INDIANA UNIVERSITY, BLOOMINGTON

SOIC, DEPARTMENT OF INFORMATION AND LIBRARY SCIENCE

SPRING 2015, SYLLABUS

Z399 SPY TECH FOR NON-TECHNICAL SPIES

Room	LI 031
Class	Tue, Thu 1:00-2:15
Instructor:	Carol E.B. Choksy
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3 CREDITS

PREREQUISITES: NONE

RESOURCES OTHER THAN CLASSROOM NEEDED: NONE

COURSE DESCRIPTION

After World War II the Soviet Union went dark. They changed all their encryptions, closed their borders, and made gathering information nearly impossible. Once they tested a nuclear weapon, it became imperative for the U.S. and its European allies to see into Soviet territory to count missiles, tanks, and industrial power. The U.S. put a very large portion of its industrial power and will into figuring out how to collect actionable information: intelligence. Very different from HUMINT, human intelligence, this information is collected by sensors and interpreted by computers to give us a full spectrum of senses for analysis, recommendations, and decisions. Satellites and drones are only two examples of the platforms developed specifically for gathering technical information.

This course is designed for the non-technical student to explore the powerful and remarkable use of reconnaissance and surveillance technology as it is used for spying, but also for business and civilian government functions.

STUDENT LEARNING OUTCOMES

- Describe six different types of technical intelligence collection
- Compare and contrast the difficulties of five different types of technical intelligence collection

- Name two laws that govern the collection of technical intelligence
- Recognize ethical behavior in real world intelligence activities

REQUIRED BOOKS

Robert M. Clark. *The Technical Collection of Intelligence*. Washington, DC: CQPress, 2011. ISBN-13: 978-1604265644

Julie K. Petersen. *Understanding Surveillance Technologies: Spy Devices, Privacy, History and Applications*. 2nd ed. Boca Raton: Auerback Publications, 2007. ISBN-13: 978-1439873151

ASSIGNMENTS

Students are to assume their audience is the President of the United States, the Director of a major NGO, the CEO of a major corporation, etc. In other words, your audience is very busy and must make an informed decision.

Date Due	% Grade	Assignments
Feb 10	15	First technical collection paper Select a technical collection method, describe its use in an intelligence, political, military, diplomatic, humanitarian, or disaster purpose
Feb 19	5	Find a news article about technical intelligence. The article can be about any aspect of technical intelligence: collection, use by different organizations, ethical issues, how decision-makers have used it, etc. Post the citation for your article and a link to it in the Wiki section of OnCourse
Feb 26	5	Participation in class discussion
Mar 12	15	Second technical collection paper Select another technical collection method, describe its use in an intelligence, political, military, diplomatic, humanitarian, or disaster identification and recovery purpose
Apr 7	15	Third technical collection paper Select another, different technical collection method, describe its use in an intelligence, political, military, diplomatic, humanitarian, or disaster purpose
Apr 21	20	Select a yet another, different technical collection method, describe the ethical and/or legal issues associated with it.
Apr 23	Candy	INTs, INTs, INTs
May 4	25	Select a country, describe eight surveillance techniques—other than human intelligence—used by the government of that country to collect information about other countries or its own citizens

