**PSC 3500: Emerging Technologies, AI, and International Politics**

Fall 2022 Syllabus

**Instructor:** Jeffrey Ding **Location:** PHIL 640

**Meeting Times:** T, Th 9:35-10:50AM **Office Hours:** Th 3:15-5:00pm (Monroe Hall 408)

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**Course Overview**

Rapid developments in new technologies have the potential to transform the international landscape. At the same time, the international environment also shapes the development of new technologies. This course examines the interactions between emerging technologies and global politics. It first introduces students to broad debates about the effects of technology on politics. Then it surveys the intersection between technological change and various outcomes in international politics, including economic statecraft, the rise and fall of great powers, social movements, and war. Throughout the course, we focus on the global implications of artificial intelligence.

**Learning Objectives**

By the end of the course, students will be equipped to:

* intervene in debates about the effects of emerging technologies on international politics;
* analyze how the technical dimensions of new technological domains interact with broader geopolitical trends;
* design and conduct their own research projects on topics related to science, technology, and international affairs.

**Anticipated Course Workload**

This 3-credit course includes 2.5 hours of weekly instruction (class meetings) and an average of 5 hours per week of outside work in preparing for class and completing assignments.

**Grading & Assignments**

Grades will be based on weekly attendance and participation (20%), discussion memos (20%), a critical analysis essay (25%), and a research paper (35%).

* **Classroom participation** (20%): Just like having water balloon fights, thinking through complex issues is most productive and fun when done in the company of others. Students are expected to demonstrate their engagement with the readings by actively listening and contributing to in-class discussions.
* **Discussion memos** (20%): For three of the class sessions, students will submit a memo (2-3 substantive paragraphs) to the course discussion board that substantively discusses the reading material. You could identify key points of contention among that day’s readings, connections between the material and previous course readings, or weaknesses of evidence or logic. Students will sign up for the days they plan to cover during the first class. *Please post your memo by 11:59PM Eastern Time the day before class.*
* **Critical analysis essay** (25%): Pick one of the readings covered in the class to-date. The objective of the critical analysis essay is to briefly summarize and evaluate the text. It should include the following components: 1) an argument that criticizes the author’s work in some way (e.g., weaknesses of evidence, neglect of a key factor, inconsistent reasoning); 2) evidential support for your argument; 3) discussion of connections between this reading and one other text covered in class. These essays should be roughly four single-spaced pages (2,000 words). *Due October 16 at 11:59PM Eastern Time.*
* **Research paper** (35%): In this course, we study macro-level perspectives for thinking about how technology affects politics (e.g., technonationalism vs. technoglobalism, technological determinism vs. social construction, technology-as-use vs. technology-as-invention). We also examine how particular technologies, such as AI, could shape specific political outcomes, such as the nature of warfare.

In this paper, you will apply one macro-level perspective to analyze how an emerging technology could impact international politics. You choose the macro-level perspective, the emerging technology, and the political outcome. It should include the following components:

1. Summary of what other scholarship says about the relationship between your emerging technology and political outcome
2. Argument for how the application of this macro-level perspective could improve discussions about this topic
3. Support for your argument with additional, original research

Additionally, the paper should engage with key concepts and points of contention in the course readings. Your papers should be roughly six single-spaced pages (3,000 words). \**Final paper due by December 18, at 11:59PM Eastern Time.*

*Grading scale:* All assignments are graded on a 100-point scale. I then calculate your final grade based on the weighting scheme. After rounding final grades up to the nearest whole numbers, I use the conventional grading scale:

A+ = 97-100; A = 94-96; A- = 90-93; B+ = 87-89; B = 84-86; B- = 80-83, and so on.

