**PSC 3192W: Politics of China’s Innovation System**

Fall 2022 Syllabus

**Instructor:** Jeffrey Ding **Location:** LISH 335

**Meeting Times:** Th 12:45-3:15PM **Office Hours:** Th 3:15-5:00pm (Monroe Hall 408)

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**Course Overview**

China has ambitions to become a “science and technology superpower.” Yet, China will face difficult decisions as it enhances its scientific and technological capabilities. For instance, reducing dependency on foreign suppliers of key technologies could hamper China’s technological rise, which has benefited from international linkages. This course will unpack the politics behind some of these trade-offs. We will examine how China’s scientific and technological capabilities are shaped by: geopolitical position, regime type, institutions for skill formation, and misperceptions in power assessments.

**Learning Objectives**

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

* intervene in debates about the politics of China’s science and technology landscape;
* analyze how emerging technologies interact with China’s broader political system;
* design and conduct their own research projects in the discipline of political science.

**Anticipated Course Workload**

This 3-credit course includes 2.5 hours of weekly instruction (class meetings) and an average of 6 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%), analytic essays (25%), and a research paper (55%).

* **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.
* **Analytical essays** (25%): For three of the class sessions, students will submit a short essay (~750 words) to the course discussion board that provides a critical analysis of all the week’s readings. 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 10:00AM Eastern Time on Thursday (the day of class).*
* **Research paper** (55%): In this assignment, you will write a research paper on the politics of China’s innovation system. You can choose which political factors you will research, and you can research a technological domain of your choosing or study the broader technological landscape. The paper should try to develop an explanation for your topic of interest (“why” or “how” questions). These papers should be roughly 20 pages single-spaced (~8,000-10,000 words, excluding bibliography).

*\*Outline and annotated bibliography due by November 16, at 11:59PM Eastern Time.* The outline will be graded (15% of final grade; final research paper is remaining 40% of final grade)

*\*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 | 9/1 | Introduction and course overview |
| 2 | 9/8 | What is China’s innovation system? |
| 3 | 9/15 | Stakes of China’s innovation system |
| 4 | 9/22 | State-led innovation? |
| 5 | 9/29 | Key players |
| 6 | 10/6 | Beyond innovation? |
| 7 | 10/13 | Globalization and China’s innovation system |
| 8 | 10/20 | Science and technology in Greater China |
| 9 | 10/27 | History of innovation in China |
| 10 | 11/3 | Chinese defense innovation |
| 11 | 11/10 | China’s authoritarianism and digital technologies |
| 12 | 11/17 | Peer review paper workshop |
| 13 | 12/1 | China and emerging technologies |
| 14 | 12/8 | Course reflections and writing time |
| 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. September 1: Introduction and course overview**

**Week 2. September 8: What is China’s Innovation System?**

* Richard R. Nelson and Nathan Rosenberg, “Technical Innovation and National Systems,” in *National Innovation Systems: A Comparative Analysis* (1993), Oxford University Press, **p. 1-20 (chapter 1)**
* Yifei Sun, “China’s National Innovation System in Transition,” *Eurasian Geography and Economics* (2002).
* Xue Lan and Nancy Forbes, “Will China Become a Science and Technology Superpower by 2020? An Assessment based on a National Innovation System Framework,” *innovations* (2006).
* Aaron Melaas and Fang Zhang, “National Innovation Systems in the United States and China,” *Tufts Center for International Environment & Resource Policy*. <https://sites.tufts.edu/cierp/files/2017/11/ECI_Innovation-Systems_WEB.pdf>

**Week 3. September 15: Stakes of China’s Innovation System**

* Lorand Laskai. “Why Does Everyone Hate Made in China 2025?” *Council on Foreign Relations*. <https://www.cfr.org/blog/why-does-everyone-hate-made-china-2025>
* Kai-fu Lee, *AI Superpowers: China, Silicon Valley, and the New World Order*, Houghton Mifflin Harcourt, 2018. \***Chapter 1.**
* Elsa Kania, “Seeking a Panacea: The Party-State’s Plans for Artificial Intelligence (Part 1), *Center for Advanced China Research*. <https://www.ccpwatch.org/single-post/2017/10/31/seeking-a-panacea-the-party-states-plans-for-artificial-intelligence-part-1>.
* Murphy et al. “Translation of Xi Jinping speech at a joint meeting of the Chinese Academy of Sciences and the Chinese Academy of Engineering,” *DigiChina*. <https://digichina.stanford.edu/work/xi-jinping-strive-to-become-the-worlds-primary-center-for-science-and-high-ground-for-innovation/>

