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E-mail: kettani@fhsu.edu
Office Hours: MWF 10am-12pm

Course Prerequisite

ISE310.

Course Description

This course introduces students to modeling of information sources and measure of information, joint and conditional entropy, source coding, rate distortion theory, modeling of communication channel and the Channel Capacity Theorem, scalar and vector quantization and coding of discrete information sources.

Course Materials


Program Objectives

Put a table in your syllabus that maps the program objectives (MBA or BBA objectives) with the course. List every program objective. If the objective is not covered in the course, state: Not Covered. If the objective is covered, explain how (exams, homework, research papers, cases, oral presentations, Power Point lectures, etc.) This will help students understand why certain assignments are included in the course and will help us with AACSB assessment.

<table>
<thead>
<tr>
<th>Objective</th>
<th>How Objective will be Evaluated</th>
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</thead>
<tbody>
<tr>
<td>An ability to apply knowledge of mathematics, science, and engineering.</td>
<td>Lecture notes, homework, quizzes and exams.</td>
</tr>
<tr>
<td>An ability to identify, formulate, and solve engineering problems.</td>
<td>Lecture notes, homework, quizzes and exams.</td>
</tr>
<tr>
<td>A knowledge of contemporary issues.</td>
<td>Lecture notes, homework, quizzes and exams.</td>
</tr>
<tr>
<td>An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.</td>
<td>Lecture notes, homework, quizzes and exams.</td>
</tr>
</tbody>
</table>
**Course Objectives**

At the conclusion of this course, the successful (passing) student will be able to:
1. Understand the measure of information.
2. Understand source coding (compression) and channel coding.
3. Carry out modeling of communication channels.
4. Analyze source/channel coding schemes.

**Course Delivery and Structure**

This is an on-campus course and student attendance to lectures is required. Material will be delivered through lectures, enhanced by student participation and group projects. Other evaluation methods will involve exams, quizzes and homework.

**Grading and Evaluation**

- Attendance, 10%.
- Three tests, 20% each,
- Homework, 10%,
- Quizzes, 20%.
- Letter grade assignment is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>F</td>
<td>&lt; 60%</td>
</tr>
<tr>
<td>60% ≤ D &lt; 70%</td>
<td></td>
</tr>
<tr>
<td>70% ≤ C &lt; 80%</td>
<td></td>
</tr>
<tr>
<td>80% ≤ B &lt; 90%</td>
<td></td>
</tr>
<tr>
<td>A ≥ 90%</td>
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</tbody>
</table>

**Course Policies**

- Late Work: All assignments must be submitted on the due time. Late assignments will not be accepted.
- Make-Ups: No matter what the excuse is, there will be given no make-up to any of the assignments of this course.
- Contesting: Grades can be contested during a two-week period from the time that they were announced. After such period is elapsed, grades may not be contested.