RUBRIC

Traits	Poor	Adequate	Good	Excellent
Focus & Details	The topic and main ideas are not clear.	There is one topic. Main ideas are somewhat clear.	There is one clear, well-focused topic. Main ideas are clear but are not well supported by detailed information.	There is one clear, well-focused topic. Main ideas are clear and are well supported by detailed and accurate information.
Organization	There is no clear introduction, structure, or conclusion.	The introduction states the main topic. A conclusion is included.	The introduction states the main topic and provides an overview of the paper. A conclusion is included.	The introduction is inviting, states the main topic, and provides an overview of the paper. Information is relevant and presented in a logical order. The conclusion is strong.
Research	Research is clearly lacking.	Research not thorough and not clearly presented.	Research is either not thorough or is not clearly presented.	Research is thorough and is clearly presented.
Source Criticism & Confidence Level	Author has not critiqued sources for bias.	Author has made some attempt to critique sources for bias.	Some sources have been critiqued for bias.	Sources have been adequately critiqued for bias.
Voice & Audience Focus	The author's purpose of writing is unclear.	The author's purpose of writing is somewhat clear, and there is evidence of attention to audience. The author's knowledge and/or experience with the topic is/are limited.	The author's purpose of writing is somewhat clear, and there is some evidence of attention to audience. The author's knowledge and/or experience with the topic is/are evident.	The author's purpose of writing is very clear, and there is strong evidence of attention to audience. The author's extensive knowledge and/or experience with the topic is/are evident.
Word Choice	The writer uses a limited vocabulary. Jargon or clichés may be present and detract from the meaning.	The author uses words that communicate clearly, but the writing lacks variety.	The author uses precise words and phrases. The choice and placement of words is inaccurate at times and/or seems overdone.	The author uses precise words and phrases. The choice and placement of words seems accurate, natural, and not forced.
Sentence Structure, Grammar, Mechanics, & Spelling	Sentences sound awkward, are distractingly repetitive, or are difficult to understand. The author makes numerous errors in grammar, mechanics, and/or spelling that interfere with understanding.	Most sentences are well constructed, but they have a similar structure and/or length. The author makes several errors in grammar, mechanics, and/or spelling that interfere with understanding.	Most sentences are well constructed and have varied structure and length. The author makes a few errors in grammar, mechanics, and/or spelling, but they do not interfere with understanding.	All sentences are well constructed and have varied structure and length. The author makes no errors in grammar, mechanics, and/or spelling.

Teamwork	Team argues and is unable to arrive at a final product	Team argues and is able to create a final product, but solution is not coherent	Team partially works through disagreement and solution demonstrates some cohesiveness	Team works through disagreement and solution demonstrates team's willingness to commit to a cohesive solution
Problem definition	Unaware of either general or specific characteristics that preclude routine solution procedures		Aware of general "ill-defined" nature of the problem and some of the specific problem deficiencies	Identifies most important ill-defined aspects of problem as well as general ill-defined problem nature
Awareness of personal bias	Apparently unaware of personal perspectives, biases or assumptions and their effects		Somewhat aware of personal perspective but not fully able to compensate for its effects	Keenly aware of personal perspective and biases and compensates effectively
Context awareness	Apparently unaware of broader context In which problem occurs; assumes singular perspective		Evidence of awareness of problem context found throughout solution process but some important connections and implications not recognized	Also aware of relationship between present problem and context in which it is situated
Problem structuring	Unable or unwilling to structure the problem space within parameters provided		May structure problem space based on superficial problem characteristics or unwarranted assumptions	Uses goal, mission or other ultimates to structure problem space effectively
Persistence	Unsuccessful, sporadic, apparently random, attempts at problem lead to frustration and abandonment		Works through problem systematically but may omit necessary reconsideration of assumptions	Systematically works through problem; often makes multiple passes through the problem space as conditions change in order to assesses consequences of changes or alternatives
Use of failure	Unsuccessful attempts based on untenable assumptions not recognized.		Unsuccessful attempts recognized and abandoned	Unsuccessful attempts regularly used to better understand problem and solution process

Curiosity	Fully commits to first apparent solution path and follows it through to completion without reconsideration	Generates multiple potential solutions but may not consider them all or use appropriate selection criteria	Generates rich variety of alternatives; tests them objectively and selects rationally
Appropriate use of tools	Random or inappropriate application of tools; may not be able to provide reasons for approach selected	Tendency to use particular tools and mechanisms appropriately but may lack ability to justify the approach taken or adjust tools to fit the problem presented	Use general principles and fundamental concepts to frame overall problem space and as solution tools; provides reasonable and substantive justification for assumptions and choices
Commitment to final solution	Likely to display either no confidence in solution or process (may claim problem is impossible) or be inappropriately confident and overly committed to obviously ineffective solution	Likely to lack confidence in solution; limited commitment without encouragement or support	Appropriate level of confidence and commitment to eventual solution
Awareness	Unaware of either general or specific characteristics that preclude routine solution procedures	Aware of general "ill-defined" nature of the problem and some of the specific problem deficiencies	Identifies most important ill-defined aspects of problem as well as general ill-defined problem nature

