Course Module
Stephen F. Austin State University
STAT 5341-001 [MATH 4195-002] Statistical Analysis II
Bush (Math Bldg) 208 MTWR 10:00-11:40AM

Instructor
Robert (Bob) Henderson
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BA in Math & History – Trinity University, San Antonio, TX (1978)
MS in Mathematical Statistics – Southern Methodist University, Dallas, TX (1980)
PhD in Mathematical Statistics – Southern Methodist University, Dallas, TX (1982)
MBA – University of Delaware, Newark, DE (1988)
Worked in industry for 27 years, 6 years with DuPont as internal consultant for a variety of businesses and staff groups, then 21 years in the semiconductor business, most with a supplier of a key enabling material for semiconductor production, and later with Samsung working primarily with engineers in process control efforts. The entire 27 years included many training delivery, as well as course development activities related to basic statistics, experimental design, and process control systems. Fall of 2009 was first semester at SFA.

Teaching Hours – 10:00AM to 11:40AM & 12:00PM – 1:40PM MTWR
Office Hours – 11:40AM-12:00PM MTW 2:00PM-4:00PM MTW, and by appointment

Course Goals
This course ideally will provide students with an introduction to and understanding of basic linear models, good experimental design practices, variance component analysis, and simple to advanced statistical process control procedures.

Text
None

Computer Access/Skills
This course is largely applied in nature; consequently, it will be helpful to have some facility in working with data using a computer. The course work will be greatly facilitated with the use of a statistical software package (JMP is one such package, as is R). Knowledge of and ability to utilize Microsoft Office programs – Excel, Word, and Powerpoint – will also often be beneficial. Almost all workplaces expect some skills in working with these packages, and use them for reporting and/or presentation purposes.

Prerequisites
STAT 5340 or equivalent

Course Syllabus
The official course syllabus can be found at:
http://www2.sfasu.edu/math/courses/syllabi/STA521Syllabus.pdf
Course Overview

Sessions 1-2: Review of 1-way Analysis of Variance
Sessions 2-4: Development of 2-way Analysis of Variance
Sessions 4-6: Introduction to Factorial Designs (including Class Exercise)
Sessions 6-7: Strategy of Experimentation
Sessions 8-10: Screening Designs (including Workshop 1)
Sessions 10-12: Response Surface Designs (including Workshop 2)
   - Mid-Term Exam
Sessions 13-14: Variance Component Analysis
Sessions 14-16: Mixed Effects Analysis of Variance (including Workshop 3)
Sessions 16-18: Basic Statistical Process Control
Sessions 18-20: Advanced Statistical Process Control (including Workshop 4)
Sessions 21-22: Mixture Designs
Sessions 22-24: Mixture Experiment (including Workshop 5)
   - Final Exam

Grading
Grades will be determined by the following:

Homework 10%
Workshop/Class Exercises 50%
Mid-Term 20%
Final 20%

About Assignments
Homework problems will be assigned and periodically collected (not necessarily all will be collected). When collected, one or two of the assigned problems (likely not all) will be selected for grading.

There will be 5 to 6 in-class workshops/class exercises. Students will work in small groups on specific assigned projects, and then present their results/reports to the class. The presentations will be evaluated by the instructor. In addition, some form of student feedback on the workshops will be solicited.

Attendance
This is a graduate level class, and I do not expect attendance issues. Since a significant proportion of the evaluation is based on in-class activities, missing a class is not desirable. However, all classes where relevant material is reviewed will be recorded and links to the recordings will be uploaded to D2L. If you know you are going to have to miss a specific class, please let me know via e-mail or phone prior to the class.

Academic Integrity
It is the responsibility of the student to abstain from cheating. Dishonesty of any kind with respect to examinations, written assignments [completed] in or out of class, alteration of records, or illegal possession of current examinations or keys to examinations shall be considered cheating. Courtesy and honesty require that any ideas or materials borrowed from another must be fully acknowledged. Offering the work of another as one’s own is plagiarism. The subject matter of ideas thus taken from another may range from a few sentences or paragraphs to entire articles copied from books, periodicals, or the writing of other students. The offering of materials assembled or collected by others in the form of projects or
collections without acknowledgment is also considered plagiarism. Any student who fails to give credit for ideas or materials taken from another is guilty of plagiarism.

Definition of Academic Dishonesty

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. (from SFA on-line Student Handbook)

A full description of university procedures and penalties in response to cheating and plagiarism can be found in the on-line Student Handbook in the Academic Integrity section at http://www.sfasu.edu/policies/academic_integrity.asp.

Withheld Grades
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

Students with Disabilities
In accordance with University policy, students with disabilities who need accommodations are expected to initiate a meeting with the professor immediately upon registering with Disability Services to discuss how accommodations included on the Special Accommodation Request form will be provided. Students with disabilities who may have special needs and have not requested support services should seek assistance through Disability Services. The Office of Disability Services (ODS) is located in the Human Services Building, room 325, and can be contacted by phone at 468-3004 / 468-1004 (TDD). Failure to request services in a timely manner may delay appropriate accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Acceptable Student Behavior
Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. This prohibition applies to all instructional forums, including electronic, classroom, labs, discussion groups, field trips, etc. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program. This program provides students with recommendations for resources or other assistance that is available to help SFA students succeed.