

Course Syllabus

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COURSE SYLLABUS

San José State University GLST 156 Section 80

Spring 2025 - Technology of the Modern World

(Emergency & Disaster Management Lens)

January 21st to May 23rd, 2025

Course and Contact Information

Instructor:

Prof. Erik Wood ([SJSU Bio Link](#)
(<https://sjsu.instructure.com/courses/1598874/users/4645794>)
)

Office Location:

Zoom Online

Email:

erik.wood@sjsu.edu (<mailto:erik.wood@sjsu.edu>)

***SJSU requires you to use Canvas Inbox
for all course-related communications**

Office Hours:

Tuesday @ 11:45AM or by appt.

Class Days/Time:

Tuesday/Thursday from 10:30-11:45AM

***Classroom:**

ZOOM LINK HERE  (<https://sjsu.zoom.us/j/82620819156?pwd=YdTwKy92bhbiyd7idEAysqDo7dvlQN.1>)

***Cameras need to be on during class**

Course Information as a Technology Intensive Online Course

This course adopts an online classroom delivery format. A computer with internet connectivity and Canvas is required for students to participate in class activities and submit assignments. See University Policy F13-2 at <http://www.sjsu.edu/senate/docs/F13-2.pdf> for more details. All course material developed by the instructor is the intellectual property of the instructor and is to be used for private, study purposes only, and cannot be shared publicly or uploaded without the instructor's approval (see University policy S12-7).

Canvas and MYSJSU Messaging Copies of the course materials such as the syllabus, major assignment handouts, and grades can be found on Canvas Learning Management System course login website.

You are responsible for regularly checking with the messaging system through MySJSU or Canvas to learn of any updates. This includes contents of Canvas Announcements

Course Description

In this course, we will examine the relationship between technology, society, and the growing role of technology in Emergency and Disaster Management (EDM). Topics include Science and Technology Studies (STS); Gender and Technology; Ethnoscience and Technoscience; The Military-Industrial Complex; Technology in Disaster Response; Energy, Technology, and Climate Change; IT, Society, and Disaster Preparedness. Students will evaluate how technological innovation impacts disaster mitigation, recovery, and resilience, and explore the ethical dilemmas posed by technological interventions in crisis situations. By integrating EDM into this course, students will gain a deeper understanding of how technological advancements affect disaster preparedness, response, and recovery, and develop the skills necessary to address complex challenges in global disaster management.

Learning Outcomes (with EDM Principles)

- **Evaluate and apply diverse perspectives** to complex subjects in technology and disaster management, considering conflicting positions (e.g., ethical, cultural, and disciplinary) in crisis situations.
- **Demonstrate understanding of the role of technology in disaster preparedness and response** across various cultures, assessing its historical and contemporary impact on societies.
- **Apply knowledge and skills** from technology studies to develop solutions for managing disasters, using interdisciplinary approaches to address global challenges in disaster mitigation, preparedness, and recovery.
- **Describe and analyze global case studies** that illustrate how technologies have been used effectively or poorly in managing disasters, and assess the differential effects of such technologies across societies.
- **Advocate for ethical and appropriate actions** in the deployment of technology for disaster management, evaluating the social, economic, and environmental consequences of these technological interventions.

Required Textbooks

1. **Winner, (2020).** *The whale and the reactor: A search for limits in an age of high technology.* University of Chicago Press. ISBN 9780226692548 (2020 version)
2. **González, J. (2020).** *Connected: How a Mexican Village Built Its Own Cell Phone Network.* University of California Press. ISBN 9780520344211 (2020 version)

NOTE: All other reading will be provided within Canvas via links to peer-reviewed publications

Course Requirements

- Participation 15%
- Quizzes 30%
- Midterm Research Paper 25%
- Final Research Paper 30%

*See Canvas for a list of assignments – See Assignment Tab

Weekly Topics and Readings

Week 1: Course Introduction and Technology in Society

- **The Syllabus (Click Canvas Tab, left margin)**
 - In a synchronous course like this, the syllabus is a guide so please give yourself 15-30 minutes to review. You are responsible for the contents.
 - Winner - CHAPTER 1 – 3 “Technology as Forms of Life,” “Do Artifacts Have Politics?” and “Techne and Politeia”

