**STA537: Advanced Statistical Programming using SAS**

**Classroom:** 25 University Ave

**Office Hours**:

**Instructor**:

**Office**:

**Phone**:

**Fax:**

**E-mail**:

**Class Website:** d2l.wcupa.edu

**Graduate Assistant:**

**Required Texts**:

SAS Institute Inc. 2011. *SAS Certification Prep Guide: Advanced Programming for SAS 9, 3rd edition*. Cary, N: SAS Institute

**Supplemental Texts**:

Carpenter, Art. 2004. *Carpenter’s Complete Guide to the SAS Macro Language, 2nd edition*. Cary, NC: SAS Institute

Delwiche and Slaughter, 2012. *The Little SAS Book*, *5th edition*, SAS Publishing, Cary, NC

Dinsmore, Paul. 2007. *SAS Base Programming Certification Study Guide* (may be downloaded free of charge at<http://www.cs.wcupa.edu/~pdinsmore/sasbook.zip> )

Prairie, Katherine. 2005. *The Essential Proc SQL Handbook for SAS Users*. Cary, NC: SAS Institute.

SAS Institute, Inc. 2004. *SAS Macro Language: Reference, Version 9*. Cary, NC: SAS Institute.

Schreier, Howard. 2008. *Proc SQL by Example*. Cary, NC: SAS Institute

**SAS Software**

The SAS Statistical software package is available free to any West Chester University student. As part of the licensing agreement, upon graduating from or leaving WCU, the software will expire and no longer be available for the student's use.

In addition, the SAS software (and other statistical packages) will be available on all computers in the Applied Statistics Laboratory.

**Evaluation Option 1**: Exam 1 (in class) 30 pts

Final Exam (take home) 50 pts

Homework 10 pts

Participation 10 pts

**Evaluation Option 2**: Exam 1 (in class) 25 pts

Final Exam (take home) 45 pts

Homework 10 pts

Participation 10 pts

Final Project 10 pts

\*Because this is the first time this course is being offered, there is the possibility of restructuring of evaluation based upon possible changes in assignments and/or exams. Any changes will be discussed and clearly explained to the class.

**Class Rules:**

* While you are strongly encouraged to discuss aspects of problems and assignments with classmates, the write-up of all assignments and the actual programming MUST be done independently **under the guidelines of the Honor Code**. If you have questions, Dr. Rieger or the Graduate Assistants will be glad to help you. (See Academic Integrity section below.)

1. On take-home examination assignments, **students must work independently under the guidelines of the Honor Code.** If you have questions, Dr. Rieger will be glad to help you. (See Academic Integrity section below.)
2. Missed exams can only be made up with a valid, verifiable, written university-approved excuse and must be made up within a week of the originally-scheduled exam.
3. Late or missing homework assignments will only be excused by a valid, verifiable, written university-approved excuse.
4. Active usage of cell phones and other similar devices are not allowed in class. If you need to use these devices, please leave the classroom or wait until the break. Violation of this policy will result in deductions from your ‘participation’ grade.
5. Students engaging in disruptive behavior will be dealt with according to university policy. Students are encouraged to consult the undergraduate catalog for details of this policy: <http://www.wcupa.edu/_INFORMATION/OFFICIAL.DOCUMENTS/Undergrad.Catalog/acpolpro.htm#disruptive>
6. In the event that I am unable to meet a class, I will a) notify you in person or via e-mail at a prior time or b) an official class cancellation notification on the stationary of the Department of Mathematics, signed and date stamped by the Department Secretary (Barbara Maleno) will be posted on the classroom door. All other postings announcing the cancellation of this class are to be considered unofficial and are to be ignored. In the case of a cancelled class, attempts will be made to re-schedule the class for another date.
7. Students should bring a storage device to each class to save any relevant lab work.

**ACADEMIC INTEGRITY**

It is the responsibility of each student to adhere to the university’s standards for academic integrity. Violations of academic integrity include any act that violates the rights of another student in academic work, that involves misrepresentation of your own work, or that disrupts the instruction of the course. Other violations include (but are not limited to): cheating on assignments or examinations; plagiarizing, which means copying any part of another’s work (including homework) and/or using ideas of another and presenting them as one’s own without giving proper credit to the source; falsifying of information.. Proof of academic misconduct can result in the automatic failure and removal from this course and Program.

For questions regarding Academic Integrity, the No-Grade Policy, Sexual Harassment, or the Student Code of Conduct, students are encouraged to refer to the Mathematics Department’s Handbook, the Graduate Catalogue, the Ram’s Eye View, and the University website at www.wcupa.edu.

**EMERGENCY PREPAREDNESS**

All students are encouraged to sign up for the University’s free WCU ALERT service, which delivers official WCU emergency text messages directly to your cell phone. For more information and to sign up, visit www.wcupa.edu/wcualert. To report an emergency, call the Department of Public Safety at 610-436-3311.

**AMERICANS WITH DISABILITIES ACT**

If you have a disability that requires accommodations under the Americans with Disabilities Act (ADA), please meet with me as soon as possible so that I can support your success in an informed manner. If you would like to know more about West Chester University’s services for students with disabilities, please contact the Office of Services for Students with Disabilities which is located at 223 Lawrence Center and can be reached at 610-436-3217 and at ossd@wcupa.edu.

**Tentative Schedule**

Notes: Assignments are subject to revision and re-scheduling.

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| **Class** | **DATE** | **Topics** |
| 1 |  | Introduction / Class Overview  Introduction to SQL |
| 2 |  | SAS SQL |
| 3 |  | PROC SQL – Combining Data Vertically |
| 4 |  | PROC SQL  Combining Data Horizontally |
| 5 |  | PROC SQL  Creating and modifying Datasets Using SQL |
| 6 |  | PROC SQL  In Line Views |
| 7 |  | EXAM I |
| 8 |  | SAS Macro Programming |
| 9 |  | SAS Macro Programming |
| 10 |  | SAS Macro Programming |
| 11 |  | Modifying SAS Datasets and Tracking Changes |
| 12 |  | SAS Programming for Clinical Trials  Using Best Practices  Efficient Sorting Strategies |
| 13 |  | Efficient SAS Programming  Controlling Memory Usage |
| 14 |  | SAS/Graph  Using Direct Access Methods  SASFILE command |