

**The Ohio State University  
Colleges of the Arts and Sciences New Course Request**

Department of Statistics

Academic Unit  
Statistics

Book 3 Listing (e.g., Portuguese)  
574 Introduction to SAS Software

Number Title U G 03  
INTRO TO SAS

18-Character Title Abbreviation Level Credit Hours

Summer Autumn Winter Spring X Year 2008

Proposed effective date, choose one quarter and put an "X" after it; and fill in the year. See the OAA curriculum manual for deadlines.

**A. Course Offerings Bulletin Information**

Follow the instructions in the OAA curriculum manual. If this is a course with decimal subdivisions, then use one New Course Request form for the generic information that will apply to all subdivisions; and use separate forms for each new decimal subdivision, including on each form the information that is unique to that subdivision. If the course offered is less than a quarter or a term, please complete the Flexibly Scheduled/Off Campus/Workshop Request form.

Description (not to exceed 25 words): Inputting data, date manipulation and calculations, data presentation and reports, graphical displays, data and character data, formatting, macro programming, basic statistical procedures.

Quarter offered: Spring Distribution of class time/contact hours: 03

Quarter and contact/class time hours information should be omitted from Book 3 publication (yes or no):

Prerequisite(s): Statistics 529 or equivalent or permission of instructor

Exclusion or limiting clause: None

Repeatable to a maximum of  0  credit hours.

Cross-listed with:

Grade Option (Please check): Letter  S/U  Progress  What course is last in the series? \_\_\_\_\_

Honors Statement: Yes  No  GEC: Yes  No  Admission Condition  
Off-Campus: Yes  No  EM: Yes  No  Course: Yes  No

Embedded Honors Statement: Yes  No   
Service Learning Course\*: Yes  No  \*To learn more about this option, please visit  
<http://artsandsciences.osu.edu/currofc/>

Other General Course Information:

(e.g. "Taught in English." "Credit does not count toward BSBA degree.")

**B. General Information**

Subject Code 270599 Subsidy Level (V, G, T, B, M, D, or P) D  
If you have questions, please email Jed Dickhaut at [dickhaut.1@osu.edu](mailto:dickhaut.1@osu.edu).

1. Provide the rationale for proposing this course:  
 See attached sheets

2. Please list Majors/Minors affected by the creation of this new course. Attach revisions of all affected programs. This course is (check one):  Required on major(s)/minor(s)  A choice on major(s)/minors(s)  
 An elective within major(s)/minor(s)  A general elective:

3. Indicate the nature of the program adjustments, new funding, and/or withdrawals that make possible the implementation of this new course.

Enrollment in course will provide sufficient funding  
to support the course

4. Is the approval of this request contingent upon the approval of other course requests or curricular requests?

Yes  No  List: \_\_\_\_\_

5. If this course is part of a sequence, list the number of the other course(s) in the sequence: \_\_\_\_\_

6. Expected section size: 30 Proposed number of sections per year: 1

7. Do you want prerequisites enforced electronically (see OAA manual for what can be enforced)? Yes  No

8. This course has been discussed with and has the concurrence of the following academic units needing this course or with academic units having directly related interests (List units and attach letters and/or forms):

Not Applicable

9. Attach a course syllabus that includes a topical outline of the course, student learning outcomes and/or course objectives, off-campus field experience, methods of evaluation, and other items as stated in the OAA curriculum manual and e-mail to [ascurofc@osu.edu](mailto:ascurofc@osu.edu).

**Approval Process** The signatures on the lines in ALL CAPS (e.g. ACADEMIC UNIT) are required.

1. Academic Unit Undergraduate Studies Committee Chair	<u>William Notz</u> WILLIAM NOTZ	<u>10/22/07</u>
2. Academic Unit Graduate Studies Committee Chair	<u>Elizabeth A. Stasny</u> ELIZABETH A. STASNY	<u>10-22-07</u>
3. ACADEMIC UNIT CHAIR/DIRECTOR	<u>Douglas A. Wolfe</u> DOUGLAS A. WOLFE	<u>10/22/07</u>

4. After the Academic Unit Chair/Director signs the request, forward the form to the ASC Curriculum Office, 4132 Smith Lab, 174 West 18<sup>th</sup> Ave. or fax it to 688-5678. Attach the syllabus and any supporting documentation in an e-mail to [ascurofc@osu.edu](mailto:ascurofc@osu.edu). The ASC Curriculum Office will forward the request to the appropriate committee.