Week 2: Technology and Society: Philosophy of Technology

- READ: Winner, Chapter 2; "Building a Better Mousetrap"
- READ: Overview of STS and its connection to disaster resilience:
 - Knowles, S. G. (2014). Learning from disaster?: The history of technology and the future of disaster research. *Technology and Culture*, 55(4), 773-784. [↗ \(https://muse.jhu.edu/article/562831\)](https://muse.jhu.edu/article/562831) (DOWNLOAD TO READ)
- WATCH: Dr. Ryan – Short video NOTE: This press conference was held in March 2020 (early start to Covid)
 - LINK: <https://x.com/SkyNews/status/1238504143104421888> [↗ \(https://x.com/SkyNews/status/1238504143104421888\)](https://x.com/SkyNews/status/1238504143104421888)

Week 3: Technology and Society: Reform and Revolution

- End of Week 2 Quiz - Knowledge Check
- READ: Winner, Chapter 5 - “Decentralization Clarified”
- EXPLORE historical shifts in technology, and how these shifts relate to modern disaster management frameworks.
- READ: Introduction to EDM concepts and how technology relates to disaster management.
 - Krichen, M., Abdalzaher, M. S., Elwekeil, M., & Fouda, M. M. (2024). Managing natural disasters: An analysis of technological advancements, opportunities, and challenges. *Internet of Things and Cyber-Physical Systems*, 4, 99-109. [↗ \(https://www.sciencedirect.com/science/article/pii/S2667345223000500\)](https://www.sciencedirect.com/science/article/pii/S2667345223000500)

Week 4: Technology, Risk, and Disaster

- READ: Winner, Chapter 8 - Risk Assessment: A Hazardous Pursuit
- WATCH: Video: “Nuclear Turning Point: The Birth of The Atomic Age | The Real Oppenheimer.” Timeline - World History Documentaries Available at:

<https://www.youtube.com/watch?v=evmnlffc890> [↗ \(https://www.youtube.com/watch?v=evmnlffc890\)](https://www.youtube.com/watch?v=evmnlffc890)



(<https://www.youtube.com/watch?v=evmnlffc890>)

- **READ:** Sikder, A. S., & Harvey, K. (2023). Techno-resilience: unraveling the impact of cutting-edge information technology in crisis management and emergency response for enhanced disaster preparedness and response efficiency.: IT in crisis management and emergency response. [International Journal of Imminent Science & Technology, 1\(1\), 138-169](https://journal.ijisnt.com/index.php/public_html/article/view/17/17). ↗(https://journal.ijisnt.com/index.php/public_html/article/view/17/17)
 - Make sure to read the abstract and introduction and pay attention to Table 1 in Section 4
- **DISCUSS:** Discussion of how technological advancements have increased both the capacity for disaster recovery and the risks associated with technological failures.

Week 5: Technology, Energy, and Climate-Related Disasters

- **READ:** Zhao, X. X., Zheng, M., & Fu, Q. (2022). How natural disasters affect energy innovation? The perspective of environmental sustainability. [Energy Economics, 109, 105992](https://www.sciencedirect.com/science/article/abs/pii/S0140988322001657). ↗(<https://www.sciencedirect.com/science/article/abs/pii/S0140988322001657>)
- Please REVISIT: **Winner**, Chapter 1: "Technologies as Forms of Life" and Chapter 2: "Do Artifacts Have Politics?"
- **DISCUSS:** Explore the role of energy technologies in climate change and disaster preparedness.

Week 6: Technology and Equity in Disasters

- **READ:** Sanders, Monica. (2023) *How climate vulnerability and the digital divide are linked*. Available at <https://www.technologyreview.com/2023/06/20/1074244/climate-vulnerability-digital-divide/> ↗(<https://www.technologyreview.com/2023/06/20/1074244/climate-vulnerability-digital-divide/>). (Scroll to read, no need to download)
- **CHECK** back in with this Week 2 Citation –
 - **Knowles, S. G. (2014).** *Learning from disaster?: The history of technology and the future of disaster research*. ↗(<https://muse.jhu.edu/article/562831>). (*Technology and Culture*, 55(4), 773-784.)
 - Focus on the interplay between technology and social vulnerabilities during disasters.
 - **READ:** Gupta, Y., Liu, Z., & Mostafavi, A. (2023). [Digital Divide in Disasters: Investigating Spatial and Socioeconomic Disparities in Internet Service Disruptions During Extreme Weather Events](https://arxiv.org/pdf/2312.08640) ↗(<https://arxiv.org/pdf/2312.08640>). *arXiv preprint arXiv:2312.08640*.

