

Course Policies and Information

Objective	This course introduces students to the various ways in which radio and cabled signals are modulated to carry audio, video, and/or digital information from one location to another and how the same signals are demodulated, especially in the presence of noise. Closely related topics such as radio wave propagation, signal fading, multipath effects, and sources of noise and interference will also be covered. This subject is central to understanding the basic operation of cell phones, wireless modems, cable television systems, and all of the other radio/wireless devices that are intertwined with our modern lives.	
Textbook	B. P. Lathi and Zhi Ding, <i>Modern Digital and Analog Communication Systems</i> , 4th ed., Oxford University Press, 2009. ISBN 9780195331455	
Recommended Text	Hwei P. Hsu, <i>Schaum's Outlines: Analog and Digital Communications</i> , 2nd ed., McGraw-Hill, 2002. ISBN 9780071402286	
Web Site	http://www.facstaff.bucknell.edu/dkelley/elec470	
Corequisite	ELEC 320 or its equivalent or permission of the instructor	
Instructor	Prof. David Kelley, Breakiron 368, 570-577-1313, dkelley@bucknell.edu ; office hours TBA	
Communication	Check your e-mail and the course web page at least once per day . Most announcements, assignments, study aids, and other course materials will be distributed via the web site or Moodle site. E-mail will be used occasionally to distribute time-sensitive announcements. You are responsible for knowing and adhering to any policies posted at the web site.	
Academic Responsibility	You are expected to comply fully with the university's academic responsibility policies. Copying solutions, looking over a classmate's completed solutions, and other forms of plagiarism are not acceptable. I expect all submitted problem solutions to be your own work. Team exercises should be your group's own work. General discussion of solution techniques is okay, but sharing step-by-step instructions for solving a problem, sharing computer files, and direct copying are not. Refer to the "Academic Responsibility at Bucknell" web site (www.bucknell.edu/x1324.xml) or see me if this is not clear.	
Bucknell University Honor Code	As a student and citizen of the Bucknell University community: <ol style="list-style-type: none"> 1. I will not lie, cheat, or steal in my academic endeavors. 2. I will forthrightly oppose each and every instance of academic dishonesty. 3. I will let my conscience guide my decision to communicate directly with any person or persons I believe to have been dishonest in academic work. 4. I will let my conscience guide my decision on reporting breaches of academic integrity to the appropriate faculty or deans. 	
Grading Policy	Your final course grade will be computed as shown below, although your weighted exam average must be greater than 60 out of 100 points in order for you to pass the course. Significant extra credit opportunities are not likely to be provided. Exam dates will be posted at the course web site.	
	Special Lecture(s)	1% Incorporated into Professional Conduct if not needed
	Professional Conduct	4%
	Homework	15% Weighted equally; lowest score dropped
	Short projects	20%
	Two Exams	25% ea. Two highest exam scores
	One exam	10% Lowest exam score
	Students taking the graduate version of the course (ELEC 670) must complete three additional individual projects. More information will be provided to those students.	

Exam scores will not be discussed until a 24-hour “cooling off” period has passed, unless points have been added incorrectly to obtain an overall score. An absolute scale with the following distribution will be used to determine your final course grade.

93-100 A	87-89.9 B+	77-79.9 C+	60-69.9 D
90-92.9 A-	83-86.9 B	73-76.9 C	< 60 F
	80-82.9 B-	70-72.9 C-	

Grading Rubric

The following rubric will be followed to score most individual exam problems and could also be used to score homework problems. The first three columns apply to problems with total point values of 20, 15, and 10, respectively. For problems with other total point values, scores will be scaled appropriately (rounded to the nearest whole number). Some problems could be scored using a different rubric or method. Multi-part homework problems scored using this rubric will most likely be given a composite score; individual problem parts will not be scored independently.

20	15	10	Perfect or nearly perfect solution.
18	14	9	Minor math error and/or unit not included in a numerical final answer.
15	11	7	Concept essentially understood, but solution contains one or two procedural or factual errors; concept mostly but not completely understood.
10	8	5	Concept mostly understood, but solution contains several procedural or factual errors; concept only partially understood
5	4	3	Solution contains a few steps in the right direction but is essentially incorrect.
2	2	1	One or two relevant facts (such as equations) or diagrams are presented, but the solution is essentially incorrect.

Conflicts, Special Accommodations and Lateness Policies

If you know that you will not be able to complete an assignment by its deadline or take an exam at its scheduled time, you must notify the instructor **at least 48 hours in advance** in order to avoid an automatic **5% grade penalty** on the assignment, unless extenuating circumstances apply. Official university commitments such as recitals, field trips, and athletic competitions will normally be accommodated, as will job interviews and extraordinary personal opportunities. However, in accordance with university policy, personal travel plans under your control will not be accommodated.

If you miss an exam, deadline, or other activity due to illness, you must contact me or Judy Harris immediately, preferably before class time, and then visit Student Health Services or other health provider for an evaluation. If a physician confirms the seriousness of your illness, your absence and/or missed deadline will be excused. In the case of an exam, a make-up opportunity will be arranged.

Unexcused absences or missed deadlines (e.g., due to oversleeping) will be handled on a case-by-case basis, usually in consultation with the Associate Dean. **If you miss all or part of an exam, you must notify me or Judy Harris as soon as possible.** The mostly likely outcome is that the missed exam will be the one that is given the least weight. If you arrive late to an exam, you must complete it in the remaining allotted time.

A 20% grade penalty will be imposed for homework submitted up to 24 hours after the deadline and a 50% penalty 24-48 hours after the deadline. No credit will be given for homework submitted after 48 hours. No homework will be accepted, regardless of when it is submitted, after the solutions have been posted; this supersedes the partial credit allowances for lateness. If you forget to bring homework to class, it will be accepted without penalty if it is submitted as soon as possible without missing other classes or labs. Other exceptions will be made only in the most extreme circumstances.

Additional policies might be posted at the course web site. You are responsible for knowing and adhering to any posted policies.

If you need to request a special accommodation due to a medical condition, please contact the Associate Dean as soon as possible. If you need or would like to discuss accommodations for a documented or suspected learning disability, please contact the Office of Accessibility Resources.

Homework Policy Homework must be submitted by the indicated deadline. Place your name, the course number (ELEC 470 or 670), the homework number, and the page number at the top of each page, and staple all pages together. Where appropriate, clearly mark your answers by enclosing them in boxes. Use only one side of the paper, and trim the fringe pieces if you use paper torn from a spiral notebook. Lack of compliance with one or more of these requirements could result in a grade penalty. Sloppy or unreadable homework is unacceptable and could result in a grade of zero for that assignment. A subset of the problems might be selected for grading if the assignment is especially long. Assignments will be posted at the course web site, and solutions will be posted at the course Moodle site.

Professional Conduct Everyone in the classroom must act in a professional manner. Distractions that prevent your classmates from concentrating on instructional activities will not be tolerated. Electronic devices other than non-wireless calculators may not be used in class without prior permission. If you have a valid reason for being late every day, please notify me as soon as possible.

Time Commitment Time spent on coursework outside of class is guided by the Bucknell University expectations for academic engagement: "Courses at Bucknell that receive one unit of academic credit [like ELEC 470] have a **minimum** expectation of 12 hours per week of student academic engagement. Student academic engagement includes both the hours of direct faculty instruction (or its equivalent) and the hours spent outside of class on student work." Some weeks the work load could be greater than average, some weeks less, but it should average **at least 8** hours per week beyond class and recitation time. This means that every now and then you might have to commit 10 hours or more to this course in one week.