ECE 420 - Communications

Fall 2005

Catalog Data:

ECE 420 - COMMUNICATIONS [3]
Prerequisite: EE 324 or equivalent, APMA 310 or equivalent

To provide familiarity with the probabilistic concepts of communications theory; to acquaint students with basics of communication link calculations; to provide an understanding of the fundamentals of analog and digital communications; and to bring student to current state-of-technology in aspects of communication engineering via class presentations by practitioners.

Textbook:

Communication Systems, Fourth Ed., Haykin

Packet of lecture notes, S. Wilson, (ECE 613 on cover)

References, (on reserve):

Principles of Communications, Ziemer and Tranter
Analog and Digital Communications Couch
Probability and Statistics, Schaum’s Outline Series

Instructor:

Stephen G. Wilson, Office: C-319 Thornton Hall, Phone 924-6091; e-mail address: steve_wilson@virginia.edu

Course Syllabus: (50 Minute Periods)

Overview of Communication System Design 1
Link Calculations 4
Probability and Random Processes 8
Noise Descriptions 5
Analog Communication Systems 8
and SNR Performance
Digital Communications - Baseband and 11
Carrier Techniques
In-Class Presentations by visitors (TBD) 2
(local area networks, cellular telephones)
radio astronomy, modern satellite
technology, spread spectrum systems)
Quizzes 2
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Grading

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<tr>
<th>Component</th>
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<tbody>
<tr>
<td>Homework</td>
<td>30%</td>
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<tr>
<td>Quizzes (2) (one take-home)</td>
<td>40%</td>
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<tr>
<td>Final Exam</td>
<td>25%</td>
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<tr>
<td>Instructor’s Reserve Fund</td>
<td>5%</td>
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Estimated Content:

Reminder: People taking this class need not take the corresponding lab, but the converse is false. Lab manuals are available at Newcomb Hall Bookstore.