Week 7: Science, Technology, Gender, and Disasters

- Mid-term Research Paper
- **READ HISTORICAL PERSPECTIVE:** Cowan, R.S. (1987). *American Heritage*. Vol 38; Issue 6. Available at <https://www.americanheritage.com/less-work-mother> ↗(<https://www.americanheritage.com/less-work-mother>)
- **WATCH:** Films - *Women in Science, Women in Technology* - https://www.youtube.com/watch?v=GBIpJ8p0t_o ↗(https://www.youtube.com/watch?v=GBIpJ8p0t_o)



(https://www.youtube.com/watch?v=GBIpJ8p0t_o)

- **READ:** *Tech, Disasters, and Gender: Leveraging Digital Technologies for Flood Response* – available at: <https://www.orfonline.org/expert-speak/tech-disasters-and-gender> ↗(<https://www.orfonline.org/expert-speak/tech-disasters-and-gender>)

Week 8: Technology and Health in Disaster Situations

- End of Week 7 Quiz - Knowledge Check
- READ: Klein, K. and Lappe, A, (2019) "What the Pesticides In Our Urine Tell Us About Organic Food." The Guardian. Available at <https://www.theguardian.com/commentisfree/2019/feb/15/what-the-pesticides-in-our-urine-tell-us-about-organic-food> ↗ (<https://www.theguardian.com/commentisfree/2019/feb/15/what-the-pesticides-in-our-urine-tell-us-about-organic-food>)
- WATCH: Film - *The Empathy of Food* - <https://www.youtube.com/watch?v=JS1sVHlrW9k> ↗ (<https://www.youtube.com/watch?v=JS1sVHlrW9k>)



(<https://www.youtube.com/watch?v=JS1sVHlrW9k>)

- READ: Lokmic-Tomkins, Z., Bhandari, D., Bain, C., Borda, A., Kariotis, T. C., & Reser, D. (2023). Lessons learned from natural disasters around digital health technologies and delivering quality healthcare. *International journal of environmental research and public health*, *20*(5), 4542. ↗ (<https://www.mdpi.com/1660-4601/20/5/4542>)
([DOWNLOAD PDF](#))
- DISCUSS: Explore how health technologies are employed in disaster zones, focusing on public health management during crises.

Week 9: Technology, the Environment, and Natural Disasters

- READ: Voulvoulis, N., & Burgman, M. A. (2019). The contrasting roles of science and technology in environmental challenges. *Critical Reviews in Environmental Science and Technology*, *49*(12), 1079-1106. Available at <https://www.tandfonline.com/doi/full/10.1080/10643389.2019.1565519> ↗ (<https://www.tandfonline.com/doi/full/10.1080/10643389.2019.1565519>) (hit "view PDF")
- WATCH: Film - *Life Off Grid* - <https://sjsu.kanopy.com/video/life-grid> ↗ (<https://sjsu.kanopy.com/video/life-grid>)
- READ: Sarker, M. N. I., Peng, Y., Yiran, C., & Shouse, R. C. (2020). Disaster resilience through big data: Way to environmental sustainability. *International Journal of Disaster Risk Reduction*, *51*, 101769. ↗ (<https://www.sciencedirect.com/science/article/abs/pii/S2212420920312711>)
- DISCUSS: Investigate environmental technologies and their role in disaster recovery and resilience planning.

Week 10: IT, Society, and Disaster Preparedness

- READ/RE-VISIT: Winner, Chapter 1 : "Technologies as Forms of Life"
 - *Consider how technology becomes embedded in the fabric of society, shaping behaviors, social systems, and preparedness efforts.*
- READ: Shah, S. A., Seker, D. Z., Hameed, S., & Draheim, D. (2019). The rising role of big data analytics and IoT in disaster management: recent advances, taxonomy and prospects. *IEEE Access*, *7*, 54595-54614. ↗ (<https://ieeexplore.ieee.org/abstract/document/8698814>)
- DISCUSS: Examine the role of information technologies in disaster management (e.g., early warning systems, crisis communication, and data analytics).

