# STA 3024 SAS for Data and Statistical Analyses
## Spring 2020 Course Syllabus

**Instructor:** Dr. Steven Ramsier
**Office:** 441 DSL *(Temporary for Spring 2020)*
**Office hours:** 10:00 AM to 11:00 AM on Wednesdays and 9:30 AM to 10:30 AM on Thursdays.
**E-mail:** ramsier@stat.fsu.edu
**Phone:** 644-3218 (Main Statistics office phone – currently no direct line to the instructor)
**Fax:** 644-5271

**TAs/Graders:**     Michael Saridakis   **E-mail:** ms18ag@my.fsu.edu
                                                          Grading: Starter and Assignments 1-5

                                 Yuxi Zhao           **E-mail:** yz17m@my.fsu.edu
                                                       Help Room: 12:30 -1:45 PM  Tu Th in HCB 219
                                                       Grading: Project A and B

**Class Meeting Times:** 2:00 – 3:15 PM  Tu Th  in HWC 3504

**Exam Dates:  February 11** (Tuesday) **and April 9** (Thursday)

**Final Period:  *Thursday, April 30, 7:30 AM to 9:30 AM (if necessary)***

**Optional Text:** Elliott, R.J. (2010), *Learning SAS in the Computer Lab*, Third Edition, Brooks/Cole.
      (ISBN 0-495-55968-7).
      Other references will be provided during the course of the semester.
**Internet:** Online access required for SAS programs and learning management system
**Prerequisite:**  Introductory statistics course at or above the 2000 level or consent of the instructor.
**Software:** Access to *SAS Studio* (online, on-demand version), *SAS University Edition* (local computer version), or *SAS 9.4* (Windows version available on campus computer labs but differs slightly from the other two versions which will be used in class).
**Strongly Recommended:**  A laptop computer with internet access to bring to class (tablets work with limits).

**Course Description:** This course will introduce the student to the SAS programming language in a lab-based format.  The objective is for the student to develop programming and statistical computing skills to address data management and analysis issues using SAS.  The course will also provide a survey of some of the most common data analysis tools in use today and provide decision-making strategies in selecting the appropriate methods for extracting information from data.

**Course Objectives:** Students who complete this course will be able to:
- Manipulate data sets including as inputting raw data from external files.
- Create data subsets.
- Implement if…then…else structures, and loops.
- Write SAS numeric, character, and probability functions.
- Produce descriptive statistics with graphics.
- Conduct basic statistical estimation and testing using SAS.
- Employ statistical modeling on both qualitative and quantitative data in the SAS environment.

**Grades**

**Grade Composition (1000 Points Total):**

| | |
|---|---|
| Starter Assignment | 10 |
| 5 Take-Home Assignments (100 pts. each) | 500 |
| 2 In-Class Exams (140 pts. each) | 280 |
| Project | 210 |
| Total | 1000 |
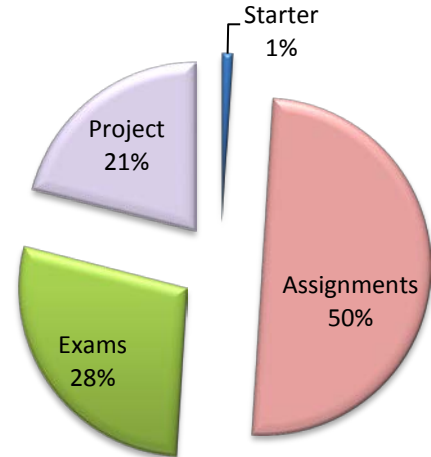
**Grade Assignments for Course Points Earned (*No Rounding*):**

| | | | | | |
|---|---|---|---|---|---|
| A | 930-1000 | B- | 800-829 | D+ | 670-699 |
| A- | 900- 929 | C+ | 770-799 | D | 630-669 |
| B+ | 870-899 | C | 730-769 | D- | 600-629 |
| B | 830-869 | C- | 700-729 | F | 0-599 |

Starter 1%

Project 21%

Assignments 50%

Exams 28%

**Assignments and Responsibilities**

**Take-Home Assignments**
The assignments will consist of problems that will be solved using SAS. There will be five (5) assignments given and all assignments are to be turned in on the Friday that they are **due no later than 5:00 PM.** Assignment documents are uploaded via Canvas and **no emailed assignments** will be **accepted**.

Late, unexcused assignments will be penalized as follows: turned in by 5:00 PM the following Saturday (or 24 hours past time due) – 90% of grade, turned in by 5:00 PM the following Sunday (or 48 hours past time due) – 75% of grade, thereafter – no credit. Assignments are graded on several components: Correct functions and/or procedures, correct data format, properly executable, correct results, interpretations, and adequate commenting. Assignments will be submitted electronically through Canvas.

You are free to discuss the assignment with any of your classmates; however, the activity of students "working together" is not permitted. Your programming, interpretation, and write-up must be done independently. That is, all code, output, and explanations must be generated by you. Your interpretations must be in your own words. Sharing documents and using any portion of another student's (past or present) work, representing it as your own, will result in a score of zero on the assignment.

