INSTRUCTOR

Dr. Kamesh Namuduri, Office: NTRP B-234, Phone: 940-369-8960

CLASS MEETINGS

Tuesdays & Thursdays: 2:30 – 5:20 P.M., B242

OFFICE HOURS

Tuesday & Thursday: M/W 11 -12

COURSE DESCRIPTION

This course explores the elements of information theory that form the foundation for coding in communication systems. The course begins with the basic concepts of entropy and channel capacity and takes you through a tour of ideas in source coding and channel coding. Topics covered in this course include data compression (optimal codes), channel capacity (channel coding theorems), rate distortion theory (rate distortion functions for different sources), network information theory (single user, broadcast, relay, and multiple access channels, encoding of correlated sources). New research topics such as secrecy capacity of channels and information hiding will also be discussed.

TEXTBOOK


PREREQUISITES

Background in Probability and Random Processes is required for this course. Contact the Instructor for more details.

COURSE OBJECTIVES

Students will be able to understand the fundamental ideas in information theory that will help them understand and appreciate the principles behind today’s communication systems.

GRADING POLICIES

Grading will be based on a weighted combination of class participation, exams, final project presentation, and project report.

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<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>20%</td>
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<tr>
<td>Project</td>
<td>25%</td>
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<tr>
<td>Class Participation</td>
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<td>Mid-term Exam</td>
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<td>Final Exam</td>
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GENERAL COMMENTS

• Students are encouraged to discuss class material (including assignments and projects) with other students and with the instructor. However, all the homework submitted must be submitted individually unless otherwise stated. Copying of a solution (from a friend or a book or from Internet) will be considered as plagiarism and a violation of the University Honor Code.
• Homework assignments are to be turned in at the beginning of the class on the due date. Late homework is unacceptable.
• Make up exams will not be given except under exceptional circumstances and only with prior approval of the instructor.
• All students are responsible for announcements made in lecture, on the student access website, or via the class email list.