Adapted from: http://www.readwritethink.org/files/resources/printouts/Essay%20Rubric.pdf

Also adapted from U.S. Air Force Academy "Levels of performance for framing and solving ill-defined problems"

GRADING SCALE

Grade	Points
A	93
A-	90
B+	87
B	83
B-	80
C+	77
C	73
C-	70
D+	67
D	63
D-	60
F	0

COURSE SCHEDULE

Date	Subject	Required Readings	Assignments
Jan 13	*Introduction*	Introduction to the class	
Jan 15	*What is the Technical Collection of Information?*	Paul R. Baumann. History of Remote Sensing, Aerial Photography, Part 1. 2001. http://www.oneonta.edu/faculty/baumanpr/geosat2/RS%20History%20I/RS-History-Part-1.htm Paul R. Baumann. History of Remote Sensing, Satellite Imagery, Part 2. 2001. http://www.oneonta.edu/faculty/baumanpr/geosat2/RS%20History%20II/RS-History-Part-2.html	
Jan 20	*Signatures, Sensors, & Platforms*	Clark, Chapters 1-3 Ralph Vartabedian, W.J. Hennigan, "High-tech spycraft tracked missile's path to Malaysia Airlines jet," Los Angeles Times 17 Jul 2014 http://www.latimes.com/nation/nationnow/la-fg-satellites-ukraine-missile-20140717-story.html	
Jan 22	*Ethics, the Law, & Intelligence*	Michael Herman, "Ethics and Intelligence after September 2001," *Intelligence & National Security* 19, no. 2 (Summer 2004): 342-359. In OnCourse Resources>Readings	
Jan 27	*Seeing & Sensing*	Clark, Chapters 4 & 5	
Jan 29	*Hearing*	Petersen, Chapter 2	
Feb 3	*Sounds humans cannot hear*	Petersen, Chapters 3-4	
Feb 5	*Wired and wireless listening*	Petersen, Chapter 5	
Feb 10	*Radar*	Petersen, Chapter 6	First technical collection paper due 15 points
Feb 12	*Active & Imaging Radar*	Clark, Chapters 6 & 7	
Feb 17	*Infrared*	Petersen, Chapter 7	

Feb 19	*Extending Vision*	Petersen, Chapter 8	Find a news article about technical intelligence. The article can be about any aspect of technical intelligence: collection, use by different organizations, ethical issues, how decision-makers have used it, etc. Post the citation for your article and a link to it in the Wiki section of OnCourse DUE Feb 19 5 points
Feb 24	*The View from Above*	Petersen, Chapter 9 Chris Davis, "China's eyes in the sky point to space exploration's future," China Daily USA 3 Sep 2014 http://usa.chinadaily.com.cn/opinion/2014-09/03/content_18542704.htm	
Feb 26	*Articles posted by students in course wiki*	Read 5 articles posted by students in the Wiki	Read 5 of the articles posted by your classmates (that does not include the one you posted). Participate in class conversation 5 points
Mar 3	*Ultraviolet*	Petersen, Chapter 10	
Mar 5	*X-rays*	Petersen, Chapter 11	

Mar 10	*Sensing Chemicals & Biologics*	Petersen, Chapter 12	
Mar 12	*Biometrics*	Petersen, Chapter 13	Second technical collection paper due 15 points
Mar 17	*Spring Break*	No readings	
Mar 19	*Spring Break*	No readings	
Mar 24	*Using Animal Senses*	Petersen, Chapter 14 Tom Vanderbilt , "The CIA's Most Highly-Trained Spies Weren't Even Human," Smithsonian Magazine, October 2013 http://www.smithsonianmag.com/history/the-cias-most-highly-trained-spies-werent-even-human-20149/#I9ZcXk4OVUgCjhEW.99 BBC Magazine Monitor, "The animals mistaken for spies," 4 Sep 2013 http://www.bbc.com/news/blogs-magazine-monitor-23962379	
Mar 26	*Genetic Material*	Petersen, Chapter 15	
Mar 31	*Passive Sensing*	Clark, Chapter 8	
Apr 2	*Surveilling Space & Non-EM Stuff*	Clark, Chapters 9 & 10	
Apr 7	*Materiel Sampling*	Clark, Chapter 11	Third technical collection paper due 15 points
Apr 9	*Magnetic*	Petersen, Chapter 16	
Apr 14	*Cryptologic*	Petersen, Chapter 17	
Apr 16	*Computers*	Petersen, Chapter 18	
Apr 21	*Cyber Surveillance*	Reporters without Borders. "Enemies of the Internet 2013 Report, Special Edition: Surveillance" 12 Mar 2013 http://surveillance.rsf.org/en/wp-content/uploads/sites/2/2013/03/enemies-of-the-internet_2013.pdf Paul Mozur, "Protesters in Hong Kong Are Targets of Scrutiny Through Their Phones," New York Times 1 Oct 2014 http://www.nytimes.com/2014/10/02/business/protesters-are-targets-of-scrutiny-through-their-phones.html	Technical collection ethics paper due 20 points