**Course Schedule (abbreviated)**

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| **Week** | **Class Date** | **Weekly Topics** |
| 1 | 8/30, 9/1 | Introduction and course overview |
| 2 | 9/6, 9/8 | Approaches to studying technology and politics |
| 3 | 9/13, 9/15 | Additional macro-level perspectives |
| 4 | 9/20, 9/22 | Technology and the changing character of war |
| 5 | 9/27, 9/29 | Strategic technologies and economic statecraft |
| 6 | 10/4, 10/6 | Political economy of innovation |
| 7 | 10/11, 10/13 | Communication technologies and social movements  **Critical essay due October 16** |
| 8 | 10/18, 10/20 | New technologies and global governance |
| 9 | 10/27 | New technologies and global governance (continued) |
| 10 | 11/1, 11/3 | Cybersecurity and global politics |
| 11 | 11/8, 11/10 | Artificial intelligence and global politics |
| 12 | 11/15, 11/17 | Artificial intelligence and global politics (continued) |
| 13 | 11/22 | Mid-point workshop |
| 14 | 11/29, 12/1 | Topic of class choice |
| 15 | 12/6, 12/8 | Topic of class choice and course reflections |
| Finals | 12/14-12/22 | **Research paper due December 18** |

**Full Course Schedule & Readings**

The course subject demands a diversity of types of knowledge (academic articles, books, technical manuals, blogs, etc.) and diversity of knowledge producers (demographics, background, technical expertise, geographic location). The readings reflect this demand. *\*Nearly all assigned readings should be accessible via GWU Libraries. For those that are not, I will post the relevant sections as pdf files on Blackboard.*

**Week 1. Introduction and course overview**

**August 30: Course overview and expectations**

**September 1: Contemporary issues**

* “The all-conquering quaver: TikTok’s rivals are nervous. Governments are suspicious. A billion users are glued to their screens.” *The Economist*. July 9, 2022. <https://www.economist.com/interactive/briefing/2022/07/09/the-all-conquering-quaver>
* Nick Merrill and Steve Weber, “Web site blocking as a proxy of policy alignment.” *First Monday* (2020). <https://firstmonday.org/ojs/index.php/fm/article/view/11415/10035>
* Lizzie O’Leary, “How Facial Recognition Tech Made its Way to the Battlefield in Ukraine,” Slate, April 26, 2022. <https://slate.com/technology/2022/04/facial-recognition-ukraine-clearview-ai.html>

**Week 2. Approaches to studying technology and politics**

**September 6: Which technologies matter**

* David Edgerton, *Shock of the Old*, Profile, (2008), \***Chapter 1: Significance,** 1-27.
* Ruth Oldenziel, *Making Technology Masculine*, Amsterdam University Press (1999), \***Introduction chapter,**9-18.

**September 8: Competing views of how technology shapes politics**

* Allan Dafoe, “On Technological Determinism: A Typology, Scope Conditions, and a Mechanism,” *Science, Technology, & Human Values* (2015), **Prioritize pages 1047-1058**.
* Daniele Archibugi and Jonathan Michie, “Technological Globalisation or National Systems of Innovation,” *Futures* (1997), 121-137.

**Week 3. Additional macro-level perspectives on technology and politics**

**September 13: Narratives about technology**

* The Maintainers. (2019, July 30). Why Do People Neglect Maintenance?. The Maintainers. <https://themaintainers.org/why-do-people-neglect-maintenance/>
* Genevieve Liveley and Sam Thomas, “Homer’s Intelligent Machines: AI in Antiquity (Chapter 1)” in *AI Narratives: A History of Imaginative Thinking about Intelligent Machines*. University of Oxford Press.

**September 15: Science, technology, and the processes of the international system**

* Weiss, Charles. 2005. “Science, technology and international relations.” *Technology in Society*. 27 (3): 295-313.
* McNeill, William. 1982. *The Pursuit of Power: Technology, Armed Force, and Society since A.D. 1000*. University of Chicago Press, \***Chapter 8: Intensified Military-Industrial Interaction, 1884-1914**.

**Week 4. Technology and War**

**September 20: The changing character of war**

* Onorato, Massimiliano et al. 2014. “Technology and the Era of the Mass Army.” *The Journal of Economic History*. 74 (2): 449-481.
* Jacquelyn Schneider and Julia Macdonald, “Looking Back to Look Forward: Autonomy, Military Revolutions, and The Importance of Cost,” *Social Science Research Network working paper* (2022). <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4001007>.

