READ THIS SYLLABUS CAREFULLY. YOU ARE RESPONSIBLE FOR KNOWING
THIS INFORMATION!

Instructor: Dr. K.K. Saha
Office: Marcus White Hall 109
Phone: (860) 832 2840
Email: sahakrk@ccsu.edu

WebEx Meeting Times: No Specific Class Meeting Time. Please see the posted weekly lecture notes
in BL and feel free to attend any session of the given office hours below for any further discussion to
clarify any part of the materials posted. As an extension, feel free to use also the Thread Discussion
regularly.

Office Hours: Tuesday & Thursday: 11:00 AM – 12:30 PM; Wednesday 10:30 AM – 12:30 PM
Please use the WebEx Meeting Room link below to join the above office hours:
https://ccsu.webex.com/meet/sahakrk

Textbook: Probability and Statistical Inference (10th edition) by Hogg, Tanis & Zimmerman

Topics Covered: Chapters 4 through 9 of this textbook will be covered in this course. See details in the
tentative course schedule section.

Course Description: Continuation of theory and applications of statistical inference. Elements of
sampling, point and interval estimation of population parameters, tests of hypothesis, and the study of
multivariate distributions. This material can be found in Sections 4.1-4.5, 5.1-5.7, 6.4, 6.6-6.7, 7.1-7.4,
8.1-8.4 and 9.1-9.2 in the text.

Prerequisite: STAT 315, Mathematical Statistics I

Course Requirements: For this course, the expectation is at least 6 hours of work outside of class each
week to complete the reading materials and problem sets. However, a general rule for any course is that
you are expected to put in at least 2 hours of work outside of class for every “hour” (50 minutes) in class.
You are expected to attend and participate in all of the class sessions. If you are going to miss a class for a
legitimate reason, please call or e-mail me in advance. You are expected to understand and use the
concepts in the first three chapters of the assigned text. You are responsible to complete satisfactorily all
of the reading material, the content of the text and lectures and all assignments whether you are attendant
or not. You must complete at least all the odd numbered problems in the sections covered each week. It is
essential for understanding the methodology and passing the tests. Note that you are also responsible for
completing all even numbered problems. You are encouraged to work with others on these problems, and
to utilize any resources available. You are responsible to take all the quizzes and exams at their scheduled times.

**Important Dates:** See the academic calendar at [http://www.ccsu.edu/calendar/](http://www.ccsu.edu/calendar/)

**Withdrawal Policy:** After April 19, withdrawals are allowed only under *extenuating circumstances* and require approval of the course instructor, department chair, and dean of the School of Arts and Sciences.

**Blackboard Learn:** Learn will be used to supplement this course. You will be able to access to Learn through CCSU Central Pipeline. This will also be used to post course syllabus, your marks, solutions, distribute documents, and make other materials available to you. Make sure to activate your CCSU computer account. For help, call 832 1720.

**Course Contents:** The tentative outline of the course is given below.

<table>
<thead>
<tr>
<th>Week</th>
<th>Start Date</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Jan. 25</td>
<td>Distributions of 2 RVs&lt;br&gt;The Correlation Coefficient</td>
<td>Section 4.1&lt;br&gt;Section 4.2</td>
</tr>
<tr>
<td>2</td>
<td>Feb 1</td>
<td>Conditional Distributions&lt;br&gt;Bivariate Distributions of the Continuous Type</td>
<td>Section 4.3&lt;br&gt;Section 4.4</td>
</tr>
<tr>
<td>3</td>
<td>Feb. 8</td>
<td>Bivariate Normal Distribution&lt;br&gt;Functions of a RV</td>
<td>Section 4.5&lt;br&gt;Section 5.1</td>
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<tr>
<td>4</td>
<td>Feb. 15</td>
<td>Transformations of RVs</td>
<td>Section 5.2</td>
</tr>
<tr>
<td>5</td>
<td>Feb. 22</td>
<td>Several Independent RVs&lt;br&gt;MGF Technique</td>
<td>Section 5.3&lt;br&gt;Section 5.4</td>
</tr>
<tr>
<td>6</td>
<td>March 1</td>
<td>Review for Exam-I: Must attend WebEx Meeting on 3/2 at 12:15 PM to 1:30 PM, check your email for this</td>
<td>Sections 4.1-4.5, 5.1 – 5.2</td>
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<td></td>
<td></td>
<td><strong>Exam-I (March 4th at 12:15 PM)</strong></td>
<td></td>
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<tr>
<td>7</td>
<td>March 8</td>
<td>Random Functions Associated with Normal&lt;br&gt;Central Limit Theorem</td>
<td>Section 5.5&lt;br&gt;Section 5.6</td>
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<tr>
<td>8</td>
<td>March 15</td>
<td>Normal Approximation to Binomial and Poisson&lt;br&gt;Distributions</td>
<td>Section 5.7</td>
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<tr>
<td>9</td>
<td>March 29</td>
<td>Point Estimation</td>
<td>Section 6.4</td>
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<tr>
<td>10</td>
<td>April 5</td>
<td>Confidence Intervals for Means/Variances</td>
<td>Sections 7.1 - 7.2</td>
</tr>
<tr>
<td>11</td>
<td>April 12</td>
<td>Confidence Intervals for Proportions and Sample Size</td>
<td>Sections 7.3 - 7.4</td>
</tr>
<tr>
<td>12</td>
<td>April 19</td>
<td>Hypothesis Testing about Means</td>
<td>Sections 8.1-8.2</td>
</tr>
<tr>
<td>13</td>
<td>April 26</td>
<td><strong>Exam-II (April 15th at 12:15 PM)</strong></td>
<td>Sections 5.3-5.7, 6.7-7.4</td>
</tr>
<tr>
<td>14</td>
<td>May 3</td>
<td>Hypothesis Testing about Variances/Proportions</td>
<td>Sections 8.3 – 8.4</td>
</tr>
<tr>
<td>15</td>
<td>May 10</td>
<td>Chi-Square Goodness-of-Fit Test&lt;br&gt;Contingency Tables</td>
<td>Sections 9.1 - 9.2</td>
</tr>
<tr>
<td>16</td>
<td>May 10</td>
<td>Final Exam Week</td>
<td>Final Examination&lt;br&gt;May 11th, 10:30 AM - 12:30 PM in WebEx</td>
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</tbody>
</table>
**Evaluation:** Minimum averages have been established for each of these grades:

