

STA6208-0015 Basic Design & Analysis of Experiments Spring 2022

Instructor: Bikram Karmakar (bkarmakar@ufl.edu).

Class hours: Monday, Wednesday, Friday — Period 4 (10:40 AM–11:30 PM).

Classroom location: Keene-Flint Hall (FLI) 0115.

Course website: Canvas page. Please check regularly.

Instructor's office: 226 Griffin-Floyd Hall (FLO). (Phone. 352-273-2994)

Instructor Office Hours: Fridays 1:00 pm–3:00 pm, or by appointment.

Teaching Assistant: Yichen Bai (ybai@ufl.edu).

TA Office Hours: TBD **Location:** TBD

Objectives:

Train graduate students in the sciences to plan and conduct experiments and data analysis focusing on overview of normal theory inference, nonparametric, and categorical data methods; basic concepts of experimental design; analysis of variance; introduction to factorial and nested experiments.

Prerequisite: STA 6207 or equivalent. Some course topics listed below were covered in STA 6207 and will be assumed without full “treatment”. If you have questions regarding this, consult with the instructor.

Course materials

Textbook: *A First Course in Design and Analysis of Experiments*, 1st Edition by Gary W. Oehlert.

Lecture notes: Lecture notes/overheads will be posted on Canvas after each lecture. They are not meant to be substitutes for the lectures. You are responsible for learning all the material presented during the lecture, and *any topic covered in a lecture is a potential exam topic* (unless otherwise stated). The lecture notes may not reproduce everything covered in the lectures. On occasions, there may be additional information in the lecture notes.

Computing: We will use the free statistical computing language R. You should download it from <https://www.r-project.org> and install it before Friday, January 14. You may wish to also download Rstudio from <https://www.rstudio.com> (go to <https://www.rstudio.com/products/rstudio/> download to get the free Open Source License).

You can ask for assistance in installing R from our TA. R code will be provided for all methods covered in the course either in the lecture notes or separately on Canvas.

Additional materials, e.g., R programs and data sets, may be posted on Canvas and you will be notified of them using Canvas announcements. Canvas announcements will be regularly used to provide updates regarding the class. Please make sure you get alerts on all Canvas announcements.

Course structure

Remark: Some parts of the following course structure may change to make the course accessible to everyone depending on how we adapt to in person classes. You will be informed well in advance of any changes, and university policies will be followed.

Take-home exercises: Exercises will be posted regularly on Canvas. They will not be graded. Thus, you are not expected to hand in your answers to the exercises. But, you should solve or attempt to solve all of them to thoroughly learn the material and *be best prepared for the exams*. You may work with other students to solve the suggested problems and to study the course material in general. Although, you will be assessed individually. We will post solutions to all the exercises on Canvas. Naturally, you will learn best if you attempt to solve the exercises before consulting the solutions.

Homework assignments: There will be approximately 3 assignments. You will have at least one week to hand them in from the time they are posted on Canvas. Some of the assignments will require you to use R.

Quizzes: There will be approximately 4 in-class quizzes, typically scheduled for Fridays. Each will take place during the final 5 to 10 minutes of class time. All quizzes have equal weight for grading, but one of your quizzes will be dropped – whichever the rest gives you the highest final score in the course, as determined by the instructor. No make-up quizzes will be offered. You will be notified of an upcoming quiz at least one week in advance.

Exams: Four within-term exams are tentatively scheduled on:

Monday, Feb 7 – Exam 1

Monday, March 14 – Exam 2

Wednesday, April 20 – Exam 3

The lowest of the first 2 within-term exams will be dropped. This may be an exam that you did not attend.

Attendance: Classroom lecture attendance and participation is fully expected. You are responsible for learning all material presented during lecture, and any topic covered in lecture is a potential exam topic (unless otherwise stated).

Grading: Grading will be based on a composite score: 5% class participation + 25% homework assignments + 25% of quizzes + 20% from the best out of within-term exams 1–2 + 25% within-term exam 3. There may be opportunities for earning extra credits.

Final letter grades will be assigned based on the University’s grading scale that includes minus-grades (this may change depending on any changes in policies). You can familiarize yourself with the University’s grading policy here: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Tentatively, we will follow the following percent to letter grading scale: $A = 95\text{--}100$ or above, $A- = 90\text{--}94$, $B+ = 85\text{--}89$, $B = 80\text{--}84$, $B- = 75\text{--}79$, $C+ = 70\text{--}74$, $C = 60\text{--}69$, $C- = 50\text{--}59$, and so on. The lower limits on this grading scale may be lowered. The calculation of your final composite score will be done outside of Canvas using the details provided above. Please note that the formula used by Canvas will not necessarily produce the final average according to the course grading scheme.

Course Policies

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, dso.ufl.edu/drc) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Relevant links: gatorevals.aa.ufl.edu/students/; ufl.bluera.com/ufl/; gatorevals.aa.ufl.edu/public-results/.

<https://policy.ufl.edu/policy/masking-and-physical-distancing/>

Campus Resources:

Counseling and Wellness Center: <http://www.counseling.ufl.edu/cwc/>.

Academic Resources: <http://www.ufl.edu/academics/resources/>.

Disability Resource Center: <https://www.dso.ufl.edu/drc/>.

Student Health Care Center: <http://shcc.ufl.edu>.

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit umatter@ufl.edu.