**September 22: Military innovation**

* Gilli, Andrea and Mauro Gilli. 2019. “Why China Has Not Caught Up Yet: Military-Technological Superiority and the Limits of Imitation, Reverse Engineering, and Cyber Espionage.” *International Security* 43 (3): 141-89.
* Michael C. Horowitz. 2010. *The Diffusion of Military Power*. Princeton University Press. \***Introduction chapter**.

**Week 5. Strategic technologies and economic statecraft**

**September 27: Technology control policies**

* Ding, Jeffrey and Allan Dafoe. 2021 “The Logic of Strategic Assets.” *Security Studies*. 30 (2): 182-212.
* Tim Hwang and Emily S. Weinstein, "Decoupling in Strategic Technologies: From Satellites to Artificial Intelligence" (Center for Security and Emerging Technology, July 2022). <https://doi.org/10.51593/20200085>.

**September 29: Weaponized Interdependence**

* Henry Farrell and Abraham Newman. “Weaponized Interdependence.” *International Security* (2019), 42-79.
* Dieter Ernst. “Indigenous Innovation and Globalization: The Challenge for China’s Standardization Strategy.” *East-West Center* (2011). <https://www.eastwestcenter.org/sites/default/files/private/ernstindigenousinnovation.pdf>

**Week 6. Political economy of innovation**

**October 4: Why some countries are better at technology**

* Joel W. Simmons. *The Politics of Technological Progress: Parties, Time Horizons and Long-term Economic Development.* Cambridge University Press, 2016. **\*Introduction chapter (pdf on course website)**
* Mark Zachary Taylor. *The Politics of Innovation: Why Some Countries Are Better Than Others at Science and Technology*. Oxford University Press, 2016
  + **\*Read book review summary**: <https://networks.h-net.org/node/9782/reviews/2011037/giordano-taylor-politics-innovation-why-some-countries-are-better>
  + **\*Browse PPT slide deck:** <https://munkschool.utoronto.ca/wp-content/uploads/2017/03/Mark-Zachary-Taylor-presentation.pdf>

**October 6: Technology and economic power transitions**

* Andrew B. Kennedy and Darren J. Lim, “The Innovation Imperative: Technology and U.S.-China Rivalry in the Twenty-first Century.” *International Affairs* (2018).
* Jeffrey Ding. “The Rise and Fall of Great Technologies and Powers.” Working Paper. <https://jeffreyjding.github.io/documents/The%20Rise%20and%20Fall%20of%20Great%20Technologies%20Paper%20Version%20January%202022.pdf>

**Week 7. Communication technologies and social movements**

**October 11: Twitter**

* Hounshell, Blake. 2011. “The Revolution will be Tweeted.” *Foreign Policy*.
* Tufekci, Zeynep. 2017. *Twitter and Tear Gas*. Yale University Press. **\*A Networked Public Chapter and Epilogue (pdf on Blackboard)**

**October 13: Tech and repression**

* Gohdes, Anita R. 2020. “Repression Technology: Internet Accessibility and State Violence.” *American Journal of Political Science* 64 (2): 488-503.
* Roberts, Margaret E. 2018. *Censored: Distraction and diversion inside China’s Great Firewall*. Princeton University Press. \***Chapter 1, p. 1-20.**

**Week 8. New technologies and global governance**

**October 18: Big tech**

* Swati Srivastava. “Algorithmic Governance and the International Politics of Big Tech.” *Perspectives on Politics* (2021).
* Kristen E. Eichensehr. “Digital Switzerlands” in Cyberspectives podcast (Hoover Institution). <https://www.hoover.org/research/cyberspectives-kristen-eichensehr-extraterritorial-issues-domestic-and-international-law>.

