Course Syllabus  
STAT 455: Experimental Design- Hybrid  
Department of Mathematical Sciences  
Central Connecticut State University  
New Britain, CT 06050  
Fall 2021

Class Meeting Time on Tuesday 4:30 – 5:45 PM; Willard & DiLoreto Halls D119

Online Class on Thursday: Lecture Note will be posted in the BL at 4:30 PM

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

Instructor: Dr. K.K. Saha  
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Office Hours: Tuesday 3:00 PM– 4:30 PM; Wednesday: 2:30 PM – 3:00 PM; Thursday 4:30 PM– 5:55 PM

Textbook: Design & Analysis of Experiments (9th edition) by Douglas Montgomery

Topics Covered: The following topics will be covered in this course based on Chapters 3-8, 13, and 15 in the text:
A. Completely Randomized Designs  
B. Completely Randomized Block Designs  
C. Latin Squares  
D. Analysis of Covariance  
E. Factorial Designs  
F. Balanced Incomplete Blocks  
G. Split Plots  
Included are multiple comparisons, orthogonal polynomials, fixed, random, and mixed effect models, and nested designs.

Course Description: This course serves as an introduction to methods of design and analysis of experiments in statistics. This material can be found in Chapters 3-8, 13, and 15 in the text. As background for this course, students must be familiar with basic statistical inference.

Prerequisite: STAT 416, or, STAT 216 or equivalent (such as STAT 201 or STAT 453)

Important Dates: See the academic calendar at http://www.ccsu.edu/calendar/  

Withdrawal Policy: After November 17, 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:** Online part of the classes will be using BL. You will be able to access to Learn through CCSU Central Pipeline. This will also be used to post course syllabus, online part of lecture notes, 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.

**Online Class Notes:** Lecture note will be posted on Thursday at 4:30 PM 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.

**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.

- Exams I and II 30% and 30%
- Final Exam (comprehensive) 40%
- Total 100%

**Attendance and Class Participation:** Classroom attendance is viewed as a very important part of the learning process. Students are advised that excessive absenteeism may result in the student being disbarred from the exams. So, attendance will be taken during the class session and few points are allocated for your attendance. **Attendance sheet will be given in the beginning of each lecture, and you will be responsible to sign this sheet, no exceptions.** In addition, you are encouraged to raise questions during class and try to answer questions that are being asked during the class session.

**Homework Problems:** Homework problems will be assigned in online class. A few selected homework problems will NOT be graded. **However, if you would turn in neatly written answers to all questions before each exam, then you will receive 5 bonus points for your exam.** Photocopies or e-mail copies are not acceptable. Loose pages will not be accepted. You must use a staple.

**Exams:** The two one-period exams will be given based on the material covered in class. I will announce in advance for the exam material. All these exams will be closed book, but you will be permitted to use calculator. The schedules for the exams are as follows:

- **EXAM-I: October 5th; EXAM-II: November 16th.**

**Final Exam:** The one 2-hour comprehensive final exam will be given in December as scheduled by the Registrar as follows: **December 14<sup>th</sup>, 5:30-7:30 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/](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.
"Covid19 Measures:

1/ Getting fully vaccinated: Vaccines are safe and effective and readily available. The Board of Regents that governs CCSU has determined that a vaccine mandate is in force for Fall 2021. The university has organized free walk-up clinics on campus for those not yet vaccinated and is offering the possibility of gift cards as well. For full details: https://www.ccsu.edu/blueprint/get-vaccinated.html

2/ Wearing face masks: Protecting ourselves and each other requires measures to prevent the spread of COVID-19, which is an airborne virus. Wearing face masks of an approved character (not scarves or bandanas) significantly reduces both the possibility of someone infected spreading the virus, and others not infected from contracting it. CCSU has adopted a policy requiring the wearing of appropriate face masks by all members of the community, and in particular students and faculty while in class or in buildings. Anyone coming to class without an approved face mask will be required to obtain one at the “mask station” nearest our building; class will not be held with anyone not masked.

3/ Maintaining social distancing: Social distancing helps in preventing the spread of the virus. In class, we will keep our desks at the designated 3-foot separations and will not move them for group work. Outside of class, please maintain social distancing, even if the door of the classroom is not open when you arrive. When leaving class, students will exit by row. These measures will be taken to respect the social distancing requirement.

4/ Getting tested if exposed: If you learn that you have been in contact with anyone who has become infected, you need to get tested to determine if you have also been infected. Even a brief encounter may result in infection, given the communicability of the Delta variant. Testing is free and simple. You can find a testing center (e.g., CVS or Walgreen’s) online, or purchase a home testing kit. Do not come to class until you have recorded a negative test result.

5/ Isolating if you have symptoms: If you have any symptoms, including flu-like symptoms, loss of sense of taste or smell, or any other symptom associated with COVID-19, you must immediately inform university authorities and follow quarantine procedures and stay home until your symptoms cease and you test negative for COVID-19. If your symptoms are significant, do not hesitate to contact a physician for medical advice and care, or go to a health care clinic near your home.

6/ Preparing to go remote: We cannot predict what will happen in the coming weeks and months, including whether the infection rate will significantly increase (or perhaps decline), and what measures the university and the state may take. In the case where the pandemic spikes to an unacceptable degree, we may go entirely remote—that is to say, fully online. That decision will be made by the university and system authorities, not individually by your instructors. Should we go remote, you will be informed as to how the class will continue online and any other changes that may be required."