In order to access your course materials, you must agree to the following, by clicking the "Mark Reviewed" button below.

By checking the "Mark Reviewed" link below, you are indicating the following:

- You have read, understood, and will comply with the policies and procedures listed in the class syllabus, and that you have acquired the required textbook(s).
- You have read, understood, and will comply with class policies and procedures as specified in the online Student Handbook.
- You have read, understood, and will comply with computer and software requirements as specified in the Student Orientation Course.

**ISSA 6307 / BOR 6303: Cryptology**

**Course Description/Overview**

In this course, students will examine the use of codes and cyphers in support of the intelligence functions. This course will look at the history of intelligence support to the decision and policy-making process, and how their changes have driven changes in the cryptology field - up to and including the advances being seen today. This course also closely examines the critical role they play to maintain the secrecy of information, needs, and methods.

**Course Bibliography and Required Readings:**


Wrixon, Fred B. *Codes, ciphers, secrets and cryptic communication*. New York: Black Dog & Leventhal, 2005


**Goals, Objectives, and Outcomes**

Objectives: ISSA 6307 / BOR 6303 is designed for students to develop an understanding of and appreciation for the evolution of the role cryptology plays in intelligence support to the decision and policymaking process. As a result of completing this course, the student will be able to:

1. Demonstrate an ability to apply analytical thinking, critical analysis, creativity and problem solving to the wide range of intelligence issues through the successful completion of active, graded discussions, and written assignments.
2. Demonstrate a knowledge of the application of cryptology to the decision and policy-making process.
3. Demonstrate a knowledge of the history of cryptology.
4. Demonstrate a mastery of knowledge associated with ethics across the field of cryptology, through content of written communications.

**Grading Policies**

This course utilizes subjective grading to measure a student’s comprehension of the materials.

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percent of Grade</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussion Board</td>
<td>20%</td>
<td>Weekly (1-7). Initial posts are due by Friday 11:59PM (CST) and all discussions completed by 11:59 PM (CST) Sundays.</td>
</tr>
<tr>
<td>Midterm Exam</td>
<td>35%</td>
<td>Due not later than Sunday 11:59PM (CST) of Week 4.</td>
</tr>
</tbody>
</table>
Final Exam | 45% | Due not later than Thursday 11:59PM (CST) of Week 8.

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%
- F = 69% and below.

Grades will be based on your ability to organize the material, integrate relevant concepts and theories, cite your sources, and present them in essay form in discussion threads as well as mid-term and final assignments. You are expected to apply your own observations as necessary when demonstrating grasp of material. Essays will be turned in to the professor via the Blackboard Assignment system. Essays not submitted through Blackboard will not be graded. Students will not present their essay to their fellow students.

Students are expected to write original material in support of discussion and essay requirements associated with this class. Material submitted late will not be accepted.

Rubrics

Discussion forums and writing assignments will be graded using a standardized rubric. It is recommended that you be familiar with these grading criteria and keep them in mind as you complete the writing assignments. There are two rubrics. Click the link to download the PDF document:

- Discussion Rubric
- Writing Assignment Rubric

Course Learning Outcomes:

Lesson 1:

- Understand the foundational concepts behind cryptology, cryptanalysis and cryptography.
- Explain the role cryptology plays in the intelligence functions supporting policymakers.
- Describe the origins of US cryptographic support to decision and policymaking.

Lesson 2:

- Understand the different between originating and imported cryptology programs.
- Describe the importance of origins of intellectual property rights, in the origins of modern cryptology.
- Evaluate the importance of legal frameworks - or the lack thereof - in the advances or development in cryptology policies and programs in the interwar years.

Lesson 3:

- Explain the how cryptology policies and advances in cryptology shape wartime national security policies.
- Understand the importance that the intelligence function of subject matter expertise plays in the development of cryptology programs.
- Explain the role allies and cryptology partnerships plays in advances in cryptography and cryptanalysis.

Lesson 4:

- Critically assess and discuss the role cryptology played in the formation of international organizations in the early post-WWII era.
- Describe the major advances in technology today linked to post-WWII cryptology requirements.
- Explain the need for cooperation between academic institutions and government research organizations, with regards to advances in technology related to cryptology.

Lesson 5:

- Describe the current policy debate over encryption at rest.
- Evaluate the intelligence and commercial implications of current and emerging encryption standards.
- Provide a description of the debate over strong, independent cryptology in support of encryption at rest and in transit requirements.
Lesson 6:
- Describe the debate over cryptology policy considerations being made for law enforcement.
- Explain the inherent flaws in cryptology policies and practices through the use of deliberately designed backdoors.
- Explain the constitutional foundation for the "blue wall" separating law enforcement and the intelligence community in US cryptography policy.
- Comprehend the role played by public / private partnership in developing and implementing standards that include cryptography, as a means of comprehensively defending elements of critical infrastructure.

Lesson 7:
- Understand of the role cryptology plays in support of other intelligence operations and disciplines
- Explain the role cryptanalysis plays in countering foreign intelligence service operations
- Describe the role CI plays in shaping cryptological policy development

Lesson 8:
- Understand significant technological milestones for cryptology in the near, mid and longterm
- Understand significant challenges the intelligence community faces in the supporting policy making process, with continued technological advances in cryptology
- Describe the debate in formulating cryptological-relates policies, inside and out of the government.

Administration

Announcements:
Anticipate an announcement every week, at the beginning of the week, posted here in Blackboard and disseminated through student school email accounts. It will contain refinements to this syllabus and additional guidance to weekly readings, assignments, and the course. You are required to read course announcements, as they will contain updates to and refinements for this course.

These are also where I will announce the discussion question for the week. While there may be several discussion questions listed per week in the discussion area, I will include in the weekly announcement the details regarding which one we as a class will be addressing that week. In mastering the material, a student should feel comfortable addressing any and all of these questions, but as a class, we will focus in on and discuss just one, and do it in depth together.

Some thoughts on late work:
Don’t be late. In the professional world, late is often too late. In the intelligence profession and in related fields, being late with written assessments - even with the right assessment or with brilliant work - oftentimes means arriving after the LTIOV - latest time information is of value. However, sometimes lateness is unavoidable. If you know you will be late, let me know ahead of time. In these instances, some accommodation may be possible.

Primary posts are due by 1159 CST on Fridays, and response postings are due by 1159 CST on Sunday, after which time no participation is possible.

Add/Drop dates
See Schedule Changes for procedural information

See Academic Calendar for specific dates

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.

Disability Support 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 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.