Week 11: Spring Break

Week 12: Technoscience, Ethnoscience, and Indigenous Knowledge in Disasters

- READ: Gonzalez, Chapter 1 "Connected"

- READ: Fernández-Llamazares, Á., Lepofsky, D., Lertzman, K., Armstrong, C. G., Brondizio, E. S., Gavin, M. C., ... & Vaughan, M. B. (2021). Scientists' warning to humanity on threats to indigenous and local knowledge systems. *Journal of Ethnobiology*, *41*(2), 144-169. <https://journals.sagepub.com/doi/full/10.2993/0278-0771-41.2.144>
- DISCUSS: Explore how indigenous knowledge systems contribute to disaster risk reduction and the role of technology in supporting or undermining these systems.

Week 13: Connected: Technology and Global Disaster Responses

- READ: Gonzalez, Chapters 2 “Innovation” AND Chapter 3 “Enchanted”
- RECALL: Dr. Ryan – Short video from Week 2. NOTE: This press conference was held in March 2020 (early start to Covid)
- DISCUSS: Explore how the villagers’ relationship with their cell phone network reflects broader societal attitudes toward technology. How do cultural, social, and emotional dimensions shape the adoption and use of technology in marginalized settings?

Week 14: Technology Tools and the Mitigation of Disasters

- REFERENCE: Krichen et al (2024) from Week 3
 - Krichen, M., Abdalzaher, M. S., Elwekeil, M., & Fouda, M. M. (2024). Managing natural disasters: An analysis of technological advancements, opportunities, and challenges. *Internet of Things and Cyber-Physical Systems*, *4*, 99-109. <https://www.sciencedirect.com/science/article/pii/S2667345223000500>
- READ: Meechang, K., Leelawat, N., Tang, J., Kodaka, A., & Chintanapakdee, C. (2020). The acceptance of using information technology for disaster risk management: A systematic review. *Engineering Journal*, *24*(4), 111-132 <https://engj.org/index.php/ej/article/view/3641>. (GO TO DOWNLOAD BUTTON)
- PLAY: A disaster resilience scenario game:
 - United Nations Office of Disaster Risk Reduction (UNDRR). “Play and learn to stop disasters.” Available at <https://www.stopdisastersgame.org/> (Hit: “Play the game”)
- DISCUSS: How technological tools are being used to mitigate and manage disasters.

Week 15: Technology, Ethics, and Disaster Response

- READ: Gonzalez, Chapter 4 “Networks”
- CONSIDER A QUESTION: What kind of disaster data do we get from Twitter (X)?
- READ: Hunt, M., Pringle, J., Christen, M., Eckenwiler, L., Schwartz, L., & Davé, A. (2016). Ethics of emergent information and communication technology applications in humanitarian medical assistance. *International Health*, *8*(4), 239-245. <https://academic.oup.com/inthealth/article/8/4/239/2198309>
- DISCUSS: Focus on how global networks of technology are deployed in international disaster response efforts.
- DISCUSS: Explore ethical dilemmas in disaster technology deployment, from data privacy concerns in crisis situations to the implications of unequal access to life-saving technologies.

Week 16: Final Research Paper Discussion (Open Discussions)

- Review of Topics covered
- Research Methods Review
- Final Paper Topic Development

Additional Course Info and SJSU Policies

MAKEUP POLICY

In this course, no sort of make-up or missed work is accommodated. Please know that in order to be excused from an exam or from any assignment you must have a doctor's excuse and permission from your dean, and/or have secured the instructor's permission well in advance.

Grading Policy Note that "All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades." See University Policy F13-1 at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details. The instructor will return materials submitted for grade within 10 days. I am happy to discuss student grades during office hours, but I will not do so by phone or email or in class. Bottom of Form

- A+ = 96 to 100%
- A = 93 to 95%
- A- = 90 to 92%
- B+ = 86 to 89 %
- B = 83 to 85%
- B- = 80 to 82%
- C+ = 76 to 79%
- C = 73 to 75%
- C- = 70 to 72%
- D = 60 to 69%

Classroom Protocol

1. Check Canvas and SJSU email regularly for updates or changes to schedule.
2. All correspondence will be conducted via Canvas and Canvas message. Include proper subject headings (course number and section, full name, topic) and standard business letter format.
3. Late assignments and exams will not be accepted unless accompanied by documented proof of personal or family medical emergency.
4. Grades will only be discussed via Canvas email or appointment and not during class times.
5. Classroom participation credit requires CAMERA BEING ON – no exceptions.

