Objective
This course introduces students to the analysis and design of wireless communication circuits, systems, antennas, and other hardware (Outcome \( a \)). This field of study is frequently referred to as RF and microwave engineering. In addition, the course covers RF circuit layout guidelines and the special issues encountered when making RF/microwave measurements. Some contemporary issues in RF and microwave engineering are also considered (Outcome \( j \)).

The outcomes specified above refer to ABET Criterion 3, Student Outcomes, for accrediting college/university engineering programs:
(a) an ability to apply knowledge of mathematics, science, and engineering.
(j) a knowledge of contemporary issues

Textbook

Recommended Text

Web Site
http://www.facstaff.bucknell.edu/dkelley/elec477/index.html

Corequisite
390 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 only via the web site or Moodle. 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. Lab or 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. Please refer to the “Academic Responsibility at Bucknell” web site (www.bucknell.edu/x1324.xml) or see the instructor if this is not clear.

Bucknell University Honor Code
As a student and citizen of the Bucknell University community:
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 50 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.

<table>
<thead>
<tr>
<th>Grade Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Lecture(s)</td>
<td>1%</td>
</tr>
<tr>
<td>Professional Conduct</td>
<td>4%</td>
</tr>
<tr>
<td>Homework</td>
<td>15%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>20%</td>
</tr>
<tr>
<td>3 or 4 Exams</td>
<td>15 or 20% ea.</td>
</tr>
</tbody>
</table>

Incorporated into Professional Conduct if not needed
Students taking the graduate version of the course (ELEC 677) must complete a special individual or group assignment that will be treated like an exam for grading purposes. More information will be provided to those students.

Exam scores will not be discussed until a 24-hour “cooling off” period has passed, except in cases where 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.

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>93-100</td>
<td>A</td>
</tr>
<tr>
<td>90-92.9</td>
<td>A−</td>
</tr>
<tr>
<td>87-89.9</td>
<td>B+</td>
</tr>
<tr>
<td>83-86.9</td>
<td>B</td>
</tr>
<tr>
<td>80-82.9</td>
<td>B−</td>
</tr>
<tr>
<td>77-79.9</td>
<td>C+</td>
</tr>
<tr>
<td>73-76.9</td>
<td>C</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>F</td>
</tr>
</tbody>
</table>

Conflicts and Special Accommodations

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, except in extraordinary cases. Official university commitments such as recitals and athletic events will normally be accommodated, as will interviews and extraordinary personal opportunities. However, in accordance with university policy, personal travel plans under your control will not be accommodated.

If you unexpectedly miss an exam, a major deadline, or an in-class activity due to illness, you must contact the instructor immediately, preferably before class time, and then go to Student Health Services for an evaluation. If a physician confirms the seriousness of your illness, your absence 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 the instructor or Judy Harris as soon as possible. The mostly likely outcome is that the missed exam will be the one for which the lowest score is dropped. Students arriving late to an exam will be offered the choice of completing it in the time remaining or dropping the score for that exam. Any additional unexcused absences or missed deadlines beyond the first one will most likely result in a grade of zero for the assignment. 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 or a documented learning disability, please contact the Associate Dean as soon as possible.

Homework Policy

Homework must be submitted by the indicated deadline. Place your name, the course number (ELEC 477 or 677), the homework number, and the page number at the top of each page, and staple all pages together. 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. 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.

A 20% grade penalty will be imposed for homework submitted up to 24 hours after the deadline, a 50% penalty 24-48 hours after the deadline, and no credit will be given thereafter. No homework will be accepted, regardless of when it is submitted, after the solutions have been posted; this supersedes the 24 and 48-hour partial credit allowances. Forgotten homework 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.

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 the instructor as soon as possible.

Laboratory Policies

Policies, requirements, and grading guidelines for the laboratory component of the course will be distributed in the first meeting of the laboratory section.