**Course Syllabus**

**Area 7410: China’s Space and Counterspace Programs**

**Instructor/Presenter:** Oriana Skylar Mastro

**Course Dates/Duration:** October 2021

**COURSE INFORMATION**

**Course Description/Overview**

This course presents a cursory overview of China’s military and civil space and counter-space programs, which includes the role of China’s military-civil fusion (MCF) and China’s space law, policy, and plans. It also addresses China’s space operations system, including launch bases, satellites types, space capabilities & activities, international cooperation, as well as China’s development and fielding of anti-satellite and counterspace capabilities. It will delve into Chinese thinking on the role of space in warfare and great power competition, and some of the challenges Chinese thinking creates for deterrence and escalation dynamics.

**Course Schedule**

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| Time | Topics |
| **October** |  |
| 8:00-8:50 | Session 1: Part 1 – Course Overview  Session 1: Part 2 – An Introduction to the Space Domain |
| 8:50-9:00 | Break |
| 9:00-9:50 | Session 2: International Law and Treaties on Space |
| 9:50-10:00 | Break |
| 10:00-10:50 | Session 3: China’s Space Plans |
| 11:50-11:00 | Break |
| 11:00-11:50 | Session 4: Part 1 – Chinese Space Doctrine |
| 11:50-13:00 | Lunch |
| 13:00-13:50 | Session 5: Part 2 – Chinese Space Doctrine |
| 13:50-14:00 | Break |
| 14:00-14:50 | Session 6: China’s Defense Industry |
| 14:50-15:00 | Break |
| 15:00-15:50 | Session 7: Space Organizations and Military-Civil Fusion |

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| Time | Topics |
| **October** |  |
| 8:00-8:50 | Session 8: China Space Capabilities |
| 8:50-9:00 | Break |
| 9:00-9:50 | Session 9: China Space Capabilities |
| 9:50-10:00 | Break |
| 10:00-10:50 | Session 10: Counterspace |
| 11:50-11:00 | Break |
| 11:00-11:50 | Session 11: Counterspace |
| 11:50-13:00 | Lunch |
| 13:00-13:50 | Session 12: China’s ‘Civilian’ Space Program |
| 13:50-14:00 | Break |
| 14:00-14:50 | Session 13: Deterrence, Defense and Escalation in Space |
| 14:50-15:00 | Break |
| 15:00-15:50 | Session 14: Implications for US |

The course will be conducted in open lecture format, with some small group activities and discussion sections.

**Prerequisites**

NONE. However core courses are highly recommended.

**Assessment**

Pass/Fail. There is no formal assessment. However, instructors may wish to gauge student understanding of the issues covered in class by asking questions and/or setting up exercises and activities in which all students will be expected to actively participate.

**COURSE MATERIALS**

**Recommended Readings**

The following reading assignments are essential to the course. While it is recognized that you may not be able to complete all of the readings, you are encouraged to read as much as you can. These readings will enable you to learn more in the classroom because they will provide more background on the topics covered in the course so that you can more accurately view, analyze, and participate more fully in the issues being discussed.

* Eric Heginbotham et al., “Scorecard 8: Chinese Counterspace Capabilities versus US Space Systems,” in [*The U.S.-China Military Scorecard: Forces, Geography, and the Evolving Balance of Power, 1996–2017,*](https://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR392/RAND_RR392.pdf) (Santa Monica: RAND Corporation, 2015), 245–258.
* Marc Julienne, “[Space Governance: China As An Aspiring Rulemaker](https://www.ifri.org/sites/default/files/atoms/files/julienne_china_ambitions_space_2021.pdf)” In China’s Ambitions in Space: the Sky’s the Limit, (*Center for a New American Security*, January 2021), 35-39.
* Michael S. Chase, “Defense and Deterrence in China’s Military Space Strategy,” *China Brief* 11:5 (March 25, 2011).
* Kevin Pollpeter et al, *The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations,* (Santa Monica: RAND Corporation), 1-36.
* Peng Guangqian and Yao Youzhi, ed., “Strategic Information Operations,” *The Science of Military Strategy*, (Beijing: Military Science Publishing House, 2005), 336-346.
* “Challenges to Security in Space,” *Defense Intelligence Agency*, Feb 11, 2019, 13-20.
* Kevin Pollpeter et al, “China Dream, Space Dreams: China’s Progress in Space Technologies and Implications for the United States,” *A Report Prepared for the U.S.-China Economic and Security Review*, 7-23, 41-105.
* The State Council Information Office of the People’s Republic of China. “[White Paper on China’s Space Activities in 2016](http://www.spaceref.com/news/viewsr.html?pid=49722),” *China National Space Administration*, December 27, 2016*.*
* “[China’s Ambitions in Space: Contesting the Final Frontier](https://www.uscc.gov/sites/default/files/2019-11/Chapter%204%20Section%203%20-%20China’s%20Ambitions%20in%20Space%20-%20Contesting%20the%20Final%20Frontier.pdf),” from the *2019 Report to Congress of the U.S.-China Economic and Security Review Commission*, *U.S.-China Economic and Security Review Commission*, November 2, 2019, 359-386.
* Stephen McCall, “Challenges to the United States in Space,” *Congressional Research Service*, 2020.
* Mark Stokes et al, “Section Four: Military-Civil Fusion (MCF) Policies and International Cooperation,” in “[China’s Space and Counterspace Capabilities and *Activities*](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf)*,* (*U.S.-China Economic and Security Review Commission*, March 30, 2020), 21-43.