**Week 4. September 22: State-led Innovation?**

* Mark Wu. “The ‘China, Inc.’ Challenge to Global Trade Governance.” *Harvard International Law Journal* (2016). **\*Focus on pages 269-284.** <https://harvardilj.org/wp-content/uploads/sites/15/HLI210_crop.pdf>
* Ling Chen and Barry Naughton, “An institutionalized policy-making mechanism: China’s return to techno-industrial policy.” *Research Policy* (2016). <https://www.sciencedirect.com/science/article/pii/S0048733316301482>
* Regina M. Abrami, William C. Kirby, and F. Warren McFarlan. “Why China Can’t Innovate.” *Harvard Business Review*. March 2014. <https://hbr.org/2014/03/why-china-cant-innovate>

**Week 5. September 29: Key players**

* Cong Cao and Richard P. Suttmeier, “Challenges of S&T System Reform in China,” *Science* (2017), <https://www.science.org/doi/full/10.1126/science.aal2515>
* Adam Segal, *Digital Dragon: High-Technology Enterprises in China*, Cornell University Press (2003). \***Chapter 1: High-Technology Enterprises in China**
* Yi-chong, Xu. “China’s giant state-owned enterprises as policy advocates: the case of the state grid corporation of China.” *The China Journal* 79, no. 1 (2018): 21-39. <https://www.journals.uchicago.edu/doi/full/10.1086/693049>

**Week 6. October 6: Beyond Innovation?**

* Dan Breznitz and Michael Murphree, *The Run of the Red Queen: Government, Innovation, Globalization, and Economic Growth in China*, Yale University Press (2011). **\*Introduction AND Chapter 1**
* La Bruyère, Emily de, and Nathan Picarsic. “Beijing’s Innovation Strategy: Threat-Informed Acquisition for an Era of Great Power Competition.” Proceedings of the Seventeenth Annual Acquisition Research Symposium, April 28, 2020. <https://calhoun.nps.edu/bitstream/handle/10945/66005/Beijings_Innovation_Strategy_SYM-AM-20-091_Panel.pdf?sequence=1&isAllowed=y>
* Jeffrey Ding. “The Diffusion Deficit in Scientific and Technological Power: Re-assessing China’s Rise,” Working paper (\***Focus on Part I, II, and IV).** <https://jeffreyjding.github.io/documents/Diffusion%20Deficit%20working%20paper%20August%202022.pdf>

**Week 7. October 13: Globalization and China’s innovation system**

* Douglas B. Fuller. *Paper Tigers, Hidden Dragons: Firms and the Political Economy of China's Technological Development.* Oxford University Press (2016). **\*Introduction AND Chapter 1.**
* Richard P. Suttmeier. “State, Self-Organization, and Identity in the Building of Sino-U.S. Cooperation in Science and Technology,” *Asian Perspective* (2008). <https://www.jstor.org/stable/42704618>
* Jonas Nahm and Edward S. Steinfeld, “Scale-up Nation: China’s Specialization in Innovative Manufacturing,” *World Development* (2014). <https://www.sciencedirect.com/science/article/pii/S0305750X13002040>

**Week 8. October 20: Science and technology in Greater China**

* Saxenian, AnnaLee, and Jinn‐Yuh Hsu. “The Silicon Valley–Hsinchu connection: technical communities and industrial upgrading.” *Industrial and corporate change* (2001). <https://academic.oup.com/icc/article/10/4/893/706920>
* Greater China's Quest for Innovation Books Author(s) Henry S. Rowen,Marguerite Gong Hancock,William F. Miller Published By Shorenstein APARC, distributed by Brookings Institution Press, page(s): 414 November 2008  \***Read introduction:** <https://fsi-live.s3.us-west-1.amazonaws.com/s3fs-public/0_Intro_Rowen_FINAL_Quest2008.pdf>
* Mark Z. Taylor, “Critical Cases of Creative Insecurity,” in *The Politics of Innovation: Why Some Countries are Better than Others at Science and Technology*. Oxford University Press (2016). \***Only read the Taiwan section of this chapter.**

