ST 555 - Statistical Programming I

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<tr>
<th>Role</th>
<th>Name</th>
<th>E-mail</th>
<th>Office Hours Location</th>
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<tbody>
<tr>
<td>Instructor</td>
<td>Dr. Jonathan W. Duggins</td>
<td><a href="mailto:jwduggin@ncsu.edu">jwduggin@ncsu.edu</a></td>
<td>SAS 4242</td>
<td>MW 9:30 - 11:00</td>
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<td>Online (601 Only)</td>
<td>TBA</td>
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<tr>
<td>TA (001)</td>
<td>Wanying Ma</td>
<td><a href="mailto:wma9@ncsu.edu">wma9@ncsu.edu</a></td>
<td>SAS 1101</td>
<td>N/A</td>
</tr>
<tr>
<td>TA (601)</td>
<td>Wenhao Hu</td>
<td><a href="mailto:whu6@ncsu.edu">whu6@ncsu.edu</a></td>
<td>SAS 1101</td>
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**Recording Notice:** Please be advised this course is being recorded for current and potential future educational purposes. By your continued participation in this recorded course, you are providing your permission to be recorded. Providing your consent to be recorded does not entitle you to access to the recorded lectures.

**Prerequisites:** None

No previous programming experience with SAS or R is required. Previous exposure to a programming language is beneficial, but not expected. Familiarity with some basic statistics (e.g. mean, median, standard deviation) is expected.

**Course Goals:** Most disciplines have specific analytical methods that are commonly used or favored in research. *The goal of this course is not to cover these discipline-specific methods.* This course does not cover data analysis, instead focusing on developing a thorough understanding of how the Base SAS language functions. A fundamental understanding of the Base SAS language provides students the necessary skills to master the specialized techniques that are specific to their own research fields.

**Learning Objectives:** By the end of the course you will be able to (1) write original SAS programs that read data from multiple source formats and apply basic SAS procedures; (2) critique and revise provided code; (3) draw conclusions about the position and value of variables in the PDV; (4) modify data set contents while controlling resulting output; and (5) write original R programs to achieve results comparable to basic results in SAS.

**Materials:**

- **Textbook:** Textbooks are solely for your reference. There will not be assigned readings or other assignments from the texts. *As such, there is no required textbook.* Several optional texts have been ordered via the campus bookstore.
  
  

  An additional useful reference book (though substantially more expensive) is


**Course Website:** Any course materials will be distributed through Moodle: [http://wolfware.ncsu.edu](http://wolfware.ncsu.edu). Your assignment grades will be posted here as well. While care is taken to enter the grades, it is your responsibility to alert the instructional team immediately if a mistake has been made during grade entry.

**Software:** Regular access to both SAS and R will be required. One or both packages will be required for all assignments in the course. Information about downloading SAS may be found here: [http://software.ncsu.edu/](http://software.ncsu.edu/) and information about downloading R may be found here: [https://cran.r-project.org/](https://cran.r-project.org/).

SAS is freely available to all NCSU students and is only available on Windows- or Linux-based machines.

**WARNING:** Installing SAS can be a very time-consuming task (taking anywhere from 4 - 12 hours) and is not required to succeed in this course. You should have access to SAS in most on-campus computer labs and, if necessary, it can be installed on machines in your department’s systems administrator.

Information about remotely accessing software (rather than downloading it) can be found here: [http://www.stat.ncsu.edu/computing/](http://www.stat.ncsu.edu/computing/). *Note that you will not be able to use the NCSU VCL for this course.*
Grading: The final course grade is a weighted average of: homework (20%), two exams (25% each), and the final exam (30%). The following grading scale is used in determining final course grades and to maintain fairness no curve will be applied.

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<tr>
<td>A+</td>
<td>[97, 100]</td>
<td>B+</td>
<td>[87, 90)</td>
<td>C+</td>
<td>[77, 80)</td>
<td>D+</td>
<td>[67, 70)</td>
<td>F</td>
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<tr>
<td>A-</td>
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Homework: Homework will be assigned on a regular basis. Unless otherwise specified, you are encouraged to discuss the problems as appropriate. However, cheating/copying will not be tolerated. You must turn in your own code. Your lowest homework grade is dropped automatically. Because the lowest homework grade will be dropped automatically, no late homework is accepted and no extensions will be provided.

Homework assignments will vary in format during the semester. Some assignments will be entirely multiple choice while others will include writing original programs. Some assignments will be individual, while others may require a partner. The format and expectations will be communicated in advance of each assignment.