**Suggested Readings**

The following recommendations are for students who would like to explore this subject further.

**Session 1: An Introduction to the Space Domain**

* [Air University Space Primer, Chapters 6-7, “](https://www.airuniversity.af.edu/Portals/10/AUPress/Books/AU-18.PDF)Orbital Mechanics” and “Space Environment,” September 2009, 89-135.
* Martin E.B. France and Jerry Jon Sellers, “Chapter 4: Real Contraints on Spacepower,” in [Toward a Theory of Spacepower: Selected](https://ndupress.ndu.edu/Portals/68/Documents/Books/spacepower.pdf), *Institute for National Strategic Studies National Defense University,* 2011, 57-97.
* David Wright et al, [The Physics of Space Security a Reference Manual Reconsidering the Rules of Space Project](https://aerospace.csis.org/wp-content/uploads/2019/06/physics-space-security.pdf)*,* (American Academy of Arts & Science, 2005) pp. 19-177.
* National Air and Space Intelligence Center, [Competing in Space](https://media.defense.gov/2019/Jan/16/2002080386/-1/-1/1/190115-F-NV711-0002.PDF), *NASIC Public Affairs Office*, December 2018, 1-3, 24-25.
* Cassandra Steer, “[Why Outer Space Matters for National and International Security](https://www.law.upenn.edu/live/files/10053-why-outer-space-matters-for-national-and),” *Center for Ethics and the Rule of Law*, Jan. 2020.
* John Amble, “[MWI Podcast: The Space Domain Is Getting Crowded](https://mwi.usma.edu/mwi-podcast-the-space-domain-is-getting-crowded/),” *Modern War Institute,* Podcast, October 1, 2020.

**Session 2: International Law and Treaties on Space**

* [Air University Space Primer, Chapters 3 “](https://www.airuniversity.af.edu/Portals/10/AUPress/Books/AU-18.PDF)Current Space Law and Policy, September 2009, 43-60.
* Alexander Bowe, “[China’s Position on a Code of Conduct in Space](https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Position%20on%20a%20Code%20of%20Conduct%20in%20Space.pdf),” *U.S.-China Economic and Security Review Commission*, September 11, 2017.
* National Air and Space Intelligence Center, [Competing in Space](https://media.defense.gov/2019/Jan/16/2002080386/-1/-1/1/190115-F-NV711-0002.PDF), *NASIC Public Affairs Office*, December 2018, 3.
* United Nations Office for Space Affairs. “2222 (XXI). Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies,” [*Https://Www.unoosa.org/Oosa/En/Ourwork/Spacelaw/Treaties/Outerspacetreaty.html*](https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html), 1966.
* Vasina, Anna, and Olga Yeshchuk, “[Chinese Space Law; Problem and Areas of Reforming,](https://www.researchgate.net/publication/335597379_Chinese_Space_Law_Problems_and_Areas_of_Reforming)” in Advanced Space Law*,* (International Society of Philosophy and Cosmology Research Institute of Public Law, 27 February 2019), 140-150.
* Sergio Marchiso, “[The Draft Code of Conduct for Outer Space Activities](https://www.unoosa.org/pdf/pres/2010/SLW2010/02-10b.pdf),” *United Nations/Thailand Workshop on Space Law*, November 2020.
* Marc Julienne, “[Space Governance: China As An Aspiring Rulemaker](https://www.ifri.org/sites/default/files/atoms/files/julienne_china_ambitions_space_2021.pdf)” In China’s Ambitions in Space: the Sky’s the Limit, (*Center for a New American Security*, January 2021), 35-39.
* Christopher D. Johnson, [Handbook for New Actors in Space](https://swfound.org/media/205710/handbook_for_new_actors_in_space_2017_web2.pdf), *Secure World Foundation*, September 26, 2020.
* Brian C. Weeden, “[The Evolution of U.S. National Policy for Addressing the Threat of Space Debris](https://swfound.org/media/205624/iac-16a683-weeden_evolution_us_space-debris_policy-paper.pdf),” *Secure World Foundation*, September 26, 2016.
* ‌Josh Wolny, “[The UN COPOUS Guidelines on the Long-Term Sustainability of Outer Space Activities](https://swfound.org/media/206227/swf_un_copuos_lts_guidelines_fact_sheet_august_2018.pdf),” *Secure World Foundation*, August 2018.

