SCHAR SCHOOL OF POLICY AND GOVERNMENT
George Mason University

BIOD 760 (Fall 2025)

National Security Technology and Policy

Class Time: Wed, 1630-1910
Location: *Room 477*, Van Metre Hall, Arlington, VA
Instructor: Dr. Benjamin J. Fernandes, bfernan2@gmu.edu
Office Hours by appointment, always available after class until 2030.

I am reviewing the lesson readings to make sure material is current. Another update will be posted in early Aug on Canvas and the GMU website. Given the constantly evolving nature of the material, expect adjustments throughout the course. Recommendations are always welcome.

Course Description/Overview:

This course **will improve your ability to understand how technology affects national security**, especially in warfare, and help make you succeed as a national security professional. You will practice thinking about using technology to solve real national security problems and the tradeoffs that must be made to adopt new technology. This is a practical course, where you will learn a lot about the military. Civilian control of the military is a foundational American principle; this course will help you understand the military operationally and how technology impacts the use of the military. I expect students to have no military or technical experience.

The **course emphasizes warfare and the Department of Defense** because it is my strength and where the impacts are clearest. This course *surveys* today's technology landscape to provide familiarity with most major technologies. Examining a wide variety of historical, current, and future technologies will **demonstrate how *strategy, doctrine, and organization determine technology's impact* as much or more than the technology itself** – for any part of national security or even non-security businesses.

Expect up to 150 pages of reading per week and to actively participate in each class, which *requires* reading before class.

Course Learning Outcomes:

By the end of the course students will be:

1. able to adapt strategy, doctrine, and organization to make new technology effective.
2. able to analyze how technology, new or old, can achieve national security goals.
3. able to recall key debates over adopting new technologies – ethical implications, diffusion, rapid adaptation, and what drives change (requirements vs. tech).
4. better critical thinkers, writers, and presenters of complicated policy ideas.
5. familiar with many major technologies affecting national security.

6. exposed to the fundamental tenets of the Defense Department's acquisition process and the transition of research and development into fielded capabilities.

Grading Schema:

A: 94-100; A-: 90-93; B+ = 87-89%, B = 84-86%, B- = 80-83%; C+ = 77-79%, C = 74-76%, C- = 70-73%, D = 60-69%, F = 59% and below; I do [not] round up at .5 or higher.

Deliverables and Grading Policies:

Class Participation:	15% (150 pts - 15/day, lowest grades dropped)
Reading Quizzes:	15% (150 pts - 15/day, lowest grades dropped))
Team Tech Debate:	20% (200 pts)
Group Briefing & Op-Ed:	20% (200 pts)
Problem Solution Memo:	30% (300 pts)

Class Participation Expectations, Quizes, & Grading

Class interaction is important for learning for you and your peers. To encourage this, class participation is a significant component of your grade and ***not*** an automatic A. You should receive a grade from me every week in Blackboard. You will need to:

1. Arrive to class on time.
2. Classes will start with a short 5-minute multiple choice or fill-in the blank quiz on the readings.
3. Prepare for class – complete the readings before class and be prepared to answer questions. For an A, I require quality contributions, which means substantive comments that feed class discussion or respond to the comments of others; *not* non-sequiturs or rambling discussions. I encourage students to change their arguments when they learn new information. If you say nothing in class, you may receive a C for the day. Your overall class participation grade is an average of your bi-weekly grades. I will drop the lowest two scores.
   - A+: **Changes the professor's opinion**/provides **new information** the professor was not aware of.
   - A: Understands the **assumptions and limitations behind the readings**; **responds to/engages with the comments** of others; **original thoughts** that go beyond the readings. On Time.
   - B: Demonstrates **reading knowledge** & participates in class (relevant questions/comments)
   - C: **Attends Class**; questions and comments only agreeing with or repeat what others say
   - D: Absent without excuse or fails to provide book summary for excused absences.
4. If we need to shift to an online class for some reason, please leave your video camera on. Backgrounds are ok, but I should be able to see your face in class the entire time, except during breaks. The purpose is encouraging paying attention and active participation. Wearing sweatpants or eating during class is fine, except for your group presentation. If presenting you should be professional, business casual.