- A 93% A– 90% B+ 87% B 83% B– 80% C+ 77% C 73% C– 70% D+ 67% D 63% D– 60%

**Grading Assessment:** The final grade for this course will be calculated based on the following weights.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Two Exams</td>
<td>30% each</td>
</tr>
<tr>
<td>Final Exam (comprehensive)</td>
<td>30%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Online Class Notes:** Lecture notes for online part will be posted on Tuesday and Thursday at 8:00 AM ET. You also need to read the textbook material covered. In addition, you are encouraged to raise questions in the threaded discussions and try to answer questions that being asked by your fellow classmates.

**Daily Homework:** A set of practice problems will be posted at the beginning of the semester. Besides a set of practice problems, an additional set of problems from each section of the textbook will be posted as a daily homework assignment. Although these will not be collected for grading, could be very helpful for the exam preparation.

**Midterm Exams:** Two closed book midterm exams will be given through WebEx using BL in the following schedules based on the material covered before exam date. You must take this exam through WebEx turning on the camera during the given exam duration. Further instructions about exams will be posted in BL.

- **First Midterm:** March 4th, 12:15 PM - 1:30PM ET.
- **Second Midterm:** April 15th, 12:15 PM - 1:30PM ET

**Final Exam:** The one 2-hour final exam based on the all material covered will be given through WebEx using BL in the following schedules based on all sections covered:

- **Tuesday 5/11 from 1:00 PM - 3:00 PM.**

**NO MAKE UPS WILL BE GIVEN:** If you miss one of the hour exams, contact me immediately (preferably in advance). If you have a good reason for not being able to take the test as scheduled, I will substitute your final exam score for that test when computing your final grade. Otherwise a grade of zero will be recorded for the missed exam. I will do this only for the first missed test. Subsequent missed tests will be recorded with a grade of zero.

**Incomplete Grade:** An “I” will be assigned if and only if (all must apply) (i) the student is not currently failing the class; (ii) there is no substantial quantity of work yet to be completed; (ii) there is no extra work required of the instructor beyond the normal duties of grading the paper/exam; and (iv) there is no need for the student to attend the class in subsequent terms. An “I” grade must be made up according to the university guidelines.

**Cell Phones Prohibited:** The use of cell phones during class time or exam for any purpose is prohibited. Make sure to turn off your phone before entering the classroom.

**E-mail Policy:** E-mail should be used only to provide me with information or to ask a question that requires a brief response – “What did I miss in class today?” does NOT count. For more lengthy discussions, you will be encouraged to raise questions during class or during office hours, or make a separate appointment if necessary. Please note that when you send an e-mail, make sure you put the course number with section or class meeting times in the subject.
Disclaimer: The instructor reserves the right to adjust the scope of the course, including number and timing of exams, as necessary.

Disability Statement: Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Student Disability Services, room 201, Willard Hall if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with your faculty.

University Policies:
You are responsible for understanding and abiding by the University’s policy on academic integrity. Information on the policy may be found at http://www.ccsu.edu/AcademicIntegrity/. This policy is rigorously enforced by the Department of Mathematical Sciences.

Resources Available:
1. If you need help, take advantage of your instructor's office hours. Do not wait until just before the first test to do so.
2. The Learning Center is located in Room 316, Diloreto Hall. Free tutoring is available in the Learning Center, and at other locations on campus. A schedule for hours the Center is open will be posted soon after the beginning of the semester.
3. Form a study group with other students in your section. Explaining solutions to homework problems to each other is a good way to learn.
4. A list of private tutors for hire is available in the math department office, Room 128 Marcus White, 832-2835.

Title IX Statements: Central Connecticut State University strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon age; ancestry, color; gender identity and expression; intellectual disability; learning disability; mental disorder; physical disability; marital status, national origin; race; religious creed; sex, (including pregnancy, transgender status, sexual harassment and sexual assault); sexual orientation; or any other status protected by federal or state laws. Any student who has concerns about this should contact the Office of Diversity and Equity (ODE) at 860-832-1652, Student Affairs at 860-832-1601, or his/her faculty member. The ODE is located in Davidson Hall, Room 102