

Syllabus

Course Number: CS433

Course Title: Computer Systems Security

Course Description

Introduces the concept of security in computing. Topics include cryptography, program security, operating systems protection, database security, and network security. Students will explore current security models, internal and external security threats, privacy issues and security laws and regulations.

Prerequisite Courses

CS390 Principles of Programming Languages
and
CS324 Algorithms & Analysis (or CS449 Algorithms & Complexity)

Course Overview

Computer system security involves the protection of all facets of a computer system: the hardware that defines the computer system, the software that operates within the computer system, and the information that is stored and processed. Various types of attacks can be used to capture information, destroy information, deny access to information, etc. Access controls can be used to deny unauthorized access to the physical environment, the devices, the data, the communication links, the application software, and the operating system. This course will introduce computer security concepts and present ways to protect a computer system.

Course Outcomes

Upon completion of this course, learners should be able to:

1. Discuss the role of information in the world today along with the importance of protecting that information from unauthorized disclosure.
2. Explain the basic concepts involved with cryptography along with its contribution to the authentication and encryption schemes used to secure computer systems and resources.
3. Discuss the protection of computer software in both an applications program and an operating systems environment including the identification and elimination of virus software.
4. Describe methods used to secure wired and wireless networks from both the many well-known and documented attacks of today as well as those attacks yet to be developed.

5. Describe the importance of the development of a security policy for the computer environments of today along with the contents of that security policy.
6. Discuss the legal and ethical issues involved with securing computers systems, networks, and information.

Course Materials:

Required Texts:

Pfleeger, Charles P., & Pfleeger, Shari Lawrence (2007). *Security in Computing* (4th edition). Boston, MA: Prentice Hall Pearson Education. ISBN: 0-13-239077-9

Technology Tools:

1. A PC-compatible computer system running a Windows operating system.
2. Microsoft Office or similar suite
3. PowerPoint® (part of Microsoft Office) or the free PowerPoint Viewer

As with most of Regis learning activities, using various software applications to accomplish assignments requires students to exercise a great deal of responsibility for learning how to successfully operate the software applications. There are, however, many quality books on the market that support novice users if you need them.

Pre-Assignment:

- **Read** the Chapter 1 in your text.
- Be prepared to **ask questions** on unclear areas and to **respond to questions** about information in the assigned reading.

Online Format: Sign on to worldclass.regis.edu and become familiar with the course navigation of the Web Curriculum. Complete assignments above.

Classroom-based Format: Complete assignments above by the first night of class.

Course Assignments and Activities:

	Topics	Readings	Activities Assignments and Associated Points*
1	<ul style="list-style-type: none"> Overview of Computer Security 	Chapter 1	Participation in Discussions – 15% for entire course Assignment #1 – 8% Week 1 Quiz – 2%
2	<ul style="list-style-type: none"> Encryption and Cryptography 	Chapter 2	Participation in Discussions Week 2 Quiz – 2%
3	<ul style="list-style-type: none"> Program Security and Viruses 	Chapter 3	Participation in Discussions Assignment #2 – 12.5% Week 3 Quiz – 2%
4	<ul style="list-style-type: none"> Operating System Security 	Chapters 4 & 5	Participation in Discussions Midterm Exam – 10%
5	<ul style="list-style-type: none"> Database Security 	Chapter 6	Participation in Discussions Assignment #3 – 12.5% Week 5 Quiz – 2%
6	<ul style="list-style-type: none"> Network Security 	Chapter 7	Participation in Discussions Week 6 Quiz – 2%
7	<ul style="list-style-type: none"> Security Administration 	Chapters 8 & 9	Participation in Discussions Assignment #4 – 20% Week 7 Quiz – 2%
8	<ul style="list-style-type: none"> Legal and Ethical Issues 	Chapters 10 & 11	Participation in Discussions Final Exam – 10%
		Total	100%

***Note to Classroom sections only:** Exact dates for reading assignments and homework/quiz assignments may be one week earlier or later than indicated in the above grid. Your instructor's syllabus, handed out the first night of class, will indicate any changes.

Student Evaluation Summary

Assignment	Value (percent of overall course grade)
Quizzes (6 at 2% each)	12%
Homework 1	8 %
Homework 2 & 3 (12.5% each)	25%
Homework 4	20%
Midterm Exam	10%
Final Exam	10 %
Participation in Discussions Classroom: And other classroom activities	<u>15 %</u>
Course Total	100 %

Course Policies and Procedures:

Quizzes/Homework's

There will be 6 quizzes and 4 homework assignments.

Quizzes will be timed. Quiz questions are cumulative. They will be taken from reading assignments and class presentations through the night before the quiz/homework.

Research papers that should follow the APA writing format.

CC&IS Grading Scale

Letter Grade	Percentage	Grade Point
A	93 to 100	4.00
A–	90 to less than 93	3.67
B+	87 to less than 90	3.33
B	83 to less than 87	3.00
B–	80 to less than 83	2.67
C+	77 to less than 80	2.33
C	73 to less than 77	2.00
C–	70 to less than 73	1.67
D+	67 to less than 70	1.33
D	63 to less than 67	1.00
D-	60 to less than 63	.67
F	Less than 60	0

Additional information about grading can be found in the latest edition of the University Catalog, available at

<http://www.regis.edu/Academics/Course%20Catalog.aspx>.

CC&IS Policies and Procedures

Each of the following CC&IS Policies & Procedures is incorporated here by reference. Students are expected to review this information each term, and agree to the policies and procedures as identified here and specified in the latest edition of the University Catalog, available at <http://www.regis.edu/Academics/Course%20Catalog.aspx> or at the link provided.

- The CC&IS Academic Integrity Policy.
- The Student Honor Code and Student Standards of Conduct.
- Incomplete Grade Policy, Pass / No Pass Grades, Grade Reports.
- The Information Privacy policy and FERPA. For more information regarding FERPA, visit the [U.S. Department of Education](http://www.ed.gov).
- The HIPAA policies for protected health information. The complete Regis University HIPAA Privacy & Security policy can be found here: <http://www.regis.edu/About-Regis-University/University-Offices-and-Services/Auxiliary-Business/HIPAA.aspx>.
- The Human Subjects Institutional Review Board (IRB) procedures. More information about the IRB and its processes can be found here: <http://regis.edu/Academics/Academic-Grants/Proposals/Regis-Information/IRB.aspx>.

The CC&IS Policies & Procedures Syllabus Addendum summarizes additional important policies including, Diversity, Equal Access, Disability Services, and Attendance & Participation that apply to every course offered by the College of Computer & Information Sciences at Regis University.

A copy of the CC&IS Policies & Procedures Syllabus Addendum can be found here: <https://in2.regis.edu/sites/ccis/policies/Repository/CCIS%20Syllabus%20Addendum.docx>.