

**MIT 346 Cyber Defense and Counter Measures**

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**Web resources:** [**https://eagleweb.reinhardt.edu/ics/Campus\_Life/Campus\_Groups/Math**](https://eagleweb.reinhardt.edu/ics/Campus_Life/Campus_Groups/Math)

**Office Hours:**

|  |  |  |
| --- | --- | --- |
| Days | Courses | Office |
| MW | 2:20 – 3:35 MAT 330 Discrete Math | 12:30 – 2:00 |
| TR | 9:30 – 10:45 MIT 245 Intro Networking  11:00 – 1:25 MIT 346 Cyber Defense | 8:30 – 9:30  1:30 – 3:00 |
| F |  | By appointment |
|  |  |  |

# Learning Management System and Textbook: Hands-On Ethical Hacking and Network Defense, 4th Edition, Wilson, Simpson, Antill, (2021) ISBN: 9780357509753

# COURSE COVERAGE:  Chapter 1-7

# II. CATALOG DESCRIPTION: This course focuses on developing a secure information technology network infrastructure and its supporting structures, including policies and procedures. Typically, organizations take a common approach to building a secure gateway into the trusted network. But there are always variables specific to each network. That said, as the network security industry matures, there are also common, or best, practices being discovered and followed within this area of study. In this course, you will identify the components and best practices needed to design a secure network.

# Prerequisite: MAT 103 and MIT 336.

# III. CONCEPTUAL FRAMEWORK:

# The Mathematics Department at Reinhardt University believes that all students should have an exposure to the ideas of science and the scientific method. This includes exposure to laboratory procedures, familiarity with some of the vocabulary of science and ability to read scientific articles in the newspaper or in popular magazines.

# The Mathematics Department at Reinhardt University believes that all students should be familiar with the systematic development of science through history. This includes an understanding of the effects that science has had on history and that history has had on scientists.

**The Mathematics Department at Reinhardt University wishes to convey to students that science is a continuing endeavor that will not ever be finished.** This includes an introduction to the interaction of theory and observation.

**IV**. **COURSE RELATIONSHIP TO CONCEPTUAL FRAMEWORK**: This is a hybrid class. Half of the class time is replaced with online activities. A hybrid course includes both regularly scheduled on-site classroom meetings, and significant online out-of-classroom components, that replace regularly scheduled class meeting time. This course is delivered both in person and online via Canvas, where you will interact with your

classmates and your instructor, as well as Testout, which is the lab.

Class time is for:

1) Explaining and practicing difficult concepts

2) Expanding on the textbook to include newer and more advanced information

3) Getting a overview of major concepts, minor points, and how they fit together

4) Asking and answering questions

5) Taking higher stakes tests

Online activities are for:

1) Pre-lecture reading so the students know which topics are most difficult

2) Personalized Study Plans that help students’ structure and prioritize study time

3) Videos that provide more example of key concepts

4) Labs that will help students practice the learned concepts

**V. Mathematics Program Objectives**: As a result of completing a course within the Mathematics Program at Reinhardt University a student should be able

**MPO1** to bear on the solution of problems by using reasoning, logic and evidence, and by bringing knowledge from a wide range of mathematical areas;

**MPO2** to use effective written and oral expression of mathematical concepts in the creation of a mathematical argument by recognizing a wide range of mathematical terms and vocabulary;

**MPO3** to understand the development of an axiomatic system;

**MPO4** to understand and to apply mathematical research methodologies by using libraries, informational technologies, computer programming and numerical methods.

**MPO5** Apply ethical, legal, and policy issues to Information Technology

**MPO6** Create IT solutions to solve organizational problems.

**VI. MATHEMATICS PROGRAM STUDENT LEARNING OUTCOMES:** Taking this course, students will be able to

**SLO1** Solve a word problem by applying the appropriate mathematical setup, obtaining the mathematical solution, and interpreting this solution in the context.

**SLO2** Solve a theoretical problem by identifying the appropriate mathematical context, interpreting the question and the nature of the solution, and checking that the solution is correct.