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**Session 3: China’s Space Plans**

* **https://www.amacad.org/publication/place-ones-mat-chinas-space-program-1956-2003**
* “PRC State Council, China’s Space Activities in 2011, December 2011,” *USC Annenberg*, December 1, 2011, <https://china.usc.edu/prc-state-council-china’s-space-activities-2011-december-2011>.
* Michael Chase, “[The Space and Cyberspace Components of the Belt and Road Initiative](https://www.nbr.org/wp-content/uploads/pdfs/publications/sr80_securing_the_belt_and_road_sep2019.pdf)” in Nadège Rolland (eds.) *Securing the Belt and Road Initiative: China's Evolving Military Engagement Along the Silk Roads*, (National Bureau of Asian Research*,* September 3, 2019), pp 19-32.
* The State Council Information Office of the People’s Republic of China. “[White Paper on China’s Space Activities in 2016](http://www.spaceref.com/news/viewsr.html?pid=49722),” *China National Space Administration*, December 27, 2016*.*
* PRC State Council, “国务院关于印发“十三五”国家信息化规划的通知 [Notice of the State Council on Issuing the ‘13th Five-Year’ National Informatization Plan],” *Central People's Government of the People's Republic of China,* December 15, 2016
* PRC State Council, “State Council Notice on the Publication of the National 13th Five-Year Plan for S&T Innovation,” *Central People's Government of the People's Republic of China,* July 28, 2016, translated by the Center for Security and Emerging Technology January 8, 2020 (ed. Ben Murphy).
* Alexander Bowe, “[China’s Pursuit of Space Power Status and Implications for the United States](https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Space%20Power%20Goals.pdf),” *U.S.-China Economic and Security Review Commission*, 11 April 2019, 2-4.
* Oriana Skylar Mastro and Peter Garretson, “Chinese Space Ambition by Space Strategy a Podcast by Space Pod.” *Anchor*, June 9, 2021, [anchor.fm/afpcspacepod/episodes/Chinese-Space-Ambition-e12fn6g/a-a5r37v2](https://anchor.fm/afpcspacepod/episodes/Chinese-Space-Ambition-e12fn6g/a-a5r37v2).
* Kevin Pollpeter, “[China’s Space Program: Making China Strong, Rich, and Respected](https://muse-jhu-edu.stanford.idm.oclc.org/article/754922/pdf),” *Project Muse,* April 2020.
* Kevin Pollpeter et al, “Introduction” in [China Dream, Space Dreams: China’s Progress in Space Technologies and Implications for the United States](https://www.uscc.gov/sites/default/files/Research/China%20Dream%20Space%20Dream_Report.pdf), (*U.S.-China Economic and Security Review Commission,* March 2, 2015), 1-7.
* James Cartwright et al, “[China’s Ambitions in Space: Contesting the Final Frontier](https://www.uscc.gov/sites/default/files/2019-11/Chapter%204%20Section%203%20-%20China’s%20Ambitions%20in%20Space%20-%20Contesting%20the%20Final%20Frontier.pdf)” in the *2019 Report to Congress of the U.S.-China Economic and Security Review Commission*, *U.S.-China Economic and Security Review Commission*, November 2019.
* Kevin L. Pollpeter et al, “Chapter 1: Introduction” in [The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operation*s*](https://www.rand.org/pubs/research_reports/RR2058.html), (Rand Corporation, November 10, 2017), 1-7, 31-37.
* Todd Harrison, “Statement of Todd Harrison in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf), Testimony before US China Economic and Security Review Commission, April 25, 2019, 42-50.
* Peter Wood et al. “[China’s Ground Segment: Building the Pillars of a Great Space Power](https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/Space/2021-03-01%20Chinas%20Ground%20Segment.pdf?ver=z4ogY_MrxaDurwVt-R9J6w%3d%3d),” *China Aerospace Studies Institute*, March 1, 2021.
* Brian Weeden, “Statement of Brian Weeden, Ph.D.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf), Testimony before US China Economic and Security Review Commission, April 25, 2019, 51-78.
* Namrata Goswami, “Statement of Namrata Goswami, Ph.D.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf), Testimony before US China Economic and Security Review Commission, April 25, 2019, 80-108.
* Li Wei et al, [“China’s Deep-Space Exploration to 2030](http://english.nssc.cas.cn/ns/NU/201410/W020141016603613379886.pdf),” *Chinese Academy of Sciences*, 2014.
* Marc Julienne, “[China’s Space Policy: The Path to Power](https://www.ifri.org/sites/default/files/atoms/files/julienne_china_ambitions_space_2021.pdf),” In China’s Ambitions in Space: the Sky’s the Limit, (*Center for a New American Security*, January 2021), 13-17.
* Morris Jones, “China’s leap into space,” *The Interpreter,* April 29, 2021
* Leonard David, “Can the U.S. and China Cooperate in Space?” *Scientific American,* August 2, 2021
* White Paper, “China’s space activities in 2011,” *China Daily,* December 30, 2011
* “China white paper sets out five-year space plan,” *BBC News,* December 30, 2011
* Daily Brief, “Chinese satellites will build Belt and Road in space,” *Oxford Analytica,* November 7, 2019.
* Emily de La Bruyere and Nathan Picarsic, “Defusing Military-Civil Fusion,” *Foundation for Defense of Democracies*, May 21, 2021.

