

ST518-601 Syllabus

Spring, 2024

Statistical Methods II

Location and time: online, video lectures available Tu/Th

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| Instructor: | Jason A. Osborne (jaosborn@ncsu.edu) |
| Office location: | 5214 SAS Hall |
| Campus Phone: | (919) 515-1922 |
| Office Hours(zoom): | Wednesday, 10:00am-11:30am, Friday 9:30am-10:30am (subject to change) |
| Grader : | Xiaomeng Liu (xliu63@ncsu.edu), office hours TBD. |
| Prerequisite : | ST517 or equivalent |
| Course website : | All materials, announcements and assignments will be posted on or submitted using moodle. An NCSU unity id and password will be required to log on to the course webpage through https://wolfware.ncsu.edu |
| Course Description : | This is an applied course that introduces linear models with factorial effects used to analyze data from designed experiments and regression models to analyze data from observational studies. Experimental design is also covered, with an introduction to complete block, latin square, crossed and nested factorial designs and split-plots. Many examples are taken from the life sciences. |
| Software Requirement: | SAS statistical software package. R is ok to use, but instruction and demonstration is based on SAS. NCSU students may obtain SAS through the NCSU IT website: https://software.ncsu.edu/supplied_software/sas/ |
| Textbooks(suggested): | <ul style="list-style-type: none">• Statistical Research Methods in the Life Sciences, by PV Rao, ISBN=0-534-93141-3• An Intro to Statistical Methods and Data Analysis (6th edition), by Ott and Longnecker, ISBN: 978-0-495-01758-5• Statistics for Research, (3rd edition) by Dowdy, Wearden and Chilco, ISBN=0-471-26735-X |
| Lecture notes: | Posted topic-by-topic on moodle. Spaces may appear liberally in these notes. The appropriate information to enter in these spaces will be delivered during lecture. |

Graded Coursework:

- A course gradebook will be privately visible on moodle.
- Graded work is comprised of the following elements

| Requirement | Proportion |
|---------------------------|------------|
| Homework Assignments (11) | 30% |
| Midterm Exam | 30% |
| Final Exam | 40% |

- Students achieving
 - $\geq 90\%$ of the total points will receive an A- or better
 - $\geq 80\%$ of the total points will receive an B- or better
 - $\geq 70\%$ of the total points will receive an C- or better
 - $\geq 60\%$ of the total points will receive an D- or better

Homework: Homeworks are to be submitted through the portal on moodle. MS Word documents will not be accepted. Please convert to pdf, or use plain text. Homeworks will be due every Friday evening by 10pm. **Note:** Homeworks that are submitted within 48 hours of the due date will have a penalty of 20 points (out of 100). Homeworks more than three days late cannot be accepted. If circumstances arise which prevent you from finishing the homework on time, extensions can be granted, but please let us know before the due date, not after.

Exams: Exams will be administered in person through DELTA, or through an approved off-campus proctor. Calculators are permitted. One double-sided sheet of hand-written notes is allowed on the exam.

- The Midterm Exam window will be **Tuesday and Wednesday, February 27th and 28th**. Please allot 1.25 hours.
- The Final Exam window will be **Tuesday, April 30th and Wednesday, May 1st**. Please allot 2.5 hours.
- One handwritten page of notes (double-sided) may be used for reference on the Midterm Exam.
- One handwritten pages of notes (double-sided) may be used for reference on the Final Exam.

Academic Integrity: Academic misconduct, such as cheating on exams will not be tolerated. Please see the NCSU policy at this link: <http://policies.ncsu.edu/policy/pol-11-35-01>

Course content/approximate schedule:

| Subject | Weeks |
|---------------------------------------|-------|
| Simple and Multiple Linear Regression | 1-3 |
| Factorial experiments, ANCOVA | 4-6 |
| Multi-factor experiments | 7-9 |
| Block designs | 10-11 |
| Random and mixed effects | 12-14 |
| Split-plots, logistic reg | 14-15 |

Additional notes

- As we learn, we will probably have questions. The following resources are available to help us get answers and additional information:
 1. the General Discussion Forum on moodle
 2. Office hours
 3. Email (for administrative matters only, not for explaining material)
 4. Phone (919 515 1922), (on a limited basis).
- Disputes about grades must be put in writing within two days of receipt of the grade on any homework or exam.

Exams Proctored by DELTA

Exams are proctored by testing-services.delta.ncsu.edu. A proctor is an impartial third party who verifies the identity of the student and ensures the academic integrity of the exam. **Local students** - DELTA Testing services will offer exams for on-campus students at one of the local test centers. Please visit the DELTA Testing Services website for testing-services.delta.ncsu.edu.

- <https://testing-services.delta.ncsu.edu/on-campus-make-an-appointment/> Exams at the DELTA Test Centers are by **appointment only**. To schedule your appointment, visit <https://testing-services.delta.ncsu.edu/on-campus-make-an-appointment/>
- **Step 2: Come Prepared.**
 - Bring a photo ID.
 - Note pages will be collected after exams. Make a copy of any notes before coming to the test center.

Students with Accommodations - If you have approved accommodations with NC State's Disability Resource Office (DRO), DELTA Testing Services wants to ensure that you receive the appropriate accommodations when you go to the test center.

- Students *must* fill out the DELTA <https://apps.delta.ncsu.edu/proctoring/accommodations/> for each course in which accommodations are received **prior to making an appointment**. Once DELTA has processed your request(s), a confirmation email will be sent informing you that your accommodations have been processed and your appointments can be scheduled. *Appointments must be made at least 4 hours in advance.*
- If you have already scheduled your appointment before your accommodation request has been processed, please confirm your appointment does not exceed the Test Center closing time.

Off-campus students — DELTA Testing Services will oversee the process of approving an off-campus proctor, sending all exam materials, and receiving any materials from your proctor.

- <https://testing-services.delta.ncsu.edu/off-campus-submit-request/> To use an off-campus proctor for an exam, you must submit an online request and it must be approved by DELTA Testing Services. Submit your request at least 7 days before your exam window. Most exam material is sent 2 - 3 business days before the exam window.
 - Pre-approved proctors are marked on the website's interactive map and are selectable in a drop-down menu in the request form.
 - If you do not see a pre-approved option in your area, it is your responsibility to find a proctor who meets the guidelines. When submitting a request, if your proctor is not pre-approved, select "other" and fill in the remote proctor's information. (Please double-check the remote proctor's email address.)

If you have any additional questions contact deproctor@ncsu.edu or call 919.513.1513