**Week 9. October 27: History of innovation in China**

* Augier, Mie, Jerry Guo, and Harry Rowen. “The Needham puzzle reconsidered: Organizations, organizing, and innovation in China.” *Management and Organization Review* (2016).
* Evan A. Feigenbaum. “The Deep Roots and Long Branches of Chinese Technonationalism.” *Macro Polo*. 2017. <https://macropolo.org/analysis/the-deep-roots-and-long-branches-of-chinese-technonationalism/>.
* Pete Millwood. “An ‘Exceedingly Delicate Undertaking’: Sino-American Science Diplomacy, 1966–78.” *Journal of Contemporary History* (2020). <https://journals.sagepub.com/doi/10.1177/0022009419888273>

**Week 10. November 3: Chinese defense innovation**

* Linda Weiss, *America Inc.? Innovation and Enterprise in the National Security State*. Cornell University Press. **\*Chapter 1** (online e-book available through GWU libraries)
* Meia Nouwens and Helena Legarda, “Emerging technology dominance: what China’s pursuit of advanced dual-use technologies means for the future of Europe’s economy and defence innovation,” *MERICS and IISS*.<https://merics.org/sites/default/files/2020-05/181218_Emerging_technology_dominance_MERICS_IISS.pdf>
* Tai Ming Cheung.“The Current State of Defense Innovation in China and Future Prospects,” *IGCC Defense Innovation Briefs* (January 2014). <https://escholarship.org/uc/item/67f7m49c>.
* Elsa B. Kania and Lorand Laskai, “Myths and Realities of China’s Military-Civil Fusion Strategy.” *Center for a New American Society*. <https://www.cnas.org/publications/reports/myths-and-realities-of-chinas-military-civil-fusion-strategy>.

**Week 11. November 10: China’s authoritarianism and digital technologies**

* Simon Denyer. “The Internet was supposed to foster democracy. China has different ideas.” *The Washington Post*. July 10, 2016. <https://www.washingtonpost.com/world/asia_pacific/the-internet-was-supposed-to-foster-democracy-china-has-different-ideas/2016/07/10/42954bbc-1dd9-11e6-b6e0-c53b7ef63b45_story.html>
* Mara Hvistendahl. “Study exposes Chinese censors’ deepest fears.” *Science* (2014). <https://www.science.org/doi/10.1126/science.345.6199.859>
* Shazeda Ahmed. “The Messy Truth about Social Credit.” *Logic* (2019). <https://logicmag.io/china/the-messy-truth-about-social-credit/>
* Paul Mozur. “One Month, 500,000 Face Scans: How China Is Using A.I. to Profile a Minority.” *New York Times* (2019). <https://www.nytimes.com/2019/04/14/technology/china-surveillance-artificial-intelligence-racial-profiling.html>

*\*Reminder: Outline and Annotated Bibliography due November 16 at 11:59PM Eastern.*

**Week 12. November 17: Peer Review Paper Workshop**

Bring a copy of your outline and annotated bibliography. We’ll hold an in-class peer review session where students can get feedback from the peers and the instructor on their research papers.

**Week 13.** *\*No class November 24 (Thanksgiving Break)*

**Week 14. December 1: China and Emerging Technologies**

* Yu Zhou and Abigail E. Coplin, “Innovation in a Science-Based Sector,” *China Review* (2022). <https://www.jstor.org/stable/48653979>
* Jonas Nahm, “Testimony before the U.S.-China Economic and Security Review Commission.” Hearing on China’s Energy Plans and Practices (2021). <https://www.uscc.gov/sites/default/files/2022-03/Jonas_Nahm_Testimony.pdf>
* Jeffrey Ding. “Deciphering China’s AI Dream.” *Future of Humanity Institute Technical Report* (2018). <https://www.fhi.ox.ac.uk/wp-content/uploads/Deciphering_Chinas_AI-Dream.pdf>. **\*Focus on Section 2.**
* Kathryn Walsh, Ian Christensen, and Rob Ronci. “Lost Without Translation: Identifying Gaps in U.S. Perceptions of the Chinese Commercial Space Sector.” *Secure World Foundation and Caelus Foundation Report*. February 2021. <https://swfound.org/media/207116/swf_caelus_lost_without_translation_identifying_gaps_in_us_perceptions_of_the_chinese_commercial_space_sector_2021.pdf>

**Week 15. December 8: Course Reflections and Writing Time**

We will reflect on some of the core concepts in the course, lingering questions, and still-evolving issues. Then, we’ll have time for working on the paper and one-on-one meetings with the instructor about your paper.

*\*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 1/2 letter grade 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.