BOR 4302/INA 4302: Space Imagery and Security

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	*National Security Intelligence*
Author: Johnson, Loch K.	Author: Johnson, Loch K
ISBN: 9780745649390 or 9781509513048	ISBN: 9781509513055 (pb) or
Copyright Year: 2012	Copyright Year: 2017
Publisher: Polity Press	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 written assignments 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 written assignments and active participation in the cohort discussions established through weekly discussion board questions. Additionally, comprehension of technical components of space imagery will be assessed through a mid-term exam. A writing assignment will provide the means to assess student grasp of the concepts of space imagery and the analysis of the data imagery provides.

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. Due dates for discussions and projects will change in Lesson 8.

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 as 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.*****]

Incompletes

From the ASU Catalog: The grade "I" is given when the student is unable to complete the course because of illness or personal misfortune. An "I" that is not removed before the end of the next long semester automatically becomes an "F". Students will be allowed one year to remove a grade of "I" before it automatically becomes an "F". To graduate from ASU, a student must complete all "I"'s. The University policy on grades of "Incomplete" is that the deficiency in performance must be addressed satisfactorily by the end of the next long (16 week) semester or the grade automatically becomes an "F". Grades of "Incomplete" will only be awarded to students who have demonstrated sufficient progress to earn the opportunity to complete the course outside of the normal course duration. The award of an "Incomplete" will only be made in rare circumstances, with the concurrence of the student and the professor on what specific tasks remain and when they are due for the grade to be changed to a higher grade. The determination of the need to award an "Incomplete" is entirely up to the professor's personal judgment.

Add/Drop dates

Information for schedule changes is contained here: **https://www.angelo.edu/services/registrars_office/schedule_changes.php**

University Policies

Academic Integrity

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding and complying with the University Academic Honor Code and the ASU Student Handbook.

Accommodations for Disability

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 Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by emailing studentservices@angelo.edu, or by contacting:

Office of Student Affairs
University Center, Suite 112
325-942-2047 Office 325-942-2211 FAX

Student absence for religious holidays
A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.

Title IX at Angelo State University:

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022

michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the *University Health Clinic and Counseling Center at 325-942-2173* or the *ASU Crisis Helpline at 325-486-6345.*

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

Required Use of Masks/Facial Coverings by Students in Class

As a member of the Texas Tech University System, Angelo State University has adopted the mandatory *Facial Covering Policy* to ensure a safe and healthy classroom experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with the university policy students in this class are required to wear a mask/facial covering before, during, and after class. Faculty members may also ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain safe distancing practices to the best of your ability. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible to make up any missed class content or work. Continued non-compliance with the Texas Tech University System Policy may result in disciplinary action through the Office of Student Conduct.