

# STOR 493 Internship in Statistics and Operations Research

## Course Syllabus, August 2024

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**Overview:** STOR 493 provides an opportunity for students in the Statistics and Analytics (STAN) major to obtain credit for STEM-based internships. To qualify, internships should involve the application of analytical techniques or software directly related to statistics, operations research, or actuarial science. The course is open to STAN majors only.

Credits for STOR 493 count towards the new High Impact Experience (HI) and the older Experiential Education (EE) components of the General Education requirement. Credits for the course do *not* count towards the STAN major or minor. Students can receive up to three credits for the course, and must devote at least three hours of work per week to the internship for each credit hour received. Thus a student wishing to receive three credits should work at least nine hours per week at the internship. To qualify for STOR 493, an internship should exceed 100 hours of total work, excluding commuting time, completion of the final report, and the in-person presentation.

Students can take STOR 493 at most two times, for up to six credits in total. If STOR 493 is taken twice, the associated internships should be substantially different in regards to the student's activities and responsibilities, ideally involving different supervisors or different sponsoring organizations.

**Application Procedure:** In order to register for STOR 493 students must first obtain approval from the STOR Director of Undergraduate Studies and the course instructor. To do this, the student should upload to the Online Learning Contract Manager (OLCM) an application consisting of (i) a copy of this syllabus and (ii) the Internship Agency Supplement (IAS) form. More information about the IAS form can be found below.

The internship application may be approved, rejected, or sent back to the student for additional information. It is the responsibility of the student to ensure that the IAS form is complete and accurate. In addition, the student should ensure that *a signed and dated copy of the approved IAS form is sent to the Department directly by the internship supervisor*. The form should be emailed to stor@unc.edu with the subject header [Student name] STOR 493

**Course Registration:** Once a student's internship application has been approved, they will be registered for STOR 493 by STOR Department staff. Please take note of the following.

- Regardless of the end date and duration of the internship, students taking STOR 493 must receive approval of their internship application before beginning the required 100 hours of internship activity.
- If the internship extends over more than one semester or summer session, students should register during the semester or session during which the internship ends, and should do so by the first day of classes during that semester.

**Grading and Course Requirements:** STOR 493 does not have regular class meetings or assignments. Grading of the course is Pass/Fail. In order to pass, the following items must, in the judgement of the course instructor, be completed successfully.

- (1) Internship experience, at least 100 hours.

- (2) Final report, typically 10-12 pages.
- (3) Short in-person oral presentation.
- (4) Agency Evaluation Form (filled out by internship supervisor).

More information and details concerning the report, presentation, and evaluation form can be found below. It is the student's responsibility to email their supervisor the Agency Evaluation form at least one week before the end of the internship or the due date for the form, whichever comes first, and to ensure that the signed form is sent to the Department.

**Scheduling and Deadlines:** Students should register for STOR 493 during the semester or session when they complete their internship. Deadlines for course requirements and assignment of grades will be different for students completing their internships in the Fall and Spring semesters than for students completing their internship during one of the Summer sessions.

A. Students completing internships in the Fall or Spring semesters. Course requirements and grading completed by the end of the semester.

- Registration for STOR 493. Due before add/drop deadline.
- Oral presentation. During last two weeks of classes.
- Final report. Due by the last day of classes.
- Agency Evaluation Form (via email from internship supervisor). Due by the last day of internship or last day of classes, whichever comes first.
- Grade issued. By last day of finals.

B. Students completing internships in one of the Summer sessions. Students will receive an incomplete at the end of the session. The final report and oral presentation will take place during the following Fall semester, after which the incomplete will be changed to a Pass/Fail grade.

- Registration for STOR 493. Due before the first day of the session.
- Agency Evaluation Form (via email from internship supervisor). Due by last day of the session.
- Oral presentation. During the first half of the Fall semester.
- Final report. Due within one week of oral presentation.
- Grade issued. Shortly after due date for final reports.

**Oral Presentation:** Oral presentations are in-person, and should be roughly 10 minutes in length, allowing another 5 minutes for questions. The presentation should not make use of slides, and should make minimal use of notes. The presentation should provide a broad overview of the internship and the internship experience, including a description of the following:

- the organization and group within which the student worked;
- the projects the student undertook, including the mathematical and computational tools they employed;
- lessons learned;
- positive and negative aspects of the internship experience.

**Forms:** There are two forms that must be completed and submitted as part of STOR 493

**A. Internship Agency Supplement.** Completion and submission of this form is part of the internship approval process. The first parts of the form, which are devoted to student information, agency information, and internship details should be completed by the student in consultation with their agency supervisor. The Internship Activities section should include concrete details of the intern's proposed activities, for example, specifics concerning data analysis tasks, software development, visualization, interactions with other individuals or groups, and communication of results.

The final part of the form, concerning student supervision, should be completed by the agency supervisor. Once they have reviewed and signed the form, the agency supervisor should email one copy of the form to the student, and another copy to the STOR Department at stor@unc.edu with the subject line [Student Name] STOR 493.

**B. Agency Evaluation of Student Intern.** This form is completed by the agency supervisor at the end of the internship. A copy of the signed, completed evaluation form should be sent to the STOR Department at stor@unc.edu with the subject line [Student Name] STOR 493.

**Final Report:** At the completion of the internship, students should submit a final report describing their activities. The report should be written in a narrative format, and should be organized into clearly delineated sections, each with its own title/heading. The report should be 10-12 pages using 12-point font, double-spacing and standard margins. The report should be submitted electronically to stor@unc.edu as a pdf file. The following questions and prompts should be carefully and comprehensively addressed in the report.

A. Background

- What is the mission of the institution/organization where you worked, and what are its primary activities?
- What is the role of the group in which you worked, and how does it fit into the larger organization?
- What is the job of your mentor/supervisor, and what is their role within their group?
- Describe the "organizational culture" where you worked (e.g., collegiality, formality, competitiveness).
- Describe any general training or orientation that you received.

B. Description of your work: For each project that you were involved with, describe the following.

- The overall objective of the project.
- Your tasks and responsibilities for the project. With whom do you interact, and in what context?
- Specific skills that you used to complete your tasks. Include technical skills in statistics, operations research, or actuarial science, as well as computing skills.
- Any new skills or knowledge that you acquired during the internship in order to complete your tasks.
- Any challenges that you faced in completing your tasks, and how you dealt with those challenges.
- The results and conclusions that you produced, and their impact on the project as a whole.

C. Self-Assessment

- What is your overall assessment of the internship experience? Did it meet, exceed, or fall short of your expectations?

- Did the internship fit your academic background? Were you well-prepared for your responsibilities?
- What effect did the internship experience have on your future academic plans, for example, course selection, choice of major/minor, and interest in graduate study.
- What effect will the internship experience have on your future career goals?
- Were you given appropriate supervision and feedback during the internship? (too much? too little?)
- Would you recommend this internship to other students as a valuable experience?