Apr 23	*INT, INT, INT*	Review of the INTs	Quiz rewarded with candy, please let the instructor know if you have any food allergies
Apr 28	*Why technical collection is not enough*	Gabriel Margolis, "The Lack of HUMINT: A Recurring Intelligence Problem," *Global Security Studies* 4, no. 2 (Spring 2013): 43-57 http://globalsecuritystudies.com/Margolis%20Intelligence%20(ag%20edits).pdf	
Apr 30	*Last Day of Classes*	Matthew M. Aid & Cees Wiebes, "Introduction on The Importance of Signals Intelligence in the Cold War," *Intelligence and National Security* 16, no. 1 (2001): 1-26	
May 4	*FINAL PAPER DUE*		Select a country, describe eight surveillance techniques—other than human intelligence—used by the government of that country to collect information about other countries or its own citizens. 25 points

INSTRUCTOR COMMUNICATION STATEMENT

COURSE PARTICIPATION AND ATTENDANCE EXPECTATIONS

- This course heavily involves student participation. This necessitates attendance and completion of readings and assignments prior to class.
- Students uncomfortable with participation in class or with a need to practice spoken English should read from notes taken while reading course assignments.
- If you must miss a class because of an illness or family emergency, please let the instructor know. Also make arrangements with your classmates to pick up class notes.

SUMMARY OF COURSE DELIVERY METHODS (ASSIGNMENTS, FORUMS, GROUP WORK, EXAMS)

- The instructor reserves the right to make, with notice, adjustments to the calendar and content of this course syllabus.
- Assignments are either brief papers of five to eight pages or an exam. Papers are to be concise and follow standard essay writing with a complete introduction and conclusion stating the main topic, the ideas to be explored in the body of the essay, and the recommendation. Students are encouraged to use graphics: pictures, graphs, etc. to illustrate their points.

SPECIFIC REQUIREMENTS FOR ASSIGNMENTS (STYLE MANUALS, FORMATTING)

- Use Chicago Manual of Style for citing and listing sources in your projects.
- You may use one-inch margins, but all papers must be double-spaced and at least size 10 font.

ACADEMIC INTEGRITY STATEMENT

Students are reminded that double submission of work for academic credit, fabrication, and plagiarism are serious academic offenses that can result in penalties up to and including failure on an assignment or failure in the course. According to the Indiana University Code of Student Rights, Responsibilities, and Conduct, they are defined as follows:

1. CHEATING

Cheating is considered to be an attempt to use or provide unauthorized assistance, materials, information, or study aids in any form and in any academic exercise or environment.

1. A student must not use external assistance on any "in-class" or "take-home" examination, unless the instructor specifically has authorized external assistance. This prohibition

includes, but is not limited to, the use of tutors, books, notes, calculators, computers, and wireless communication devices.

2. A student must not use another person as a substitute in the taking of an examination or quiz, nor allow other persons to conduct research or to prepare work, without advanced authorization from the instructor to whom the work is being submitted.

3. A student must not use materials from a commercial term paper company, files of papers prepared by other persons, or submit documents found on the Internet.

4. A student must not collaborate with other persons on a particular project and submit a copy of a written report that is represented explicitly or implicitly as the student's individual work.

