Course Outline

1. Document Information

Degree Program	Computer Science
Course Number	CS 525
Course Title	Security Issues in Cloud Computing
Semester Hours	3
Course Coordinator	Abdullah Aydeger
Revision Term	Fall 2020
Latest Revision	Spring 2021

2. Catalog Description

This course offers a survey of security and privacy issues in Cloud Computing systems along with an overview of current best practices and available technologies. Threat model as well as practical applications of secure Cloud Computing are explored.

3. Textbooks

- Winkler, Vic., 2011. Securing the Cloud, Syngress pub.

4. References

- Vacca, J., 2016. Cloud Computing Security: Foundations and Challenges, CRC press.
- The NIST Definition of Cloud Computing, NIST Special Publication 800-145.

5. Course Learning Outcomes

- Obtain the state-of-the-art knowledge on network forensic methods including legal concerns.
- Obtain basic skills in wired and wireless digital data transfer and analysis of digital media

6. Assessment of the Contribution to Student Outcomes

Outcome	1	2	3	4	5	6	7
Assessed	X	X	X	X	X	X	X

7. Prerequisites by Topic

CS 410 or graduate standing.

8. Major Topics Covered in the Course

1. Introduction to cloud and network computing (10 Lectures)
2. Securing the Cloud Architecture (5 Lectures)
3. Overlay Networks (5 Lectures)
4. Cloud attacks and Mitigation Strategies (5 Lectures)
5. Lightweight Virtualization and Data Sharing (5 Lectures)
6. Trust and privacy in the Cloud (5 Lectures)
7. Case studies and Lessons generalized (5 Lectures)