5. COLLEGE CURRICULUM COMMITTEE	Printed Name	Date
6. ARTS AND SCIENCES EXECUTIVE DEAN	Printed Name	Date
7. Graduate School (if appropriate)	Printed Name	Date
8. University Honors Center (if appropriate)	Printed Name	Date
9. Office of International Education (if appropriate)	Printed Name	Date
10. ACADEMIC AFFAIRS	Printed Name	Date

**Statistics 574 – Introduction to SAS Software  
Department of Statistics, Spring Quarter 2008**

**3 Credit Hours**

**Michael A. Fligner**

**Rationale**

This course is intended to introduce both Undergraduates and Graduates students to SAS (Statistical Analysis System) software. Our current sequence covering the SAS programming language is Stat 674-675. This sequence has no statistical prerequisites, but focuses instead on some of the more sophisticated programming and data manipulation techniques required in industry for SAS programmers. This level of training is essential for our Masters and PhD students.

In the Spring of 2006 a graduate minor in Statistical Data Analysis was approved by OAA, and in the Spring of 2007 a revised undergraduate minor in Statistics was approved. Many undergraduates and graduate students, either working on these Minor degrees in statistics or having some familiarity with statistical methodology, would benefit from a course which covered the programming techniques at a more elementary level and also included an introduction to some of the basic SAS procedures for data analysis. The goal of this course is to prepare these students to use SAS for their own data analysis or research.

**Course Overview**

This course introduces the student to the SAS language through practical examples. The concepts are reinforced through homework problems and small projects. The data step is discussed in great detail for both getting data into SAS and data manipulation and processing. Importing data from other formats such as spreadsheets and databases will be discussed. Data presentation using custom reports, descriptive statistics and graphical techniques is presented. SAS procedures for carrying out basic data analyses include the one- and two-sample problem, cross classified data, one-way ANOVA and simple linear regression. Macro programming is introduced to allow students to write more flexible code.

**Topics**

- **Getting Started Using SAS**
  - Terminology and Basic Syntax
  - SAS windowing environment
  - Types of data

- **Getting Data into SAS**
  - Reading raw data
  - Temporary and permanent SAS data sets
  - Reading Excel and Access files
  - Exporting data
- **Working with Data**
  - Creating and redefining variables
  - SAS functions
  - Conditional Execution
  - Array processing
- **Sorting, Printing and Summarizing Data**
  - Writing reports with PROC REPORT and PROC PRINT
  - Standard and custom formats for data
  - Tabular reports with PROC TABULATE
  - Summarizing data with PROC MEANS
- **SAS/GRAPH Basics**
  - Bar and Pie Charts
  - Scatter Plots
  - Working with Maps
  - Annotate data sets
- **Character Data**
  - Character Data Principles
  - Character Expressions
  - Character Handling Functions
- **Modifying and Combining SAS Data Sets**
  - The SET statement
  - Merging data sets
  - Outputting multiple data sets
  - Transposing Data sets
- **Basics of the Macro Facility**
  - Macro variables
  - Macro programs
  - Adding parameters to macro programs

- **Output Delivery System**
  - Output Delivery System Concepts
  - HTML, RTF and Printer Output
  - Output objects, restricting output and output data sets
  
- **Basic Statistical Procedures**
  - Single variable with PROC UNIVARIATE
  - One and two-sample problems
  - Categorical data with PROC FREQ
  - Simple linear regression with PROC REG
  - One-way Analysis of Variance with PROC ANOVA

### **Prerequisites**

Stat 529 or equivalent, or permission of the instructor. To be successful in this course, a student should be familiar with descriptive statistics, one- and two-sample problems, cross classified data, oneway ANOVA and simple linear regression.

### **Evaluation**

- 60% Homework and Projects
- 20% Midterm
- 20% Final Exam
  
- 90%-100% A
- 80%-90% B
- 70%-80% C
- 60%-70% D
- <60% F

### **Required Textbook**

The Little SAS Book, by Lora D. Delwiche and Susan J. Slaughter.

### **Special Accommodations**

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. You should also contact the Office of Disability Services (292-3307) in 150 Pomerene Hall to coordinate reasonable accommodations for students with documented disabilities.

## **Academic Misconduct**

Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. You are expected to produce original and independent work for quizzes and exams. Although students are often encouraged to work together on homework assignments, all students must submit their own written work in their own words. Academic misconduct **will not be tolerated** and will be dealt with procedurally in accordance with University Rule 3335-31-02.