**October 20: Discuss diagnostic case studies in small groups**

**Week 9. New technologies and global governance (continued)**

*\*No Class October 25 (Fall Break)*

**October 27: Internet governance**

* Mueller, Milton. 2010. *Networks and States: The Global Politics of Internet Governance*. MIT Press. **\*Chapter 4: World Summit on the Information Society**
* DeNardis, Laura. 2014. *The Global War for Internet Governance*. Yale University Press. **\*Chapter 1.**

**Week 10. Cybersecurity and global politics**

**November 1: Cybersecurity dilemma**

* Buchanan, Ben. *The Cybersecurity Dilemma: Hacking, Trust, and Fear between Nations*. Oxford University Press, 2016. **\*Chapter 3: The Defender’s View.**
* Read exchange between Lyu Jinghua and Ben Buchanan/Robert Williams in *Lawfare*: a) <https://www.lawfareblog.com/chinese-perspective-pentagons-cyber-strategy-active-cyber-defense-defending-forward>; b) <https://www.lawfareblog.com/deepening-us-china-cybersecurity-dilemma>.

**November 3: Cyber and the future of warfare**

* Slayton, Rebecca. 2017. “What is the Cyber Offense-Defense Balance? Conceptions, causes, and assessment.” *International Security* 41 (3): 72-109.
* Schneier, Bruce and Tarah Wheeler. 2021. “Hacked Drones and Busted Logistics Are the Cyber Future of Warfare.” *Brookings Tech Stream.* <https://www.brookings.edu/techstream/hacked-drones-and-busted-logistics-are-the-cyber-future-of-warfare/>.

**Week 11. Artificial intelligence and global politics**

**November 8: AI and Decision-making**

* Avi Goldfarb and Jon R. Lindsay, “Prediction and Judgment: Why Artificial Intelligence Increases the Importance of Humans in War,” *International Security*, Vol. 46, No. 3 (Winter 2021/22), pp. 7–50, <https://doi.org/10.1162/isec_a_00425>.
* Horowitz, Michael C., Sarah E. Kreps, and Matthew Fuhrmann. 2016. “Drone Proliferation Matters, but not for the Reasons You Think.” *War on the Rocks*. <https://warontherocks.com/2016/12/drone-proliferation-matters-but-not-for-the-reasons-you-think/>.

**November 10: AI and Racing**

* Imbrie, Andrew and Elsa Kania. 2019. “AI Safety, Security, and Stability Among Great Powers: Options, Challenges, and Lessons Learned for Pragmatic Engagement.” *Center for Security and Emerging Technology.*
* Cave, Stephen and Sean Oh’Eigeartaigh. “An AI Race for Strategic Advantage: Rhetoric and Risks.” *AIES Conference* (2018). <https://www.aies-conference.com/2018/contents/papers/main/AIES_2018_paper_163.pdf>

**Week 12. Artificial intelligence and global politics (continued)**

**November 15: AI and arms control**

* Paul Scharre (2018), *Army of None: Autonomous Weapons and the Future of War*, W.W. Norton & Company. \***Chapter 20** (“The Pope and the Crossbow”). \***On Course Blackboard**
* Rebecca Crootof. (2015), “The Killer Robots Are Here: Legal and Policy Implications,” Cardozo Law Review 36, **\*Focus on Parts III and IV**

**November 17:** We’ll hold an in-class peer review session where students can get feedback from the peers and the instructor on their research papers. **\*Please bring a draft outline of your research paper to class.**

**Week 13. Workshop on research paper**

**November 22: The long-term impacts of AI**

* Sam Clarke and Jess Whittlestone. “A Survey of the Potential Long-term Impacts of AI.” *AIES Conference* (2022). <https://dl.acm.org/doi/pdf/10.1145/3514094.3534131>.
* Raffi Katchadourian. “The Doomsday Invention: Will Artificial Intelligence Bring Us Utopia or Destruction.” *The New Yorker*. <https://www.newyorker.com/magazine/2015/11/23/doomsday-invention-artificial-intelligence-nick-bostrom>.

*\*No class November 24 (Thanksgiving Break)*

**Week 14. Flex week**

**November 29: Governance of Biotechnology**

* Françoise Baylis, Marcy Darnovsky, Katie Hasson, and Timothy M. Krahn. “Human Germline and Heritable Genome Editing: The Global Policy Landscape.” *The CRISPR Journal.* (2020).<https://www.liebertpub.com/doi/10.1089/crispr.2020.0082>
* Margaret E. Kosal. “CRISPR and new genetic-engineering techniques: emerging challenges to strategic stability and nonproliferation.” *The Nonproliferation Review*. (2020). <https://www.tandfonline.com/doi/full/10.1080/10736700.2020.1879464>.

