed for certain courses to offset the cost of materials or supply items consumed in the course of instruction. A list of approved courses and fees is published in the Schedule of Courses each semester. (UF-3.0374 Regulations of the University of Florida)
Material and supply and equipment use fee information is available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total M&S for this class is $0

EVALUATION OF GRADES

Assignment	Total Points	Percentage of Grade
Weekly assignments: During the semester you will be asked to complete a weekly task, such as a critical thinking assignment or project related to the UF Quest Game. There are 21 weekly tasks, 4pts each (2pts for instance video responses and 2pts for the discussion thread).	84	70%
Attendance and Participation – Students are expected to actively participate in class. Attendance will be taken.	10	10%
Final essay or project: A 2000 word essay or final project that responds to the question "How do technologies influence our lives?". In addition all students need to create a 1-min video.	20	20%

GRADING SCALE:

Letter Grade	% Equivalency	GPA Equivalency
A	94 – 100%	4.0
A-	90 – 93%	3.67
B+	87 – 89%	3.33
B	84 – 86%	3.00
B-	80 – 83%	2.67

C+	77 – 79%	2.33
C	74 – 76%	2.00
C-	70 – 73%	1.67
D+	67 – 69%	1.33
D	64 – 66%	1.00
D-	60 – 63%	.67
E, I, NG, S-U, WF		0.00

More information on grades and grading policies is here:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

COURSE POLICIES:

PARTICIPATION / ATTENDANCE

In our course, attendance for On-Campus and RT On-Line students is mandatory. Students are allowed **three unexcused absences**. If you miss more than **three classes** during the semester, each additional absence will lower your overall grade by **10 points**. If you miss more than **six classes**, you will fail the course. Exempt from this policy are only those absences involving university-sponsored events, such as athletics and band, and religious holidays, family emergencies, and health issues for which **you must provide appropriate documentation in advance of the absence**.

Additionally, tardiness will not be tolerated. If you are tardy for three class periods, you will receive an unexcused absence.

YOT On-Line students will be expected to stay in sync with the rest of the class, and to achieve their participation portion by recording/writing their responses to course material in advance of each lecture at least once a week.

MAKE-UP POLICY

Unless discussed at least 72 hours in advance of the deadline, late assignments will not be accepted. Excluded from this policy are any assignments missed due to medical emergencies.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

COURSE COMMUNICATIONS

Students can communicate directly with the Instructor regarding the course material through UF e-Learning. http://elearning.ufl.edu/

COURSE TECHNOLOGY SUPPORT:

The Technology Support Center provides computer support for Digital Worlds students who access Visimeet, lecture recordings, student equipment, facilities and other technology-based resources. http://digitalworlds.ufl.edu/support

For computer assistance related to Visimeet, lecture recordings, student equipment, and facilities request please Submit a Help Ticket or email support@digitalworlds.ufl.edu.

For support related to account services, technical consulting, mobile device services, software services, administrative support, application support center, and learning support services, please contact the UF Computer Help Desk available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

UF POLICIES:

UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge that states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

CLASS DEMEANOR

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

STUDENTS REQUIRING ACCOMMODATIONS

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

NETIQUETTE COMMUNICATION COURTESY

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at: http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf

ONLINE COURSE EVALUATIONS

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at evaluation results.

CAMPUS RESOURCES

HEALTH AND WELLNESS

U Matter, We Care

If you or a friend is in distress, please contact umatter@ufl.edu or 352 392- 1575 so that a team member can reach out to the student.

Counseling and Wellness Center
http://www.counseling.ufl.edu/cwc/Default.aspx, 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department, 392-1111 (or 9-1-1 for emergencies). http://www.police.ufl.edu/

ACADEMIC RESOURCES

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.
http://www.crc.ufl.edu/

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.
http://teachingcenter.ufl.edu/

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.
http://writing.ufl.edu/writing-studio/

Student Complaints Campus:
https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints:
http://www.distance.ufl.edu/student-complaint-process