

BOR 4302/INA 4302: Space Imagery and Security, Spring 2022

Course Description/Overview

From the Course Catalog: This capstone course discusses the use of space-based assets to support Homeland Security and Intelligence efforts. Included are limitations of the technologies, available commercial technologies, and discussion of the legal, moral, and political issues surrounding the use of these technologies in a democratic society. Students will design and present a project as part of this course. (Credit may not be earned for this course and Border Security 4302).

Additional information: As would be expected, the majority of information on specific capabilities of space based and aerial observation assets is either highly classified by associated governments, or closely held proprietary information of private corporations. Much of the material presented in this course comes from interpolation of signature analysis based on public information. We do our best with the information available to us. This course attempts to provide enough information to students so they can grasp the fundamental capabilities and limitations of signature collection assets, the political, legal, and moral ramifications of governments collecting this data, and the potential vulnerabilities of these assets and data to compromise.

Required materials (i.e. textbooks, software, etc.)

Technical Collection of Intelligence

Author: Clark , Robert M.

ISBN: 9781604265644

Copyright Year: 2011

Publisher: Congressional Quarterly Press

National Security Intelligence

Author: Johnson, Loch K.

ISBN: 9780745649390

or

Copyright Year: 2012

Publisher: Polity Press

National Security Intelligence

Author: Johnson, Loch K

ISBN: 9781509513055 (pb) or 9781509513048

Copyright Year: 2017

Publisher: Polity Press

Prerequisites

There are no prerequisites for this course, however, students are expected to have some background in cyber security to be able to succeed in this course.

Technical skills required for this course

As with all online courses, students must be able to operate a computer and have the necessary technical skills to navigate around a webpage. Additional technical skills are not a prerequisite for this course, however, your computer must meet certain minimum requirements to operate Blackboard - <https://help.blackboard.com/Learn/Student> .

Time spent on this course

The time needed for adequate study and understanding of the course material, as well as discussion posts and critical thinking for all exercises and papers, amounts to between six and ten hours per week. A number of videos are included in this course. Students should plan on watching videos and taking notes on the materials so they can better understand the processes by which space imagery functions. The time a student spends studying for the mid-term exam will vary depending upon the student's understanding and comprehension of the reading assignments and materials associated with the first 4 lessons.

Goals, Objectives, and Outcomes Course Goals

The material included in this course is intended to provide students with general knowledge of the capabilities and limitations of space based and aerial data collection assets. The controversy over pervasive surveillance of citizens, and targeting of people in other countries are a continuing problem that students will be able to address when they complete this course. Students will be able to collect open source information from space based and aerial assets and conduct an analysis of the imagery.

Course Objectives

Objectives focus on content and skills that are important within the course. Objectives can be thought of as inputs into the course.

Objective One: Critical thinking is key to conducting a signature analysis. This course builds critical thinking skills.

Objective Two: After the mid-term over the specifics of signatures, collection history, and capabilities, students will shift their focus to analysis and policies. Teaching the concept that technological development drives policy is a core objective of this course.

Objective Three: Being able to effectively gather data, analyze that data, and provide an appropriate technical and critical written analysis is a core objective of this course.

Objective Four: Being able to read, comprehend, and critically analyze the communications of others is essential in today's world. Therefore, participation in the discussion boards is an essential component of this course.

Learning Outcomes

When you finish this course, you should be able to:

Knowledge and comprehension: identify and recognize various space imagery technical devices and the signatures associated with their ability to collect signatures.

Application and analysis: demonstrate the ability to analyze signature collection capabilities and apply them to current issues.

Synthesis and evaluation: evaluate and critique the ideas of others based on your own synthesis of the presented materials.

Student learning outcomes will be assessed through a combination of examination, final project and active participation in the cohort discussions established through discussion board questions each week.

Method of Assessing Outcomes

Student learning outcomes will be assessed through a combination of examination, final project and active participation in cohort discussions on discussion board questions each week. Comprehension of technical components of space imagery will be assessed through a mid-term exam. A final project will provide the means to assess each student's overall grasp of the concepts presented during the course.

Grading Policies

Assignment	Percent of Grade	Due
Discussion Board	35%	See Course Schedule
Mid Term Exam	30%	See Course Schedule
Final Exam/Project	35%	See Course Schedule

Grades

Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale:

A = 90 – 100 %

B = 80 – 89 %

C = 70 – 79 %

D = 60 - 69 %

F = 59 % and below.

Final Exam/Project

This course does not require a final examination but does require a submitted project. This creative research project will be due per the Course Schedule in Week 8.

This Course Ends on Friday of Week 8.

Keep this in mind as we come to the last lessons.

Course Organization: Introduction, the history of utilizing space to collect signatures, remote sensing, and the electromagnetic spectrum.

Lesson 1: Introduction, the history of utilizing space to collect signatures, remote sensing and the electromagnetic spectrum.

Lesson 2: Film images, Radiometry, and Digital Imagery.

Lesson 3: Infrared, RADAR, and SAR Constellation Satellites collection platforms and capabilities.

Lesson 4: RF and non-EM signature collection.

Lesson 5: Cyber espionage, covert action, and the morality of individual choice versus national policy are considered. **Mid-Term Exam per COURSE SCHEDULE**

Lesson 6: Preventing abuse of all-encompassing imagery.

Lesson 7: Analyzing Imagery.

Lesson 8: Course wrap-up. **Final project due per COURSE SCHEDULE.**

*** The instructor reserves the right to modify the syllabus during the semester as needed. ***

Administration

Communication

Students are expected to participate regularly through the course discussion forum. Students may receive occasional emails from the course instructor and are expected to respond promptly. Asynchronous communication (i.e. face-to-face or "real-time" communication is not required for this course; however, your instructor is available for a phone conversation or face to face with prior arrangement). Please do NOT use Blackboard messenger as a means of communication.

Attendance

This is an online course and attendance is not taken. However, failure to participate or communicate on the part of a student will result in an appropriate reduction of your grade and possibly in your failure of this course. Students are expected to complete assignments and participate in the discussion boards by the scheduled dates.

Late Work

We have 7 ½ weeks for this course. There is insufficient time in a condensed semester for students to delay completion of assignments. Hence, late work will not be accepted. If your assignments are not submitted by the posted deadline, you will receive a zero for that assignment. [******If an emergency impacting your ability to complete an assignment arises, contact me as soon as possible.******]

Add/Drop dates

Information for schedule changes is contained here:

https://www.angelo.edu/services/registrars_office/schedule_changes.php

University Policies

Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website at www.angelo.edu/ADA. The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

[Dr. Dallas Swafford](#) Director of Student Disability Services

dallas.swafford@angelo.edu

325-942-2047

Map:Houston Harte University Center, 112

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

- Online: angelo.edu/incident-form
- Face to Face: Mayer Administration Building, Room 210
- Phone: 325-942-2022
- Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit: angelo.edu/title-ix.

General Policies Relating to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)
- [Angelo State University Catalog](#)

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See [ASU Operating Policy 10.11 Grading Procedures](#) for more information.

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See [ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day](#) for more information.

Student Conduct Policies

ACADEMIC INTEGRITY

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The Department of Security Studies and Criminal Justice adheres to the Statement of [Academic Integrity](#)

PLAGIARISM

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#) in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the [ASU Writing Center](#).

COPYRIGHT POLICY

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