**December 1: Questioning Technological Hype**

* Andrew Maynard. “Why I’m Suffering from Nanotechnology Fatigue.” *Slate*. 2016. <https://slate.com/technology/2016/09/why-im-suffering-from-nanotechnology-fatigue.html>.
* Gavin Mueller. “Decelerate Now.” *Logic Magazine*. 2020. <https://logicmag.io/commons/decelerate-now/>.

**Week 15. Flex week**

**December 6: Smart Grids and Infrastructure Development**

* Sung-Young Kim. “Hybridized industrial ecosystems and the makings of a new developmental infrastructure in East Asia’s green energy sector.” *Review of International Political Economy*. 2019. <https://www.tandfonline.com/doi/pdf/10.1080/09692290.2018.1554540>.
* Meghan O’Sullivan, Indra Overland, and David Sandalow. “The Geopolitics of Renewable Energy.” *Center on Global Energy Policy Working Paper*. 2017. <https://energypolicy.columbia.edu/sites/default/files/CGEPTheGeopoliticsOfRenewables.pdf>. \***Read Introduction and section II.D. “Electric Grids” (p. 19-23)**

**December 8:** We’ll reflect on the class together, review key concepts, and think about future applications of lessons learned.

**Reminder: Research papers due December 18, at 11:59 Eastern Time.**

**Additional Course Policies**

**Attendance and Late Submissions:** Being 15 minutes or more late to a class or section counts as an absence. You get one free absence – no questions asked. After that, if an absence is excused, students must make up any work from that class. Students who anticipate persistent challenges to participating in class or submitting work on time should share this with the course instructor as soon as possible. Late submissions are docked 5% for each day late.

**Plagiarism is a serious offense.** Students who plagiarize will receive an F on the assignment and be referred to the Academic Integrity Council. We will discuss the problem of plagiarism in class, and there is more information about plagiarism on Blackboard under the Writing Resources tab.

**ACADEMIC INTEGRITY CODE**

Violations of academic integrity occur when students fail to cite research sources properly, engage in unauthorized collaboration, falsify data, and otherwise violate the [Code of Academic Integrity](https://studentconduct.gwu.edu/code-academic-integrity). If you have any questions about whether or not particular academic practices or resources are permitted, you should ask me for clarification. If you are reported for an academic integrity violation, you should contact the Office of Student Rights and Responsibilities (SRR) to learn more about your rights and options in the process. Consequences can range from failure of assignment to expulsion from the university and may include a transcript notation. For more information, please refer to the SRR website (<https://studentconduct.gwu.edu/academic-integrity>).

**WRITING SUPPORT**

GW’s Writing Center cultivates confident writers in the University community by facilitating collaborative, critical, and inclusive conversations at all stages of the writing process. Working alongside peer mentors, writers develop strategies to write independently in academic and public settings. Appointments can be booked online at [gwu.mywconline](https://gwu.mywconline.com/).

**SUPPORT FOR STUDENTS WITH DISABILITIES**

GW’s Disability Support Services (DSS) provides and coordinates accommodations and other services for students with a wide variety of disabilities, as well as those temporarily disabled by injury or illness. Accommodations are available through DSS to facilitate academic access for students with disabilities. Additional information is available at https://disabilitysupport.gwu.edu.

**MENTAL HEALTH SERVICES 202-994-5300**

The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. For additional information see: counselingcenter.gwu.edu/

**UNIVERSITY POLICY ON RELIGIOUS HOLIDAYS**

In accordance with University policy, students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance. For details and policy, see: [provost.gwu.edu/policies-procedures-and-guidelines](http://provost.gwu.edu/policies-procedures-and-guidelines).

**CLASSROOM RECORDING**

This class will not be recorded. For students who have a legitimate reason for missing class, I will provide a way to make-up the coursework for the participation grade (usually by having you write up short responses to the small group questions) and provide my course prep slides.