SYLLABUS

STA 6326--01 Mathematical Statistics I


Office: DM--402

Phone & e-mail: 348–2602, mi@fiu.edu

Office Hour: MW 6:15-7:15, or by appointment

Course Objectives and Learning Outcomes:

STA 6326 students will learn the basic probability theory which is the starting point of the rest of their study on statistics. Random variables and its moments will be discussed. Students will be familiar with many common distributions, continuous or discrete, univariate or multivariate, that provide rich families for modeling real data. Based on these discussions students then will learn various properties of random sample along with some convergence concepts.

Course Content:

Ch. 1: 1.1--1.6
Ch. 2: 2.1--2.3
Ch. 3: 3.1--3.3
Ch. 4: 4.1--4.5
Ch. 5: 5.1-5.5.3

Major Topics:

Sample space, sigma algebra, probability measure, probability space, random variable, probability mass/density function, distribution function, moments and moment generating function of random variable, distribution of functions of random variables, some common families of distributions, exponential families, some probability inequalities, joint and marginal distributions, conditional distributions and independence, covariance and correlation, bivariate and multivariate distributions, random samples, sampling distributions of some statistics, order statistics, some basic convergence concepts.
Home Work Assignments:

1. Use only one-side of paper to write solutions and start each problem on a separate page.
2. The homework for each Chapter will be due in the second lecture following the completion of that Chapter.
3. No later homework will be accepted.

Tentative Dates of Examinations:

1. There will be two exams: Midterm and Final.
2. Midterm will cover Chapter 1, 2, and Sections 3.1-3.4. It will be given before the middle of November.
3. Final will be given at the end of the semester.

Policies:

1. If a student missed a class, it is the student's sole responsibility to obtain the missing information.
2. Exact exam dates will be announced in advance. NO MAKE UP EXAMS WILL BE GIVEN. If extenuating circumstance exists, please contact the instructor PRIOR TO the exam.
3. Grade will be based on two exams (40% for each) and the Home Work Assignment (20%). The following scale will be used to assign letter grade for the course:

   
<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>[0%, 57%)</td>
<td>F</td>
</tr>
<tr>
<td>[57%, 60%)</td>
<td>D-</td>
</tr>
<tr>
<td>[60%, 64%)</td>
<td>D</td>
</tr>
<tr>
<td>[64%, 67%)</td>
<td>D+</td>
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<tr>
<td>[67%, 70%)</td>
<td>C-</td>
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<tr>
<td>[70%, 74%)</td>
<td>C</td>
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<tr>
<td>[74%, 77%)</td>
<td>C+</td>
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<tr>
<td>[77%, 80%)</td>
<td>B-</td>
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<tr>
<td>[80%, 84%)</td>
<td>B</td>
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<tr>
<td>[84%, 87%)</td>
<td>B+</td>
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<tr>
<td>[87%, 90%)</td>
<td>A-</td>
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<tr>
<td>[90%, 100%]</td>
<td>A</td>
</tr>
</tbody>
</table>

4. The Incomplete (IN) grade will be given ONLY to a student who has completed the bulk of the work in the course and is unable to complete the course due to a serious interruption not caused by the student's own negligence.
5. The University policies of academic misconduct, sexual harassment, disability services, and religious holidays etc. will be followed.

REMARK: The course syllabus provides a general plan for the course. Modifications may be necessary.
3. The Incomplete (IN) grade will be given ONLY to a student who has completed the bulk of the work in the course and is unable to complete the course due to a serious interruption not caused by the student's own negligence.

4. The course syllabus provides a general plan for the course. Deviation may be necessary.