

Hands-On Open Source Intelligence

(How to Find Out Stuff They Don't Want You to Know)

SEST-6650

Spring 2025
Security Studies Program
Edmund A. Walsh School of Foreign Service
Georgetown University

Professor: Ryan Fedasiuk

Class Meets: Wednesdays, 6:30-9:00pm

Office Hours: Wednesdays, 5:30-6:30pm or by appointment

Course Description

The gap between what governments know and what members of the public can discover is shrinking. High-quality, publicly accessible data and analytic tools outside government are democratizing what were once unique capabilities held exclusively by national security institutions. The renaissance in open-source investigations has already started reshaping the conduct of foreign policy and security studies, bringing new opportunities but also challenges for analysts, academics, policymakers, and journalists — and the subjects of their investigations.

This course introduces students to publicly available data sources, analytic methods, and landmark case studies across the major intelligence disciplines (including imagery, financial, and signals intelligence) — which are useful for a wide range of careers in and outside government. The first three weeks focus on the history, law, and ethics surrounding open-source intelligence (OSINT). The remainder consists primarily of guided lectures and interactive lab modules. This class is designed to help students build a portfolio of publishable products for use on the job market, including two takehome assignments and a final project. Among other skills, students will learn how to search for patterns in blocks of text, measure objects with an image editor, locate scenes with Google Earth, map relationships with Maltego, identify shell companies with OpenCorporates, query the deepweb and darkweb, scrape websites with Python, and discover networked devices using freely available web services. We will also discuss best practices for research design and project management; online privacy and security; and ethical conduct in pursuit of the truth.

Course Learning Objectives

OSINT is too broad a discipline to be mastered by any individual or covered adequately by a single course. What follows is a maze of rabbit holes that invite lifelong specialization. By the end of this course, students will have the foundational knowledge needed to conduct independent, open-source investigations using a wide range of tools, datasets, and research techniques. Among other data sources, students will learn how to find and analyze public records, ground and satellite imagery, aerial and maritime positioning data, social media posts, corporate registries, cryptocurrency transactions, and technical information about Internet-of-Things (IoT) devices.

Course Expectations

Technical Ability: Students are not expected to hold any particular subject matter expertise or advanced computer skills before taking this course. That said, this course will introduce students to some basic concepts in network engineering, as well as link analysis with [Maltego \(register online\)](#) and coding with [Python](#). Learning these tools can be challenging. Students are encouraged to complete all assigned reading, raise questions proactively, and come to class with an open mind.

Throughout the course, students may be asked to download or create free accounts on several social media platforms, computer applications, and online services including:

- [Google Chrome](#)
- [GNU Image Manipulation Program](#) (GIMP)
- [Google Earth Pro](#) ([system requirements](#))
- [ArcGIS Pro](#) ([system requirements](#))
- [OpenCorporates](#)
- [Sublime](#) (or other code text editing application)
- [Shodan](#)

Reading: Each reading has been carefully selected and excerpted where possible to help students meet the learning objectives for this course. The first three weeks are reading-intensive with a focus on history, ethics, and law. The remainder of the course features shorter, more practical selections. Where possible, students may choose from among several case studies to read about.

Students are not required to purchase any materials for this class. We will not use a textbook. When preparing at-home assignments and capstone projects, students may also consider consulting the following resources, which list several tools beyond those covered in class:

Print:

- Michael Bazzell, *OSINT Techniques Resources for Uncovering Online Information, 10th Edition* (New York: independently published, 2023).
 - See also: <https://inteltechniques.com>.
- Jennifer Sims, *Decision Advantage: Intelligence in International Politics from the Spanish Armada to Cyberwar* (Oxford: Oxford University Press, 2022).
- Amy Zegart, *Spies, Lies, and Algorithms: The History and Future of American Intelligence* (Princeton: Princeton University Press, 2022).

Online:

- Aleksandra Bielska, Noa Rebecca Kurz, Yves Baumgartner, and Vytenis Benetis, *Open Source Intelligence Tools and Resources Handbook* (Germany: i-Intelligence, 2020): https://i-intelligence.eu/uploads/public-documents/OSINT_Handbook_2020.pdf.
- Sanjoy Mahajan, *Street-Fighting Mathematics: The Art of Educated Guessing and Opportunistic Problem Solving* (Cambridge: MIT Press, 2010): <https://sept.mit.edu/sites/default/files/Streetfighting%20Mathematics.pdf>.

Course Requirements and Means of Assessment

Grading: Students will be assigned a grade based on their final capstone project and final presentation (30%), midterm exam (25%), at-home assignments (25%), and in-class contributions (20%). No student can pass a course without completing all assignments. Students are responsible for retaining a copy of all assignments until they have received a grade. At the end of the semester, final grades will be rounded to the nearest half-percentage point.