**Session 4/5: Chinese Space Doctrine:**

* John Costello, “[Chinese Views on the Information ‘Center of Gravity’: Space, Cyber and Electronic Warfare](https://jamestown.org/program/chinese-views-on-the-information-center-of-gravity-space-cyber-and-electronic-warfare/).” *The Jamestown Foundation*, April 16, 2015.
* Peng Guangqian and Yao Youzhi, ed., “Strategic Information Operations,” *The Science of Military Strategy*, (Beijing: Military Science Publishing House, 2005), 336-346.
* Dean Cheng, [China’s Space Narrative: The Portrayal of the US-China Space Relationship in Chinese Sources and Its Implications for the United States](https://www.airuniversity.af.edu/Portals/10/CASI/Conference-2020/CASI%20Conference%20China%20Space%20Narrative.pdf?ver=FGoQ8Wm2DypB4FaZDWuNTQ%3d%3d) (China Aerospace Studies Institute, October 2, 2020), 20-28, 55-65.
* Mark Stokes et al, “Section One: Drivers for Current and Future PLA Space/Counterspace Capabilities,” in [China’s Space and Counterspace Capabilities and Activities](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf)*,* (*U.S.-China Economic and Security Review Commission*, March 30, 2020), 8-21.

**Sessions 6: China’s Defense Industry**

* [Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020](https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF), (U.S. Department of Defense: 2020), i, 84, 138, 139-143, 154-160.
* Tai Ming Cheung, [*Fortifying China: The Struggle to Build a Modern Defense Economy*](https://cloudflare-ipfs.com/ipfs/bafykbzaceafld6kvzjveipeo23q4lbm6g5qw3ms3y5htxxjges245ese4s2rg?filename=Tai%20Ming%20Cheung%20-%20Fortifying%20China_%20The%20Struggle%20to%20Build%20a%20Modern%20Defense%20Economy-Cornell%20University%20Press%20%282008%29.pdf) (Ithaca: Cornell University Press, 2009), 1-9, 100, 114, 120, 235-262.
* Michael Chase et al, [*China’s Incomplete Military Transformation: Assessing the Weaknesses of the People’s Liberation Army*](https://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR893/RAND_RR893.pdf)*,* (Santa Monica: RAND Corporation, 2015), xii, 15, 17, 19, 20, 26, 125-134.
* Tai Ming Cheung (Ed), *Forging China’s Military Might: A New Framework for Assessing Innovation,* (Baltimore: John Hopkins University Press, 2014), 1-65, 169-212, 273-279.
* Caitlin Campbell, “[China’s Military: The People’s Liberation Army (PLA](https://fas.org/sgp/crs/row/R46808.pdf)*)*,” *Congressional Research Service*, 2021, 50-51.
* Mark Stokes et al, “Section Three: Space/Counterspace Force Modernization,” in [China’s Space and Counterspace Capabilities and Activities](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf)*,* (*U.S.-China Economic and Security Review Commission*, March 30, 2020), 8-21.
* McGerty, Fenella, and Meia Nouwems, “Another Strong Year for China’s Defence Companies.” *IISS*, July 13, 2021, [www.iiss.org/blogs/analysis/2021/07/china-defence-companies](http://www.iiss.org/blogs/analysis/2021/07/china-defence-companies).
* Shun Zhenhuan, “Reform of China’s Defense Industry,” *Fas.org*, Institute for National Strategic Studies, <https://fas.org/nuke/guide/china/doctrine/zhenhuan.htm>.
* Mark Ashby et al., [Defense Acquisition in Russia and China](https://www.rand.org/pubs/research_reports/RRA113-1.html/), (Santa Monica: RAND Corporation, 2021).
* Dean Cheng, “[How China Has Integrated Its Space Program into Its Broader Foreign Policy](https://www.airuniversity.af.edu/Portals/10/CASI/documents/Research/CASI%20Articles/2021-03-29%20China%20Space%20and%20Foreign%20policy.pdf?ver=kfO2J-IInVZmNQSjwfM0Yg%3d%3d),” *China Aerospace Studies Institute*, March 2021.

