

**THE UNIVERSITY OF TEXAS AT EL PASO**  
**COLLEGE OF SCIENCE**  
**DEPARTMENT OF MATHEMATICAL SCIENCES**

Course #: STAT 4329 + 5329  
Course Title: Statistical Programming  
Credit Hrs: 3  
Term: Summer 2020  
Course Meetings & Location: Online  
Prerequisite Courses: Department Approval Required  
Course Fee: (if applicable) NA  
Instructor: Youngjoo Cho  
Office Location: Bell Hall 211  
Contact Info: 744-6856 # Phone number  
[ycho@utep.edu](mailto:ycho@utep.edu) E-mail address  
744-6502 Fax #

Office Hrs: By appointment  
Textbook(s), Materials: Required: none  
Suggested: The Art of R Programming,  
Matloff

Applied Statistics and the  
SAS® Programming  
Language (5th Edition)  
Ronald P. Cody & Jeffrey K. Smith

Course Objectives (Learning Outcomes): Introduces students to the principles and concepts of programming in R and SAS studio. Students will be able to manipulate data, create summary reports and lists, edit and interactively debug code, manage complex data sets, transform and generate data, create effective graphics for data visualization, create user-defined functions and handle various data formats in R and SAS studio.

Course Activities/Assignments: Each week will require one or two lab works completed by the end of the week. Additionally, weekly assignments are given. A midterm exam for R and final project by R or SAS studio will also be administered during the semester.

There will be a mid-term exam and final project. Lab works are graded for completeness only.

Course Schedule: Week 1: R Intro, help and packages, vectorized calculations, matrices and arrays, lists and data frames, programming structures  
Week 2 : simulations and efficient programming, permuting and bootstrapping, creating R functions, MIDTERM EXAM (take home)  
Week 3: SAS Introduction: basics, variables, and operators, data and proc steps and data visualization,  
Week 4: Regression, regression diagnostics, analysis of variance  
Week 5 : FINAL Project

Grading Policy: 20% Lab assignments  
20% Midterm Exam  
20% Final Project  
40% Homework Assignments (about 4-5)

Make-up Policy: If the class is missed for a valid and documented reason, the lab assignments may be made-up for full credit. All other assignments must be turned in on time.

Attendance Policy: You are expected to attend class so that you may turn in the in-class assignments and homework assignments.

Academic Integrity Policy: Please see <http://academics.utep.edu/Default.aspx?tabid=23785>

Civility Statement: This is a class where participation is required. You will be seated in front of a computer all class period and you are expected to follow the lecture/discussion and at various times complete in-class assignments. You are not to browse the internet during class time or work on any other material. If you regularly do not complete in-class assignments in a satisfactory manner, participate in class, or if you work on other material in class you will have points deducted from your in-class assignments portion of your grade.

Disability Statement: If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148 or at <dss@utep.edu> or go to Room 106 Union East Building. The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

**Military Statement:** If you are a military student with the potential of being called to military service and /or training during the course of the semester, you are encouraged to contact me as soon as possible.

**UTEP College of Science Policies:** The UTEP Summer 2020 drop deadline is June 26, 2020. The College of Science will remain aligned with the University and not approve any drop requests after that date.

All grades of Incomplete must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to month based upon completion data. A grade of Incomplete is only used in extraordinary circumstances confined to a limited event such as a missed exam, project, or lab. If the student has missed a significant amount of work (e.g. multiple assignments or tasks), a grade of Incomplete is not appropriate or warranted.

Criterion	Approx. % of Grade	Excellent (100%)	Adequate (80%)	Poor (60%)	Not Met (0%)
<b>Program Specifications / Correctness</b>	50%*	No errors, program always works correctly and meets the specification(s).	Minor details of the program specification are violated, program functions incorrectly for some inputs.	Significant details of the specification are violated, program often exhibits incorrect behavior.	Program only functions correctly in very limited cases or not at all.
<b>Readability</b>	20%	Code is clean, understandable, and well-organized.	Minor issues with consistent indentation, use of whitespace, variable naming, or general organization.	At least one major issue with indentation, whitespace, variable names, or organization.	Major problems with at three or four of the readability subcategories.
<b>Documentation</b>	5%	Code is well-commented.	One or two places that could benefit from comments are missing them <b>or</b> the code is <i>overly</i> commented	File header missing, complicated lines or sections of code uncommented or lacking meaningful comments.	No file header or comments present.
<b>Code Efficiency</b>	20%	Code uses the best approach in every case.	Code uses poorly-chosen approaches (though correct in result) in at least one place.	Code uses poorly-chosen approaches (though correct in result) in at least two places.	Many things in the code could have been accomplished in an easier, faster, or otherwise better fashion.
<b>Assignment Specifications</b>	5%	No errors	Minor details of the assignment specification are violated, such as files named incorrectly or extra instructions slightly misunderstood.	Minor details of the assignment specification are violated, such as files named incorrectly or extra instructions significantly misunderstood.	Significant details of the specification are violated, such as extra instructions ignored or entirely misunderstood .