Team Technology and Acquisition Debate

In Class 3, each group will receive an assigned technology and debate position for Class 7. The group will receive a grade on the thoroughness of their arguments and ability to respond to the other side's arguments. The team will provide an 800-word op ed with their position.

Group Project Expectation and Grading

In the final two classes, each group will provide a briefing on a topic of their choosing and an 800-word op ed with their position.

Problem Solution Memo (Individual)

Identify a national security problem and explain how to use technology *and* strategy, doctrine, *or* organizational adjustments to solve the problem. Max 2,500 words (excluding footnotes, word has a check box that excludes footnotes in the word count). Your problem is an assumption. Spend a couple sentences and a source or two to describe the overall problem to the reader; do ***NOT*** justify the problem. As necessary, discuss more specific points of the problem as part of the solution. Describe the costs and benefits of your solution. Costs are broader than money and may include opportunity costs. Your solution must be in the realm of possible economically and technologically (e.g., no trillion-dollar planes or teleportation). **In Canvas, topic proposals due at 2359 Sat 4 Oct, Papers due at 2359 Mon 15 Dec 2025.**

Prof Writing pet peeves:

"Many scholars think/say…" because to me it relates to "dirty trick #3"/ "appeal to authority."[1] I care what *you* think and the *merits* of your argument not what other scholars think. Individual scholars are a good source of ideas and evidence but treating scholars as a group removes all the nuance.

Eliminate wasted words and phrases such as "As you are aware," – if the audience is aware, no need to write it. If not, no need to waste words on a false statement. *Use* active voice, *avoid* passive voice.

Avoid asking the reader questions. The primary purpose of professional writing is answering questions not asking them. Not an absolute, but good general rule of thumb.

Format *requirements* for all papers:

Submit a word document into Canvas – I will use anonymous grading. If you have Canvas problems email me. **File name should be G####-Topic (e.g., G123456-Info Ops).** Do not include your name anywhere in the document. If citing yourself, use your G#. **Include your G#, topic, and word count on the first page along with a page number on every page.** Use footnotes (NOT endnotes or parenthetical) I accept any format (APA, Turabian, Chicago, etc.) and recommend using Zotero or another footnote tool. Otherwise, font and format are generally up to you. I recommend using the default to save time.

Memo Grading:

1. A Memo: Presents a clear problem and logical solution concisely without typographical or grammar errors. Always addresses counterarguments

[1] Linda Elder and Richard Paul, *Thinker's Guide to Fallacies* (Foundation for Critical Thinking, 2006).

and generally provides creative solutions.

2. B Memo: Presents a problem and solution with minor grammar or typographical errors. Addresses obvious counterarguments.
3. C Memo: Unclear problem or question solution with grammar or typographical errors.

Academic Standards

Academic Standards exist to promote authentic scholarship, support the institution's goal of maintaining high standards of academic excellence, and encourage continued ethical behavior of faculty and students to cultivate an educational community which values integrity and produces graduates who carry this commitment forward into professional practice.

As members of the George Mason University community, we are committed to fostering an environment of trust, respect, and scholarly excellence. Our academic standards are the foundation of this commitment, guiding our behavior and interactions within this academic community. The practices for implementing these standards adapt to modern practices, disciplinary contexts, and technological advancements. Our standards are embodied in our courses, policies, and scholarship, and are upheld in the following principles:

- Honesty: Providing accurate information in all academic endeavors, including communications, assignments, and examinations.
- Acknowledgement: Giving proper credit for all contributions to one's work. This involves the use of accurate citations and references for any ideas, words, or materials created by others in the style appropriate to the discipline. It also includes acknowledging shared authorship in group projects, coauthored pieces, and project reports.
- Uniqueness of Work: Ensuring that all submitted work is the result of one's own effort and is original, including free from self-plagiarism. This principle extends to written assignments, code, presentations, exams, and all other forms of academic work.

