

Statistical Computing (3)

(Effective Spring 2019)

Prerequisite: Stat 325.

Catalog Description: Programming with major statistical software packages. Emphasizes the use of computers to perform statistical procedures and the interpretation of statistical output.

Goal: The course prepares students majoring in the mathematical sciences for careers involving Statistics. Since statistical computing is performed in all disciplines, this course should benefit students from many disciplines including engineering, agriculture, business and education in obtaining and interpreting results from their data using the statistical software package.

Learning Outcomes for Major: This course addresses one or more of the student learning outcomes for the major.

Upon completion of his/her degree from the University of Tennessee at Martin with a major in mathematics, the graduate will be able to:

- i. apply mathematical concepts and principles to perform numerical and symbolic computations.
- ii. use technology appropriately to investigate and solve mathematical and statistical problems.
- iii. write clear and precise proofs.
- iv. communicate effectively in both written and oral form.
- v. demonstrate the ability to read and learn mathematics and/or statistics independently.

Teaching Objectives: The student will:

1. Have acquired the basic skills to input data into the statistical software package.
2. Be able to manipulate and analyze the data using the statistical software package.
3. Be able to obtain output for various statistical procedures using the statistical software package.
4. Be able to interpret the output from the statistical software package.

Text(s): The Little SAS Book, Fifth Edition, L.D. Delwiche and S.J. Slaughter, SAS Institute Publishing, 2012. ISBN: 978-1612903439.

Outline:	Chapter	Title (Sections)	Days
	2	Describing Data (A–J)	4
	3	Analyzing Categorical Data (A–P)	4
	4	Working with Date and Longitudinal Data (A–E)	3
	5	Correlation and Regression (A–L)	4
	6	T-tests and Nonparametric Comparisons (A–F)	3
	7	Analysis of Variance (A–H)	4
	12	The SAS INPUT Statement	3
	13	External Files : Reading and Writing Raw and System Files	4
	14	Data Set Subsetting, Concatenating, Merging, and Updating	3
	17	A Review of SAS Functions : Part I (A–F)	3
	18	A Review of SAS Functions Part II (A–P)	4
	19	Selected Programming Examples (A–U)	3
	20	Syntax Examples	
		Total days	42

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