> **Warning about Using SAS Studio Online:** Access to SAS Studio is done through a web browser and is mostly reliable. However, the program is run on SAS's servers and SAS allocates the resources in order for the program to run smoothly. In the past students have experienced outages and, although these are generally temporary, these can cause students to take longer to complete tasks than would normally be anticipated. Around assignment due dates and times can be especially problematic as several people are attempting to get on the server at once and therefore experience more outages. Understanding this, **a temporary server outage is not a valid excuse to turning in an assignment late**. Good advice is to allow yourself plenty of time to complete your assignments. Please start assignments early to avoid the frustration that a server outage can cause. Trying to complete an assignment at the last minute is a formula for creating extreme stress and potentially adversely affecting your grade.

**Project**
Students will work in groups of three or four on a project. For program evaluation purposes, we ask that Statistics majors form their own groups wherever possible. Groups will account for each student's contribution and will be evaluated individually. The project consists of finding a data set of interest, determining and implementing appropriate graphical methods for presenting the data, using appropriate statistical tools to analyze the data, generating appropriate SAS code, and interpreting the results. The data set, to the best of your knowledge, should not have been previously analyzed in the way you plan to use it for

your project.  There will be short written reports required and a brief verbal presentation to the class.  Late projects will have the same penalty imposed as with assignments. If some emergency prevents you from turning project materials in on time, written documentation must be submitted to the instructor for consideration.

**Exams**
Two 75-minute exams will be given during the course of the semester. The format uses multiple choice questions.  The exams will not require a computer and will ask questions on SAS coding, programming concepts, and interpretation of output.  The exams are closed book; however, one 8.5 x 11 in. sheet of notes, front and back (must be self-produced), is permitted on each exam.

No final exam will be given and exams will only directly cover material presented following the previous exam.  **There are generally <u>no make-up exams for unexcused absences.</u>**  If you miss an exam, the absence must be excused.  Excused absences are granted for emergencies such as a death in the family or treatment of an injury or illness at a medical facility. **Documentation is required.**  It is up to the discretion of the instructor as to how to handle excused absences from exams.  For exam conflicts resulting from university organizational events, weddings, work related trips, etc. that are known in advance, the instructor will handle them on an individual basis (usually provisions for taking the exam early).

**Grade Complaints:**
Address your work in question first to the TA responsible for grading it (may be a different person for assignments and projects). Provide **a clear, brief, written explanation** of why you think you deserve additional credit.  The written statement must be provided **within one week** after the work is graded and available to the class in general.  All grade disputes must be resolved by the last day of normal classes (before finals week).

**Tentative Course Outline:**

| Week of | Topics | Exams | Assignments/Project |
|---------|--------|-------|---------------------|
| Jan. 7 | Introduction, Reading  Data | | |
| Jan. 14 | Modified Read, Calculations, Ext. Data | | Starter Assignment due 1/17 |
| Jan. 21 | Conditional Proc., Special Data Types | | Assignment #1 due 1/24 |
| Jan. 28 | Combining Data, SQL for Data Mgt. | | Assignment #2 due 1/31 |
| Feb. 4 | Dates, Functions, Normal Dist. | | |
| Feb. 11 | **Exam 1,** Rounding, Charting | **Feb. 11** | Team Sign-Ups 2/14 |
| Feb. 18 | Basic Stats, Iterative Methods | | **Project A due 2/21** |
| Feb. 25 | Simulations, Arrays, Graphics | | Assignment #3 due 2/28 |
| Mar. 3 | Scatterplots, More Stat. Graphics | | Assignment #4 due 3/6 |
| Mar. 10 | Macros, Hypothesis Testing | | |
| Mar. 17 | *Spring Break* | | |
| Mar. 24 | ANOVA, Correlation | | **Project B due 3/27** |
| Mar. 31 | Regression, Chi-square | | Assignment #5 due 4/3 |
| Apr. 7 | Project C Set-up, **Exam 2** | **Apr. 9** | |
| Apr. 14 | Project Time, Project C Presentations | | **Project C Pres. 4/16** |
| Apr. 21 | Project C Presentations | | **Project C Pres. 4/21 or 4/23** |
| | Project Materials Uploaded | | Project Materials due 4/23 |
| Apr. 30 | Project C Presentations if necessary | | |

**Certificate in *SAS Programming and Data Analysis:*** This is the core course that is required (plus three elective courses) for the SAS Programming and Data certificate jointly sponsored by FSU and the SAS Institute.  **Students** interested in the program **must apply to the program before** the end of the semester in which **the second course in the program is taken**. In addition, a portfolio is required to be submitted in the last semester of program and a representative assignment and/or project from this course must be included. For more details see http://stat.fsu.edu/sas-certificate.

**Computer Competency for Statistics Majors:** In order to fulfill FSU's Computer Competency Requirement, the student must earn a "C-" or better in the course.

**University Attendance Policy:** Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

**Academic Honor System:**  The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students' academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to ". . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at http://fda.fsu.edu/Academics/Academic-Honor-Policy.)

**Americans with Disabilities Act:** Students with disabilities needing academic accommodation should:
(1) register with and provide documentation to the Student Disability Resource Center; and
(2) bring a letter to the instructor indicating the need for accommodation and what type.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center
874 Traditions Way
108 Student Services Building
Florida State University
Tallahassee, FL 32306-4167
(850) 644-9566 (voice)
(850) 644-8504 (TDD)
sdrc@admin.fsu.edu
http://www.disabilitycenter.fsu.edu/

**Syllabus Change Policy:**  Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.