

**Course Policy Statement**

**Course Coordinator:** LCDR James Shey  
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Schedule: **SY310 Section 1121:** MWF1,T12 (RI-054)  
**SY488A Section 2141:** MWF2 R12 (RI-054)

**I. Prerequisites.** Network Ops and Analysis (SY283N) or SY205, Calculus II (SM223) & Physics II (SP212)

**II. Textbook.** Stallings, Data & Computer Communications, 10<sup>th</sup> Ed.  
Various Whitepapers (See course website)

**III. Course Overview.** An introduction to wired and wireless communications and associated vulnerabilities at the physical, data link and network layers. The theme of this course is for the student to understand the entire communication cycle as it pertains to wired and wireless communications systems with a focus on mobile communication. Beginning with electromagnetic spectrum and the fundamentals that govern its use, each student will learn the unique implications of operating in a wireless environment. These fundamentals will be applied to understanding cellular technologies and Wi-Fi and weaknesses in the underlying protocols. Additionally, the student will understand electronic engineering and tactics in support of spectrum dominance and retaining strategic advantage to open and closed networks.

**IV. Course Objective.** This course contributes to the following Cyber Operations major student outcomes (c): *An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.*

1. Describe, qualitatively and quantitatively, how underlying electromagnetic spectrum technology is implemented in wireless communication networks and electronic warfare systems.
2. Evaluate the security and robustness of communications systems by determining which characteristics allow a system to transmit sensitive information to an intended receiver across a noisy or vulnerable channel.
3. Understand how data is processed and transmitted via mobile and cellular technologies to include:
  - a. Overview of smart phone technologies
  - b. Wireless technologies
  - c. Infrastructure components
  - d. Mobile protocols
  - e. Mobile logical channel descriptions
  - f. Mobile registration procedures
  - g. Mobile identifiers
  - h. Mobile and Location-based Services

**V. Course Grade.** Overall course grades will be computed according to the following assignment weightings. Section instructors reserve the right to raise or lower a grade based on your overall performance.

	<b>6-Week Grade</b>	<b>12-Week Grade</b>	<b>Final</b>
Homework	10 %	20%	15%
Lab Exercises	50%	30%	20 %
Quizzes	15%	10%	5 %
Midterm Exam		40%	25 %
Group Project			10 %
Final Exam			25 %

**VI. Extra Instruction.** Use the link in my email signature to set up a time. If you are in doubt, talk to me and we can work to get you help earlier rather than falling behind.

**VII. Reading.** All reading assignments must be completed **prior** to the class for which they are assigned and will be fair game for testing.

**VIII. Work.** All submitted work must be neat, worked in pencil, and clearly labeled with your name and section number at the top of each page. Staple multiple sheets together. Show all steps and units, and box your answers.

**IX. Homework.** Completing the homework is essential to understanding the concepts in this course and will prove vital to your successful performance on quizzes and exams. Homework consists of reading and problem assignment. As always, reading the text and course handouts is an integral part of the homework. You are encouraged to seek help from any source; however, your submitted work must be your own and not copied from another student's work. Homework will be assigned on Thursday and will be due at the beginning of class on Wednesday. **Late homework is not accepted and it will receive no credit. The lowest homework grade will be dropped.** If you have to miss class (e.g., for an MO or Excusal) you still need to ensure your homework is submitted on time.

**X. Exams & Quizzes.** A midterm exam and a final exam will be given. Quizzes and exams are normally closed book. All work on exams and quizzes shall be your own, and must be in accordance with USNAINST 153.53 series (Policies Concerning Graded Academic Work).

If you cannot make an exam for any reason, it is your responsibility to inform your instructor as far in advance as possible. In accordance with the Commandant's Table of Priorities (priority d), elective surgery (such as PRK/LASIK) is NOT a valid excuse to miss a scheduled exam. If you find yourself with a PRK appointment(s) that would impact your ability to take the 6-week, 12-week or final exam, you should reschedule that appointment. Unexcused absences from scheduled examinations will be considered an egregious offense similar to missing ship's movement. If you are suffering from an illness or injury, for example a concussion, which impacts your ability to perform well during a scheduled examination, inform your instructor as early as possible so that a makeup examination may be scheduled.

Quizzes will be given randomly throughout the term. Quizzes will be closed book, but you will be allowed to use a note sheet that meets the requirements of the allowed note sheet for the tests.

**One single-sided, handwritten 8 1/2" by 11" note sheet** may be used for the first midterm and **two-sided for the handwritten 8 1/2" by 11" note sheet** may be used for the final exam. These note sheets will be collected by your instructor and returned after the exams, except the final.

**XI. Laboratory Exercises.** The purpose of laboratory exercises is to reinforce class material. Sometimes students will work independently, and sometimes with a partner or as a group. In any case, all students are individually required to know how to perform the lab. Unless otherwise directed, the final write-up of the lab report is an extension of your understanding of the assignment, and will be concise and complete. Laboratory exercises must be read and have any pre-calculations completed before class. I will evaluate the laboratory exercises based on their completeness, accuracy, and conclusions drawn.

**XII. Missing Class.** If you are going to miss class due to a *non-emergency* (see the Commandant's Table of Priorities), **any work due during your absence must be turned in before the absence in order to receive credit.** If you will miss an exam, notify myself at least two weeks in advance to arrange a makeup. Note that athletic trips, ECA trips, and elective surgery (PRK) are some fairly common non-emergencies. Makeup quizzes are not given; those missed due to an invalid absence receive a grade of zero; those missed due to a valid absence have no effect on the grade.

**XIII. Technology.** Your issued laptop is required for each class. Laptops will solely be used for coursework as directed by your instructor. Calculators may be authorized for class, homework, and exams. In the event of a calculator failure, manual calculation will be required. Sharing of calculators will not be permitted during examinations. Cellphones and

other mobile/tablet technology is not authorized, unless pre-approved by the section instructor. **Laptop lids will remain closed during the lecture portion of each class** unless otherwise directed by myself.

**XIV. Plagiarism, collaboration & documentation.** Plagiarism is the act of presenting someone else's work or ideas as your own. Examples include (but are not limited to) copying homework from a colleague or from a solution manual, copying computer code, copying text or figures from the Internet, or using another's data in a lab report. It is your responsibility to use proper documentation to always give credit where it is due.

Collaboration on homework and labs can enhance your learning; however, *duplication is not authorized* nor does it help you learn the course material! You may exchange ideas and methods of solving problems, but the numbers, equations, calculations, and finger-to-keyboard effort must be your own. If you do collaborate on an assignment, you must identify the individual(s) with whom you worked *as well as the extent of their assistance* on the top front of the assignment. Under no circumstances is it acceptable to turn in someone else's work (homework, lab, code) as your own

You should include citations for all figures or ideas taken from other sources, including the Internet. Citations to material from the Internet should include the URL and access date. If copying text verbatim, the text should be set apart with quotation marks. In technical writing, paraphrasing is preferred. Paraphrasing is presenting the ideas of the referenced text in your own words. It is not copying the text with a few words changed. Plagiarism is a dishonorable act. It diminishes both the perpetrator and the institution. Err on the side of too much documentation, and if you have any questions, ask your instructor

**As a reminder, the professor reserves the right to adjust your final grade based upon your overall performance.**