

**MIT 245 Introduction to Network Technology**

**Instructor: Kelley Roberts E-mail: kjr@reinhardt.edu**

**Office: Tarpley 316**

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

# Learning Management System and Textbook: Kurose, Ross. *Computer Networking: A Top-Down Approach, 8th edition*. Pearson. ISBN: 978-0-13-668155-7

# I. COURSE COVERAGE:  Chapter 1-7

# II. CATALOG DESCRIPTION: Corporations, small businesses, and even individuals rely upon robust communication networks that secure local resources while connecting into worldwide infrastructure. This course provides students with the opportunity to develop and administrate a small business network through hands-on lab exercises. They examine physical and logical local network components as well as protocols and connections for internet services and applications. Hands-on labs exercises provide experience with network configuration and settings.

# 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 course will be taught using applied problems, exercises, a graphing calculator and software for labs.

**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. Differentiate various network topologies, models, and standards
2. Configure physical and logical network components
3. Describe and configure common network protocols and applications
4. Explain the need for network security and configure security features
5. Design a small business network
6. Recognize the importance of professional certifications

**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. Messages sent from personal email accounts will not be read or answered. Use the following schema for the subject line:

CourseNo\_MessageTopic\_LastName

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

Knowledge Checks 30%

Exams 30%

Final Exam 10%

Wireshark Labs 30%

Total 100%

**Homework:** Knowledge Checks and Wireshark Labs are considered work to do outside of class. These will take a significant about of time to complete. Any documents turned in are expected to have a header and to be named correctly according to the following: CourseNo\_AssignmentName\_LastName

**Exams:** No make-up exam will be given. *For University related absences on a test day*, it is possible to schedule an *earlier date for the test*: **it is student's responsibility to make arrangements at least a week before the scheduled absence**.

**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.

**XIV. OFFICE HOURS AND SCHEDULE:**

|  |  |  |
| --- | --- | --- |
| 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 |
|  |  |  |

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

|  |  |  |
| --- | --- | --- |
| **Week** | **Computer Networking: A Top Down Approach** | **Wireshark Labs** |
| Week 1 | Chapter 1: Computer Networks and the Internet |  |
| Week 2 | Chapter 1: Computer Networks and the Internet | Wireshark Intro |
| Week 3 | Chapter 2: Application Layer | Wireshark HTTP |
| Week 4 | Chapter 2: Application Layer  Exam 1 | Wireshark DNS |
| Week 5 | Chapter 3: Transport Layer | Wireshark UDP |
| Week 6 | Chapter 3: Transport Layer | Wireshark TCP |
| Week 7 | Chapter 4: The Network Layer – Data Plane | Wireshark IP |
| Week 8 | Chapter 4: The Network Layer – Data Plane  Exam 2 | Wireshark DHCP |
| Week 9 | Chapter 5: The Network Layer – Control Plane | Wireshark NAT |
| Week 10 | Chapter 5: The Network Layer – Control Plane | Wireshark ICMP |
| Week 11 | Chapter 6: The Link Layer and LANs |  |
| Week 12 | Chapter 6: The Link Layer and LANs | Wireshark Ethernet-ARP |
| Week 13 | Exam 3 |  |
| Week 14 | Chapter 7: Wireless and Mobile Networks |  |
| Week 15 | Chapter 7: Wireless and Mobile Networks | Wireshark 802.11 WiFi |
| Week 16 | Final Exam |  |