5. A student must not use any unauthorized assistance in a laboratory, at a computer terminal, or on fieldwork.

6. A student must not steal examinations or other course materials, including but not limited to, physical copies and photographic or electronic images.

7. A student must not submit substantial portions of the same academic work for credit or honors more than once without permission of the instructor or program to whom he work is being submitted.

8. A student must not, without authorization, alter a grade or score in any way, nor alter answers on a returned exam or assignment for credit.

2. FABRICATION

A student must not falsify or invent any information or data in an academic exercise including, but not limited to, records or reports, laboratory results, and citation to the sources of information.

3. INTERFERENCE

A student must not steal, change, destroy, or impede another student's work, nor should the student unjustly attempt, through a bribe, a promise of favors or threats, to affect any student's grade or the evaluation of academic performance. Impeding another student's work includes, but is not limited to, the theft, defacement, or mutilation of resources so as to deprive others of the information they contain.

4. VIOLATION OF COURSE RULES

A student must not violate course rules established by a department, the course syllabus, verbal or written instructions, or the course materials that are rationally related to the content of the course or to the enhancement of the learning process in the course.

5. FACILITATING ACADEMIC DISHONESTY

A student must not intentionally or knowingly help or attempt to help another student to commit an act of academic misconduct, nor allow another student to use his or her work or resources to commit an act of misconduct.

PLAGIARISM

Plagiarism is defined as presenting someone else's work, including the work of other students, as one's own. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged, unless the information is common knowledge. What is considered "common knowledge" may differ from course to course.

A student must not adopt or reproduce ideas, opinions, theories, formulas, graphics, or pictures of another person without acknowledgment.

A student must give credit to the originality of others and acknowledge indebtedness whenever:

- Directly quoting another person's actual words, whether oral or written;
- Using another person's ideas, opinions, or theories and claiming them as one's own;
- Paraphrasing the words, ideas, opinions, or theories of others, whether oral or written;
- Borrowing facts, statistics, or illustrative material; or
- Offering materials assembled or collected by others in the form of projects or collections.

EXAM POLICIES (PROCTORING, OPEN BOOK, ETC.)

The course has verbal quizzes. Correct answers are rewarded with candy. Students will special dietary needs should notify the instructor at the beginning of the course.

ADA DISABILITY COMPLIANCE STATEMENT

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact IU Disability Services for Students.

LATE WORK / MISSED WORK / EXTRA CREDIT

- If you cannot deliver an assignment on the date it is due, it is your responsibility to discuss your situation with the instructor, preferably in advance.
- Some assignments will be discussed in class following the due date, late work will not be accepted for those assignments

- The instructor will entertain opportunities for extra credit, but only those available to all students. Please discuss your ideas with me.
- A grade of Incomplete (I) may be given in this course after discussion with the instructor.

SNOW DAYS / HOLIDAYS

The instructor reserves the right to make, with notice, adjustments to the calendar and content of this course syllabus.

DEADLINES / DUE DATES

- All assignments must be handed in by their due dates.
- If you cannot deliver an assignment or a project on the date it is due, it is your responsibility to discuss your situation with the instructor, preferably in advance.

RECOMMENDED TECHNOLOGY

We will use OnCourse as our learning management system. All assignments, online discussions, chats, and all course communications will be performed using OnCourse. If you have not used OnCourse before here is a video tutorial. Here is a written cheat sheet for using OnCourse.

CONNECTIONS TO CAMPUS RESOURCE CENTERS (WRITING, MATH, LIBRARY ASSISTANCE)

Students who are unsure of their writing skills are strongly urged to take advantage of Writing Tutorial Services, 855-6738. You will need to print your paper. You can make an appointment or stop by the Wells Library Information Commons Mon-Thurs 10 AM to 8 PM, and Fri 10 AM to 5 PM.

For undergraduate library services you can stop by the Wells Library Information Commons or visit the library web site for specific questions. The main library page has a chat feature that permits you to ask quick questions and get answers.

TECHNOLOGY ASSISTANCE (HELP DESK, IU WARE)

Technology Assistance is called UITS, University Information Technology Services. Their web site is very helpful. They have walk-up services in the Wells Library Information Commons.