**SLO3** Complete a proof or produce a mathematical object that satisfies specific properties.

**SLO4** Solve a problem by consulting various resources, applying appropriate technological tools, and using adequate approximations.

**SLO5** Analyze how information technology affects ethical and legal issues.

**SLO6** Synthesize appropriate solutions to organizations' problems.

**VII. ALIGNMENT TO REINHARDT UNIVERSITY SLO’s:**

|  |  |  |
| --- | --- | --- |
| **Math PO** | **Math SLO** | **RU SLO** |
| 1 | 1 | 1, 2, 4 |
| 2 | 2 | 1-4 |
| 3 | 3 | 1-4 |
| 4 | 4 | 1-4 |
| 5 | 5 | 1-4, 7 |
| 6 | 6 | 1-4 |

**VIII. COURSE OBJECTIVES:**

 As a result of taking this course the student should:

1. Develop physical security recommendations for an organization.
2. Develop recommendations for how biometrics can be used for authentication.
3. Develop recommendations for implementation of a security awareness program for an organization.
4. Review the security life cycle and configuration management.
5. Identify the role of privacy and other regulations in organizations.

**IX. POLICES:**

**Cell Phone Policy:** Please turn off or turn all cellular phones on silent. Do not use them in class without prior permission by your instructor.

**Attendance:** Students are expected to attend each session. If you miss a class, you are responsible for finding out what was covered and getting the work done.   
**Late Policy:**

|  |  |
| --- | --- |
| Days Late | Percent Penalty |
| 1-3 | 10% |
| 4-7 | 20% |
| 8-14 | 30% |
| 15 or more | 50% |

**Academic Dishonesty:** The Reinhardt University academic dishonesty policy will be followed. You will earn a zero for the assignment or exam in which you are found cheating.

**Quality of Student Work**: Use of proper grammar, correct spelling, and writing principles are expected in all work. Full credit will not be granted for work that contains grammar or spelling errors.   
**Expectations**: You are expected to read and study our textbook. Reading a section before it is covered in class is a great habit!

**Communications:** All written communications will be through Reinhardt email.

**X. GRADE DETERMINATION:** Your grade will be the one reported on EagleWeb. Your grade will be based on four midterm exams, a final, and homework, with the following weights:

Exams 30%

Case Projects 40%

Labs 30%

Total 100%

**Homework/ Labs:** One or two virtual labs are assigned with each chapter.

**Exams:** One for each chapter

**Case Projects**: One or two written essays (200 word minimum) for each chapter.

**XI. GRADING SCALE:** A=[90, ∞), B=[80, 90), C=[70, 80), D=[60,70), F=[0, 60)

**XII. CSS:** The Center for Student Success (CSS) is located at the lower floor of Lawson, room 035. **CSS offers free peer and faculty tutoring for all subjects**. For appointments, go to Reinhardt webpage and click Center for Student Success.

**XIII. ADA and ASO:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a documented disability requiring an accommodation, please contact the Academic Support Office (ASO).

Reinhardt University is committed to providing reasonable accommodations for all persons with disabilities. Therefore, if you are seeking classroom accommodations under the Americans with Disabilities Act, you are required to register with the Academic Support Office (ASO). ASO is located in the basement of Lawson Building. Phone is 7707205567. To receive academic accommodations for this class, please obtain the proper ASO letters/forms. Students with disabilities needing accommodations must contact the **A**cademic **S**upport **O**ffice prior to contacting me. The ASO will then inform me about your (free of charge) arrangements.

**XV. PROJECTED COURSE OUTLINE** (subject to change at instructor’s discretion)

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| --- | --- | --- |
| **Week**/date | **Class Coverage** | **Special events** |
| Week 1 | Course Intro, Chapter 1 |  |
| Week 2 | Chapter 1 |  |
| Week 3 | Chapter 2 |  |
| Week 4 | Chapter 3 |  |
| Week 5 | Chapter 4 |  |
| Week 6 | Chapter 5 |  |
| Week 7 | Chapter 6 |  |
| Week 8 | Chapter 7 |  |
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