Exams: There will be two midterm exams during the semester. Exams will be primarily multiple choice, though they may contain some free response questions. The exams are closed book and closed notes. Exact exam dates will be announced in class, no later than one week in advance of the exam date. The approximate exam window for Midterm I is the second or third week of February (Feb 7 - Feb 18). For Midterm II the approximate exam window is the fourth or fifth week of March (Mar 21 - Mar 31).

There are no make up exams. In the event that missing a midterm exam is unavoidable, students with excused absences will have their remaining exam-related grade components re-weighted. This policy will be applied to at most one in-class exam, and does not apply to the final. You should familiarize yourself with the university’s excused absence policy found here: https://policies.ncsu.edu/regulation/reg-02-20-03.

Exam Proctoring: Students in 555-601 must arrange to take their exams during the assigned exam window.

Students in 555-601 may take exams in their choice of two possible methods.

1. Through the Distance Education Proctoring Offices: Students who are in Wake and nearby counties may arrange to take their exams at the DE Proctoring offices on a walk in basis. For more information see http://distance.ncsu.edu/students/localproctor.html

2. Off campus proctoring: Students who are not in Wake County or the adjoining counties or have extenuating circumstances may take exams through an approved proctor. All remote proctoring should be arranged through the Distance Education Proctoring Office. For more information on arranging proctors see http://distance.ncsu.edu/students/remoteproctor.html.

Regardless of the location, students should plan their exam location well in advance and verify arrangements at least one week in advance of the exam. Failure to identify an a approved proctor and schedule your exam is not an excuse for missing an exam.

Final Exam: The final is comprehensive and closed book and closed notes. Exam dates and times vary by section but you must take the final exam at the University’s designated day and time. To locate the date and time for your final exam visit: https://registrar.ncsu.edu/calendars/exam/. Students in 555-601 will be provided an appropriate exam window. See above for details on Exam Proctoring.
Classroom Policies:

Attendance (Section 001): There is no enforced attendance policy in this class. However, you are expected to be on time to class and paying attention for the entire lecture. If missing class is unavoidable, it is the student’s responsibility to obtain the notes from a classmate. Excused absences are determined in accordance with the university’s policy. If you are habitually absent (unexcused) you forfeit the right to come to office hours.

Attendance (Section 601): Attending class means that you have logged in and read or viewed the course materials for that day. You are to do this before any related assignments are due or discussion boards close. As this course is asynchronous and materials are available for extended periods of time, having an event on a Monday does not excuse you from accessing Monday’s materials and preparing for Wednesday’s lecture.

Communication: All electronic communications will be handled through either Moodle or NCSU e-mail addresses. Course-related e-mail should be professional in nature and primarily for administrative purposes (e.g. no explanations of material!). E-mails asking for information that can be found on the syllabus or the course website are typically not answered. E-mails regarding how an assignment was graded should be sent to both TAs and I should be copied. You should receive an e-mail back from the instructional team within one day (excluding days with no classes such as weekends and holidays).

Discussion Board: A general discussion board will be available on the course website that will allow students to ask questions of each other. Questions and answers should be clearly communicated and can be about anything related to the course. This board will be moderated by either the instructor or the TAs and you are expected to treat each other professionally.

Discussion Board (Section 601): A separate discussion board will be set up for addressing issues specific to the DE section of the course. This board should not be used to discuss course content. (Topics typically include discussion regarding interactions with DELTA, online office hours, exam windows, accessing the online lectures, etc.)

Classroom Behavior: Courtesy and respect for your classmates is expected at all times. Cell phone and computer use is not allowed in the classroom. Any behavior that affects a classmate’s ability to learn or affects my ability to teach will be addressed as soon as possible. If necessary the instructor may ask you to meet outside of class to discuss the issue.

I reserve the right to add/remove/modify classroom policies during the semester.

Student Conduct: The University’s Code of Student Conduct will be strictly enforced in this course and misconduct will not be tolerated. All exams are to be completed individually. Although working together on out-of-class assignments to overcome obstacles is encouraged, each student must compose and write his/her/their own responses. All cases of misconduct will be handled as set out in university policies. For additional information, see: http://policies.ncsu.edu/policy/pol-11-35-01. If you are unclear or have any questions about the nature of an assignment, please ask me up front.

Accommodations: Reasonable accommodations will be made for students with verifiable disabilities. Any student who feels they may need an accommodation based on the impact of a disability should contact the instructor privately to discuss your specific needs. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 919.515.7653. http://dso.dasa.ncsu.edu/.

For more information on NC State’s policy on working with students with disabilities, please see http://policies.ncsu.edu/regulation/reg-02-20-01.

**Necessary changes in the structure or content of this syllabus will be communicated clearly in writing via a revised syllabus.