STAT 4710/7710 Introduction to Mathematical Statistics
Fall Semester 2012

Time: Tuesday and Thursday, 9:30 to 10:45 am
Location: Middlebush Hall 13
Instructor: Tieming Ji
Office: 209D Middlebush Hall
Office hours: Tuesday and Thursday, 11:00 am to 12 noon
E-mail: jijt@missouri.edu
Course website: https://blackboard.missouri.edu/
Please log in to the Blackboard website regularly for important announcements, homework assignments and homework solutions.


Reference (recommended but not required): Workbook for this class, which could be purchased at the bookstore.

Homework
- There will be about 12 homework assignments
- Homework assignments will typically be due on Thursdays (before midnight) and will be assigned a week in advance
- **No late homework will be accepted**
- In calculating your overall grade, your lowest 2 homework scores will be dropped
- **Graduate students will have an extra question(s) in each homework**
- When submitting your homework:
  o Clearly write your name, course name, section number and assignment number on the top of the first page
  o Show all your work to get full credit
  o Homework should be submitted on standard-size paper (8.5” by 11”)

Exams
- There will be 2 midterm exams and a comprehensive final exam
- The dates for the exams are as follows:
  o Midterm I: Tuesday, September 18
  o Midterm II: Thursday, November 15
  o Final Exam: Thursday, December 13, 12:30 - 2:30 p.m., in Middlebush 13
- The midterm exams will be given in the same location and times as regular lectures
- If you miss an exam without prior approval, you may be given a grade of zero. If you must miss an exam, please see me as soon as possible. All approved reasons require that documentation be presented in advance. If you miss an
exam for a medical reason, you must present a physician’s note. Travel is not an approved reason for missing an exam.
- All exams are closed book. However, you are allowed an 8.5” by 11” page of notes (both sides) for each midterm exam, and three such sheets for the final exam.

**Grading**
Your final course percentage will be determined by the following formula:
Course Score = 0.25 Homework + 0.20 Midterm Exam I + 0.20 Midterm Exam II + 0.35 Final Exam

**Tentative Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Sections</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.1-1.3</td>
<td>Overview of probability &amp; statistics, sample spaces, events, permutations &amp; combinations</td>
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<tr>
<td>2</td>
<td>2.1-2.4 &amp; 3.1</td>
<td>Axioms &amp; properties of probability, conditional probability, multiplicative rule, independence, Bayes theorem, random variables</td>
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<tr>
<td>3</td>
<td>3.2-3.5</td>
<td>Discrete probability densities, expectations, geometric, mgfs, binomial</td>
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<tr>
<td>4</td>
<td>3.5, 3.8, 4.1, 4.2; Review for Midterm Exam I</td>
<td>Binomial cont., Poisson, pdfs, expectations.</td>
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<tr>
<td>5</td>
<td>Midterm Exam I; 4.3-4.4</td>
<td>Gamma, exponential, chi-square, normal</td>
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<tr>
<td>6</td>
<td>4.5-4.7 &amp; 5.1</td>
<td>Normal probability rule, normal approximation to binomial, Weibull, joint densities</td>
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<tr>
<td>7</td>
<td>5.1-5.4</td>
<td>Joint densities cont., expectations, correlation, conditional dist.s</td>
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<tr>
<td>8</td>
<td>6.1-6.4</td>
<td>Random sampling, graphical &amp; numerical summaries, boxplots optional, Reading assignment: Stem-and-leaf diagrams.</td>
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<tr>
<td>9</td>
<td>7.1-7.4 &amp; 8.1</td>
<td>Estimation, distribution of sample mean, central limit theorem, interval estimates, interval estimates of $\sigma^2$, mles optional</td>
</tr>
<tr>
<td>10</td>
<td>8.2-8.5</td>
<td>Interval estimates of $\mu$, $t$-distribution, hypothesis testing, significance testing, tests about $\mu$</td>
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<tr>
<td>11</td>
<td>8.6,8.7,9.1</td>
<td>Tests about $\sigma^2$, nonparametric methods, estimating proportions</td>
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<tr>
<td>12</td>
<td>9.2,9.4,10.1</td>
<td>Tests for one and two proportions, estimating the difference of two means. Reading assignment: Section 9.3 confidence intervals for the difference of two proportions.</td>
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<tr>
<td>13</td>
<td>Review for Midterm Exam II; Midterm Exam II</td>
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<tr>
<td>14</td>
<td>Thanksgiving</td>
<td>no classes</td>
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<tr>
<td>15</td>
<td>10.2-10.6</td>
<td>Comparing variances, comparing means with equal variances, with unequal variances, paired $t$, nonparametric procedures.</td>
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<tr>
<td>16</td>
<td>Review for the final</td>
<td>Finish the first 10 chapters</td>
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<tr>
<td>17</td>
<td>Final Exam Week</td>
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Academic Honesty

Academic integrity is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, collaboration, or any other form of cheating, consult the course instructor.

Students with Disabilities

If you anticipate barriers related to the format or requirements of this course, if you have emergency medical information to share with me, or if you need to make arrangements in case the building must be evacuated, please let me know as soon as possible. If disability related accommodations are necessary (for example, a note taker, extended time on exams, captioning), please register with the Office of Disability Services (http://disabilityservices.missouri.edu), S5 Memorial Union, 573-882-4696, and then notify me of your eligibility for reasonable accommodations. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.

Academic Inquiry, Course Discussion and Privacy

University of Missouri System Executive Order No. 38 lays out principles regarding the sanctity of classroom discussions at the university. The policy is described fully in Section 200.015 of the Collected Rules and Regulations. In this class, students may not make audio or video recordings of course activity, except students permitted to record as an accommodation under Section 240.040 of the Collected Rules. All other students who record and/or distribute audio or video recordings of class activity are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.

Those students who are permitted to record are not permitted to redistribute audio or video recordings of statements or comments from the course to individuals who are not students in the course without the express permission of the faculty member and of any students who are recorded. Students found to have violated this policy are subject to discipline in accordance with provisions of Section 200.020 of the Collected Rules and Regulations of the University of Missouri pertaining to student conduct matters.
Intellectual pluralism

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.

Important Dates

August 21       First day of this class
August 27       Last day to register, add or change sections
August 31       Last day to change grading option
September 3     Labor Day Holiday (no classes)
September 18    Midterm Exam I
September 24    Last day to drop a class without a grade
November 15     Midterm Exam II
November 19 to 25 Thanksgiving holidays (no classes)
December 10     Final exam week starts
December 13     Final Exam

Note: follow announcements and check online for future changes of these dates.