- **Contribution – 20%:** Students are expected to complete all assigned reading and participate actively in class. There will be a number of discussion opportunities during each class session.
- **At-Home Assignments – 25%:** Throughout the semester, students will be asked to complete two (2) at-home assignments, which are weighted equally and due via Canvas. These OSINT challenges are designed to teach students to independently conduct different types of investigations and should not take more than 60 minutes each to complete. While exact assignment formats vary, students will generally be asked to follow instructions provided in a fillable 1-page word document.
- **Midterm Exam – 25%:** Students will complete a timed (2.5-hour) online, open-book midterm examination in the 7th week of class, to be submitted via Canvas. The exam will assess students' comprehension of core themes from assigned readings, and ability to complete a handful of OSINT challenges within a limited timeframe. As we will learn, balancing speed with accuracy is one of OSINT's comparative advantages.
- **Capstone Project – 30%:** In consultation with the instructor during office hours in the first three weeks of class, students will prepare an analytic product on a topic of their choosing, due via Canvas by 6:59pm ET on Wednesday, May 7. While exact length and formatting may vary, students should aim for the final product to fall between 5-8 pages (single-spaced, Times New Roman, inclusive of any charts, graphs, and footnotes). Students may choose to produce an [intelligence report](#), [think tank analysis](#), [due diligence memo](#), [journal article](#), or [extensive blog post](#). Regardless of format, the product must:
 - 1) Make an argument. It is not sufficient to merely establish a fact (e.g. "Bank ABC is likely controlled by person DEF, judging from XYZ"); rather, you should explain the significance of the finding in the context of a broader policy problem.
 - 2) Feature at least two different modes of analysis covered during the course. For example, you might consider analyzing the sentiment of texts in a subject's social media posts, in addition to geolocating posted images; or tracking patterns in a ship's transponder data in addition to investigating the backgrounds of its crew members. The chosen methods should make sense to pair together, and complement each other to form a cohesive argument.
 - 3) Include an executive summary. This should take the form of 1-3 paragraphs and/or a bulleted list of key findings ([example](#)). It should conclude with a comment on why your findings are significant.

Students will be graded based on the quality of the product's methodology, key findings as featured in an executive summary, and overall clarity of writing. Students will present their capstone projects during our final exam session. The 10-minute briefing should 1) identify an intelligence gap and associated policy problem, 2) present the key findings, 3) explain the research methodology, and 4) discuss implications for policy.

Grade	Grading Scale
A	100-94
A-	93-90
B+	89-87
B	86-84
B-	83-80
C	79-70
F	Under 70

Below please find an assessment of what the grades mean.

A	4.0	Brilliant and original work, nearly publishable. Commendably clear and thoroughly analytical; comprehensively supported by, and systematically substantiated with, voluminous empirical evidence.
A-	3.67	Excellent work; powerful analysis with a distinctive, well-structured argument; critical and full awareness of the literature alongside masterful use of empirical evidence to support and substantiate the arguments presented.
B+	3.33	Very good; fine analysis with a coherent argument, most of the most important points are developed in a structured discussion; well-substantiated with clear and firm command of supporting empirical evidence.
B	3.0	Good; sound analytical skill shown from identification and understanding of the core intellectual problem accompanied by a clear discussion of the subject substantiated with some (albeit, perhaps insufficient) empirical evidence.
B-	2.67	Satisfactory; basic analytical skills apparent from identification of the intellectual problem and an insufficiently developed discussion of it. Poorly structured with inadequate empirical evidence provided.
C	2.0	Below average. Weak analysis and an incoherent argument, bare evidence of ability to identify intellectual problem, little use of empirical evidence and minimal knowledge of literature.

Late Work: Late submissions will be penalized up to two-thirds of a letter grade (i.e. an assignment typically meriting an "A" would receive a grade of "B-") for every day the assignment exceeds the deadline. In extenuating circumstances (family or health emergency), this penalty may be waived for up to one (1) week for (1) assignment. There is no grace period granted for the final capstone project.

Brief Course Outline

Session	Date	Topic	Due Dates
Week 1	January 15	Open Sources and the Secrets Industry	-
Week 2	January 22	OSINT Origins and Role in the Policy Process	Intro Email Due
Week 3	January 29	Ethics and Law	-
Week 4	February 5	Efficient Web Browsing and Text Analysis	-
Week 5	February 12	Imagery Analysis and Geolocation	-
Week 6	February 19	Geospatial Analysis and Transportation Tracking	Assignment 1 Due
Week 7	February 26	Midterm Exam	-
Week 8	March 12	Social Media and Link Analysis	-
Week 9	March 19	Corporate Investigations and Illicit Finance	-
Week 10	March 26	Cryptocurrency and the Dark Web	Assignment 2 Due
Week 11	April 2	Automation 1: Scraping	-
Week 12	April 9	Automation 2: Crawling	-
Week 13	April 16	Cybersecurity and Critical Infrastructure	-
Week 14	April 23	Future of OSINT	-
Week 15	May 7	Capstone Presentations (Final Exam Period)	Capstone Project Due