**Session 7: Space Organization and Civil-Military Fusion**

* Lorand Laskai, “Statement of Lorand Laskai.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf), Testimony before US China Economic and Security Review Commission, April 25, 2019, 126-140.
* <https://chinapower.csis.org/podcasts/chinas-civilian-space-program/> around minute 14
* Michael Gold, “Statement of Michael Gold, J.D.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf) Testimony before US China Economic and Security Review Commission, April 25, 2019, 126-143.
* Kevin J. Wolf, “Statement of Kevin J. Wolf, J.D.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf) Testimony before US China Economic and Security Review Commission, April 25, 2019, 151-162.
* Elsa Kania and Lorand Laskai, “Myths and Realities of China’s Military-Civil Fusion Strategy,” report for Center for a New American Security (Washington DC), January 28, 2021.
* “Military-Civil Fusion Development Strategy” in [Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2020](https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF), (U.S. Department of Defense: 2020), 18-23.
* Caitlin Campbell, “[China’s Military: The People’s Liberation Army (PLA](https://fas.org/sgp/crs/row/R46808.pdf)*)*,” *Congressional Research Service*, 2021, 40-41, 48-50.
* Alexander Bowe, “[China’s Pursuit of Space Power Status and Implications for the United States](https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Space%20Power%20Goals.pdf),” *U.S.-China Economic and Security Review Commission*, April 11, 2019, 8-11.
* Costello, John, and Joe McReynolds, China’s Strategic Support Force: A Force for a New Era [<https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/china-perspectives_13.pdf>]\*,National Defense University, China Strategic Perspectives, No.m13 (September 2018).
* Burton, Rachel and Mark Stokes, The People’s Liberation Army Strategic Support Force Leadership and Structure [<https://project2049.net/2018/09/25/the-peoples-liberation-army-strategic-support-force-leadership-and-structure/>] (Arlington, VA: Project 2049 Institute, September 25, 2018).
* Kania, Elsa, “China’s Strategic Arsenals in a New Era ” [[https://thebulletin.org/2018/04/chinas-strategic-arsenals-in-a-new-era/],](https://thebulletin.org/2018/04/chinas-strategic-arsenals-in-a-new-era/) Bulletin of the Atomic Scientists,April 20, 2018.
* Defense Intelligence Agency, “[Challenges to Security In Space](https://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Space_Threat_V14_020119_sm.pdf),” Jan. 2019, 14-15.
* Kevin Pollpeter et al, “[China Dream, Space Dreams: China’s Progress in Space Technologies and Implications for the United States](https://www.uscc.gov/sites/default/files/Research/China%20Dream%20Space%20Dream_Report.pdf),” *A Report Prepared for the U.S.-China Economic and Security Review,* March 2, 2015, 93-96.
* “[China’s Ambitions in Space: Contesting the Final Frontier](https://www.uscc.gov/sites/default/files/2019-11/Chapter%204%20Section%203%20-%20China’s%20Ambitions%20in%20Space%20-%20Contesting%20the%20Final%20Frontier.pdf),” from the *2019 Report to Congress of the U.S.-China Economic and Security Review Commission*, *U.S.-China Economic and Security Review Commission*, November 2, 2019, 375-376.
