

Haifa University
Israel National Defense College

Security and Politics of Space

February-April 2020
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What will we learn in the course?

The course will discuss policy, security and economic issues relating to the relationship between global politics and technology through exploring the strategic status of space as both an area and a technological field. Matters to be discussed include the changing nature of power in the international arena; the fight for dominance; the changes in the nature of war; strategies and mechanisms for influencing the flow of knowledge and technology, and more. All of these in historical and contemporary view of the interconnected fight in the Cold War, today and in the future.

Class conduct and reading list

The lesson will be conducted in the form of a discussion of the various issues. Therefore, it is recommended to review the reading list and to select one reading item before each lesson as background material for reference. The lessons will not focus on the details as these are intended to enrich the discussion as well as to provide a starting point for a reading list for the final paper.

Meeting Layout:

Meeting 1: February 26th

Meeting 2: March 4th

Meeting 3: March 11th (Purim)

Meeting 4: March 18th (will end at 17:30)

Meeting 5: April 1st

*Due to constraints by the lecturer, the meeting planned for March 25th will not take place. Participants who choose this seminar will finish at 12:00 on that day.

Writing assignment or what needs to be done in order to finish the course?

Submission of a short paper on a topic chosen by the student:

Topic Examples:

1. Evaluating the motives for developing or failing to develop space capabilities in any country based on its characteristics and recommending policies for the future.
2. Analyzing the international and national implications of new technological realities and formulating a policy recommendation for a specific country.
3. Strategies for addressing threats in the space area from the point of view of the private market or of countries.
4. Assessing the influence of private actors on the design of the rules of the game in space management.

Guidelines: Up to 7 pages; font: David 12; spacing: 1.5; margins: 2.5 each side (not including bibliography).

Recommended Background Material

- **Exploring the Unknown**
A 7 part series that offers edited files of original archive documents with commentary by experts. Free access to digital copies may be found here:
<http://history.nasa.gov/series95.html>
- Toward a Theory of Spacepower- Selected Essays ,
<http://www.dtic.mil/dtic/tr/fulltext/u2/a546585.pdf>
- Wright, D., Grego, L. and Gronlund, L. (2005), *The Physics of Space Security- A reference manual*, (Cambridge: American Academy of Arts and Science)

First Meeting, February 26th, 2020

Part A – Global Politics and “space Engineering without any Space Engineers”

Optional Reading:

- Roger D. Launius, Erik M. Conway, Andrew K. Johnston, Zse Chien Wang, Matthew H. Hersch, Deganit Paikowsky, David J. Whalen, Eric Toldi, Kerrie Dougherty, Peter L. Hays, Jennifer Levasseur, Ralph L. McNutt, Jr., and Brent Sherwood, (May 2012), “Spaceflight: The Development of Science Surveillance, and Commerce in Space”, *Proceedings of the IEEE*, Vol. 100, pp. 1785-1818.

Part B- Beginning of the Cold War and of the Race to Space – From an Intelligence-Security Force Build-up Strategy to Projecting Power through a Public Civic Program

- Paikowsky, D., *The Power of the Space Club*, (Cambridge: Cambridge University Press, 2017), Chapter 3, pp. 48-73

Optional Reading:

- Gaddis, J.L. *The Long Peace, Inquiries into the history of the Cold War*, (Oxford: Oxford University Press, 1987) pp. 195- 214

Second Meeting, March 4th, 2020

The Struggle for Superiority and the Creation of a Space Club – Projecting Power and Strategies for Managing the Flow of Knowledge and Technology in the Struggle for Power and Leading

- Paikowsky, D., *The Power of the Space Club*, (Cambridge: Cambridge University Press, 2017), Chapter 4, pp. 74-91

Optional Reading:

- Logsdon, J., (1996), "The Development of International Space Cooperation", in: Logsdon, J., Day, D. and Launius, R.D., (eds.), *Exploring the Unknown – Selected Documents in the History of The U.S. Civilian Space Program Volume II: External Relationships*, (Washington DC: The NASA History Series, NASA History Office), pp.188-15. <http://history.nasa.gov/SP-4407/vol2/v2intro.pdf>
- Krige, J. (2007), "NASA as an Instrument of U.S. Foreign Policy", in: Dick, S. J. and Launius, R.D., (eds.), *Societal Impact of Spaceflight*, (Washington DC: NASA History Division), pp. 207-218. Available at: <http://history.nasa.gov/sp4801-part1.pdf>

Third Meeting, March 11th, 2020 (Purim)

Part A- Continuation- The Race to Space from the Point of View of Second Order Superpowers and Small States- Space Programs in Additional Countries or why Join the Club?