Violations of these standards—including but not limited to plagiarism, fabrication, and cheating—are taken seriously and will be addressed in accordance with university policies. The process for reporting, investigating, and adjudicating violations is outlined in the university's procedures here. Consequences of violations may include academic sanctions, disciplinary actions, and other measures necessary to uphold the integrity of our academic community.

The principles outlined in these academic standards reflect our collective commitment to upholding the highest standards of honesty, acknowledgement, and uniqueness of work. By adhering to these principles, we ensure the continued excellence and integrity of George Mason University's academic community.

Student responsibility:
Students are responsible for understanding how these general expectations regarding academic standards apply to each course, assignment, or exam they participate in; students should ask their instructor for clarification on any aspect that is not clear to them.

Accommodations for Students with Disabilities

Disability Services at George Mason University is committed to upholding the letter and spirit of the laws that ensure equal treatment of people with disabilities. Under the administration of University Life, Disability Services implements and coordinates reasonable accommodations and disability-related services that afford equal access to university programs and activities. Students can begin the registration process with Disability Services at any time during their enrollment at George Mason University. If you are seeking accommodations, please visit the Disability Services website for detailed information about the Disability Services registration process. Disability Services is located in Student Union Building I (SUB I), Suite 2500. Email: ods@gmu.edu. Phone: (703) 993-2474.

Student responsibility:
Students are responsible for registering with Disability Services and communicating about their approved accommodations with their instructor in advance of any relevant class meeting, assignment, or exam.

FERPA and Use of GMU Email Addresses for Course Communication

The Family Educational Rights and Privacy Act (FERPA) governs the disclosure of education records for eligible students and is an essential aspect of any course. **Students must use their GMU email account** to receive important University information, including communications related to this class. Instructors will not respond to messages sent from or send messages regarding course content to a non-GMU email address.

Student responsibility:
Students are responsible for checking their GMU email regularly for course-related information, and/or ensuring that GMU email messages are forwarded to an account they do check.

Title IX Resources and Required Reporting

As a part of George Mason University's commitment to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community, the University does not discriminate on the basis of sex or gender in any of its education or employment programs and activities. Accordingly, **all non-confidential employees, including your faculty member, have a legal requirement to report to the Title IX Coordinator, all relevant details obtained directly or indirectly about any incident of Prohibited Conduct** (such as sexual harassment, sexual assault, gender-based stalking, dating/domestic violence). Upon notifying the Title IX Coordinator of possible Prohibited Conduct, the Title IX Coordinator will assess the report and determine if outreach is required. If outreach is required, the individual the report is about (the "Complainant") will receive a communication, likely in the form of an email, offering that person the option to meet with a representative of the Title IX office.

For more information about non-confidential employees, resources, and Prohibited Conduct, please see University Policy 1202: Sexual and Gender-Based Misconduct and Other Forms of Interpersonal Violence. Questions regarding Title IX can be directed to the Title IX Coordinator via email to TitleIX@gmu.edu, by phone at 703-993-8730, or in person on the Fairfax campus in Aquia 373.

Student opportunity:
If you prefer to speak to someone confidentially, please contact one of Mason's confidential employees in Student Support & Advocacy (SSAC), Counseling and Psychological Services (CAPS), Student Health Services (SHS), and/or the Office of the University Ombudsperson.

Generative Artificial Intelligence (GenAI)

As future national security professionals, you should be fluent with GenAI tools—understanding their strengths, limits, and best practices. Used wisely, GenAI can improve your learning. Used poorly, it will hinder learning and may lead to academic violations.
GMU's AI Policy

Encouraged Use AI generally, and Patriot AI specifically:

- Deeper engagement and interaction with readings
- Brainstorm ideas
- Create outlines
- Refine your writing. (Think of it like using the Writing Center.)

Discouraged Use:

- Having AI write your papers, which may breach academic standards.
- Using AI to summarize readings without further engagement

These shortcuts undermine your learning and may breach academic standards.

Key rules:

1. **You're responsible** for anything AI helps you create.
2. **Be transparent** about your use
3. **AI lies *confidently*** — always verify

Use GenAI as an *interactive partner*, not a crutch.