* Kevin Pollpeter, “Statement of Kevin Pollpeter.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf) Testimony before US China Economic and Security Review Commission, April 25, 2019, 183-210.
* Mark Stokes, “Statement of Mark Stokes.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf) Testimony before US China Economic and Security Review Commission, April 25, 2019, 210-221.
* Jonathan Ray, “Statement of Jonathan Ray.,” in [Hearing on China in Space: A Strategic Competition?](https://www.uscc.gov/sites/default/files/2019-10/April%2025%202019%20Hearing%20Transcript.pdf) Testimony before US China Economic and Security Review Commission, April 25, 2019, 221-232.
* Kevin L. Pollpeter et al, “Chapter 4: The Strategic Support Force” in [The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations](https://www.rand.org/pubs/research_reports/RR2058.html), (Rand Corporation, November 10, 2017), 13-21.
* Kevin L. Pollpeter et al, “Chapter 5: The SSF’s Organizational Structure for the Space Mission” in [The Creation of the PLA Strategic Support Force and Its Implications for Chinese Military Space Operations](https://www.rand.org/pubs/research_reports/RR2058.html), (Rand Corporation, November 10, 2017), 25-27.
* Todd Harrison et al[, Space Threat Assessment 2021](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/210331_Harrison_SpaceThreatAssessment2021.pdf?gVYhCn79enGCOZtcQnA6MLkeKlcwqqks), *CSIS*, April 2021, 8-9.
* Marc Julienne, “Chinese Space Institutional Landscape” in [China’s Ambitions in Space: the Sky’s the Limit](https://www.ifri.org/sites/default/files/atoms/files/julienne_china_ambitions_space_2021.pdf), *Center for a New American Security*, January 2021, 17-27.
* Kania, Elsa B., and Lorand Laskai, “[Myths and Realities of China’s Military-Civil Fusion Strategy,](https://www.cnas.org/publications/reports/myths-and-realities-of-chinas-military-civil-fusion-strategy)’ *Center for a New American Security*, January 2021.
* Josh Baughman, “MCPA - Baughman - China’s Satellite Super Factories,” *Public.milcyber.org*, June 22, 2021, <https://public.milcyber.org/activities/magazine/articles/2021/baughman-chinas-satellite-super-factories>
* Mark Stokes et al, “Section Two: PLA Space/Counterspace Infrastructure: The Role of the PLA Strategic Support Force,” in “[China’s Space and Counterspace Capabilities and *Activities*](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf)*,* (*U.S.-China Economic and Security Review Commission*, March 30, 2020), 8-21.
* Mark Stokes et al, “Section Four: Military-Civil Fusion (MCF) Policies and International Cooperation,” in “[China’s Space and Counterspace Capabilities and *Activities*](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf)*,* (*U.S.-China Economic and Security Review Commission*, March 30, 2020), 8-21.
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**COURSE PARTICIPATION REQUIREMENTS**

**Attendance**

Students **MUST sign the roster every day of class** to receive credit.

**Protocol for Classroom Behavior**

Any good class will encourage diverse perspectives, which can only enhance analytical and critical thinking skills. You may find some opinions unacceptable and you may dislike some comments made by the instructor or by other students. All students are expected to behave in a civil manner. It is everyone’s duty to treat individuals and their opinions with common courtesy and respect.