****Israel**

- Ben Israel, I., and Paikowsky, D., "The Iron Wall Logic of Israel's Space Programme", *Survival*, Vol. 59, No. 4, August-September 2017, pp. 151-166.

Optional Reading:

- Paikowsky, D., *The Power of the Space Club*, (Cambridge: Cambridge University Press, 2017), Chapter 5 (France/Britain), Chapter 7, (India/Israel), pp. 92-115, 145-177.

Part B- Warfare in the Fourth Dimension – Space Technology and the Change on the Nature of War – RMA and the Case of Space

- Max Boot, "The New American Way of War," *Foreign Affairs*, 82 no. 4 (July/August 2003): 41-58.

Optional Reading:

- Mowthorpe, M. (September 2002), "The Soviet/Russian Approach to Military Space". In: *The Journal of Slavic Military Studies*. Vol. 15, No. 3, pp. 25-48.
- Koller, J., "US Forces Can't Hide from Ubiquitous Satellites. They Need to Fool Them.", *Defense One*, December 16, 2019, Available at: https://www.defenseone.com/ideas/2019/12/us-forces-cant-hide-ubiquitous-satellites-they-need-learn-fool-them/161913/?oref=defenseone_today_nl

Fourth Meeting, March 18th, 2020

Part A- Warfare in the Fifth Dimension – The Threat of Cyber on Space Systems

Recommended Reading:

- Paikowsky, D. and Baram, G., "Space Wars: Why our space systems need an upgrade?", *Foreign Affairs*, (January 7, 2015), [On-line Snapshot on cyber and space] Available at: <http://www.foreignaffairs.com/articles/142690/deganit-paikowsky-and-gil-baram/space-wars>

Optional Reading:

- Falco, G., "Job One for Space Force: Space Asset Cybersecurity", *Cyber Security Project*, Belfer Center Paper, July 2018, Available at: <https://www.belfercenter.org/sites/default/files/files/publication/CSP%20Falco%20Space%20Asset%20-%20FINAL.pdf>

Parts B-C- Space Economy – Old vs. New – The Awakening of the Space Market after the War and Strengthening of the Private Sector – Future of the Space Club – And the Path to a Space Economy

(Part C will come instead of the meeting on March 25th that will not take place)

- Weinzierl, M., "Space, the Final Economic Frontier", Journal of Economic Perspectives, Volume 32, Number 2, Spring 2018, Pages 173–192.

Optional Reading:

- Paikowsky, D., "What is New Space?", The changing ecosystem of global space activity", New Space Journal, Vol. 5, Issue, 2, June 2017, pp. 84-88.
- Paikowsky, D., The Power of the Space Club, (Cambridge: Cambridge University Press, 2017), Chapter 8, pp. 178-209.
- Musk, E., "Making Humans a Multi-Planetary Species", New Space, Vol. 5, No. 2, 2017, pp. 46-61.

Fifth Meeting, April 1st (Last Meeting)

Parts A-B – Dealing with Threats on Space Assets: Deliberate and Undeliberate Threats, Typology for Space Weapons, Political Mechanisms for Dealing with the Threats

- Space Security 2019 Executive Summary (Waterloo: University of Waterloo Press, 2019). Available at:
<http://spacesecurityindex.org/wp-content/uploads/2019/10/SSI2019ExecutiveSummaryCompressed.pdf>
- Robinson, J., "Transparency and Confidence-Building Measures for Space Security", Space Policy, Vol. 27, Issue 1, February 2011, Pages 27-37