University Policies General Expectations, Rights and Responsibilities of the Student As members of the academic community, students accept both the rights and responsibilities in-cumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU's policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at <http://www.sjsu.edu/senate/docs/S90-5.pdf>. More detailed information on a variety of related topics is available in the SJSU cata-log, at <http://info.sjsu.edu/web-dbggen/narr/catalog/rec-12234.12506.html>. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor.

Due Dates and Late Submission: If you have extenuating circumstances, please speak with me as soon as possible, and always in advance of the deadline. There will be a 10% deduction each day the assignment is late, up to 7 days, then no grade - NO EXCEPTIONS WITHOUT ADVANCED PERMISSION.

Dropping and Adding Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester's Catalog Policies section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the current academic year calendars document on the Academic Calendars webpage at [http://www.sjsu.edu/provost/services/academic calendars/](http://www.sjsu.edu/provost/services/academic%20calendars/). The Late Drop Policy is available at <http://www.sjsu.edu/aars/policies/lat-edrops/policy/>. Students should be aware of the current deadlines and

penalties for dropping classes. Information about the latest changes and news is available at the Advising Hub at <http://www.sj-su.edu/advising/>.





Consent for Recording of Class and Public Sharing of Instructor Material University Policy S12-7, <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor's permission to record the course and the following items to be included in the syllabus:



















- "Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor's permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material."
 - It is suggested that the greensheet include the instructor's process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
 - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- "Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share, or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent."





Academic integrity Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The University Academic Integrity Policy S07-2 at <http://www.sjsu.edu/senate/docs/S07-2.pdf> requires you to be honest in all your academic course work. Faculty members are re-quired to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at <http://www.sjsu.edu/student-conduct/>.

Campus Policy in Compliance with the American Disabilities Act If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at <http://www.sjsu.edu/aec> to establish a record of their disability. GLST156

Course Summary:

Date	Details	Due
Mon Jan 20, 2025	 Overview (Week of January 20th)	to do: 11:59pm
Mon Jan 27, 2025	 Overview (Week of January 27th)	to do: 11:59pm
Mon Feb 3, 2025	 End of Week 2 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7184147	due by 11:59pm
	 Overview (Week of February 3rd)	to do: 11:59pm

Date	Details	Due
Mon Feb 10, 2025	 Overview (Week of February 10th)	to do: 11:59pm
Mon Feb 17, 2025	 End of Week 4 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7185272	due by 11:59pm
	 Overview (Week of February 17th)	to do: 11:59pm
Mon Feb 24, 2025	 Overview (Week of February 24th)	to do: 11:59pm
	 Overview (Week of March 3rd)	to do: 11:59pm
Mon Mar 3, 2025	 Mid-term Research Paper https://sjsu.instructure.com/courses/1598874/assignments/7185630	due by 11:59pm
Mon Mar 10, 2025	 End of Week 7 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7185814	due by 11:59pm
	 Overview (Week of March 10th)	to do: 11:59pm
Mon Mar 17, 2025	 Overview (Week of March 17th)	to do: 11:59pm
Mon Mar 24, 2025	 End of Week 9 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7186189	due by 11:59pm
	 Overview (Week of March 24th)	to do: 11:59pm
Mon Mar 31, 2025	 Reminder	to do: 11:59pm
Mon Apr 7, 2025	 Overview (Week of April 7th)	to do: 11:59pm
Mon Apr 14, 2025	 End of Week 12 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7186736	due by 11:59pm
	 Overview (Week of April 14th)	to do: 11:59pm
Mon Apr 21, 2025	 Overview (Week of April 21st)	to do: 11:59pm
Mon Apr 28, 2025	 Overview (Week of April 28th)	to do: 11:59pm
Mon May 5, 2025	 End of Week 15 Quiz - Knowledge Check https://sjsu.instructure.com/courses/1598874/assignments/7186838	due by 11:59pm

Date	Details	Due
	 Overview (Week of May 5th)	to do: 11:59pm
Tue May 13, 2025	 Overview (Week of May 12th)	to do: 10:30am
Wed May 21, 2025	 FINAL Research Paper https://sjsu.instructure.com/courses/1598874/assignments/7186175	due by 11:59pm
Thu May 22, 2025	 Semester Long Zoom Participation Grade https://sjsu.instructure.com/courses/1598874/assignments/7186104	due by 11:59pm