

Syllabus: STAT 3380.01 Statistical Design and Analysis of Experiments, Fall -2017

Instructor:	Ram C. Kafle, Ph.D.
Contact:	rck020@shsu.edu, (936-294-3925)
Class Hours:	MWF 1:00 PM - 1:50 PM in LDB 415
Office Hours:	MW 8:00 AM - 10:00 AM, Friday 11:00 AM-1:00 PM in LDB 439F or by appointment

Textbook and Materials:

Fundamental Concepts in the Design of Experiments, Fifth Edition by Charles R. Hicks and Kenneth V. Turner, Jr. , ISBN 978-0-19-512273-2, Oxford.

Course Objectives:

The learning outcomes for this course shall include but not limited to the following:

1. Develop fundamental concepts in the design and analysis of experiments..
2. Gain an experience in statistical software (R and SAS) for analyzing the data from different real experimental studies.
3. Gain knowledge on planning different types of experimental design techniques to meet specified objectives.
4. Develop proficiency in planning and perform experiments to ensure that the data collection activities are right and a sufficient sample size and power are available to answer the research questions.
5. An understanding of the reasoning by which finding from experimental data can be used for statistical inference.

Course Description:

Introduction to the design and analysis of experiments, Review of Statistical Inference, Single-Factor Experiments with no restrictions on Randomization, Randomized Block Design, Latin Square Design, Factorial Experiments, Fixed, Random, and Mixed models, Nested and Nested-Factorial Experiments. More focus will be given in SAS statistical software program to hand the analysis phase of experiment, design and analysis based on real

world problems from different fields. We will spend ample amount of time in clarifying the basic concepts by illustrating varieties of examples.

Attendance:

Class attendance is extremely important to succeed in this course. Roll will be taken at class meetings periodically. Two percentages will be added to the overall score for the students having NO more than 3 absences for the entire semester. Factors like class participation and obeying all the classroom rules are also considered for these two extra percentages. Late arrival, leaving class early and forgetting to sign the roll sheet are counted as absences. Also, you are responsible to cover or collect the course materials for any class you missed.

Quizzes:

Quizzes are given at the beginning of the quiz day for about 15-20 minutes. The quizzes will be closed book and closed notes. There will be no make-up quizzes. Please refer to the academic calendar given at the last page of this syllabus for tentative quiz dates.

Homework:

Homework problems offer practices for applying course materials and it is an effective way for mastering the course materials. Homework from text and homework based on statistical software will be assigned for each chapter. Some additional homework problems may be assigned during the lecture based on the content of the course materials. Late homework will not be entertained.

Exams:

Three midterms (15% each) and a cumulative final (compulsory) will be given during the semester. The cumulative final will carry 15% of the total grades. The lowest one midterm grade will be replaced by final if your final percentage grade is greater than lowest midterm grade.

Project:

The Project will be assigned based on the real world data and will be due on the last day of the class. The project will be graded based on the statistical analysis and clarity in reporting. The detail descriptions of the project will be posted in Blackboard during the mid-semester.

Tentative Exam Dates:

Midterm-I	Midterm - II	Midterm - III	Final (Cumulative)
September 22, Friday	October 27, Friday	November 20, Monday	Dec 06, Wednesday 2:30 PM - 4:30 PM

Grading Policy:

Homework	15 %
Quizzes	15 %
Midterm	45 %
Project	10 %
Final	15 %
Total	100 %

Grading Scale:

90% or above	A
80%-89%	B
70%-79%	C
60%-69%	D
Below 60%	F

Important Dates:

Semester	Aug 23- Dec 01
Final Exam Week	Dec 04- Dec 07
Holiday (No classes)	Sept 04,
Last day to drop Full Term Courses without Q and 100% refunds	Sept 11
Last day to drop Full Term course with Q	Nov 10
Thanksgiving holidays	November 22 -24

Classroom Etiquette:

Classroom behavior that interferes with (a) the instructors ability to conduct the class or (b) the ability of students to benefit from instruction is not acceptable. Examples of such behaviors include routinely entering the class late or departing early; use of beepers, cellular phones, or other electronic devices; repeatedly talking in class without being recognized. If a student must carry a beeper/cell phone to class, prior notice and approval of the instructor is required.

Make up Exam Policy:

Make-up exams will only be given for excused absences. Reasons for excused absences include documented illness, deaths in the immediate family and other documented crises, call to active military duty, court-imposed legal obligations (e.g., jury duty and subpoenas), religious days, special requirements of other courses and university sponsored events (e.g., performances, games/meets, judging trips, field trips), and severe weather conditions. Students must notify their instructors in writing of scheduled absences (for approved reasons as noted above) at the beginning of each academic term. Pointing out specific conflicts with scheduled examinations or other scheduled assignments/activities should be part of this notification. In the event of an emergency unscheduled absence (as described above), students must contact their instructors as soon as possible and provide documentation.

Academic Dishonesty:

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including, but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of resource materials. The university policy and procedures in case of alleged academic dishonesty is

explained in Academic Policy Statement 810213:
<http://www.shsu.edu/dotAsset/728eec25-f780-4dcf-932c-03d68cade002.pdf>

Incomplete Grade Policy:

An "X" grade indicates incomplete coursework and may be awarded students. See full policy at <http://www.shsu.edu/gradcat/scholasticrequirements.html>

Student Disability Policy:

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. See the university policy at:
<http://www.shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf>

Religious Holidays:

University policy states that a student who is absent from class for the observance of a religious holiday must be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence. Students must be excused to travel for observance of a religious holiday. A student who wishes to be excused for a religious holiday must present the instructor with a written statement describing concerning the holiday and the travel involved. The instructor should provide the student with a written description of the deadline for the completion of missed exams or assignments. See the university policy for religious holidays at:
<http://www.shsu.edu/dotAsset/0953c7d0-7c04-4b29-a3fc-3bf0738e87d8.pdf>

Academic Policy Manual:

For a complete listing of the university policy, see
<http://www.shsu.edu/dept/academic-affairs/aps/aps-students.html>

Academic Calendar:

	August	September	October	November	December
Mon			2		
Tue					
Wed			4	1	
Thur					
Fri		1	6 (Quiz)	3	1 (Presentation)
Mon		4(Holiday)	9	6	
Tue					
Wed		6	11	8	6 (Final)
Thur					
Fri		8 (Quiz)	13	10	
Mon		11	16	13 (Quiz)	
Tue					
Wed		13	18	15	
Thur					
Fri		15	20 (Quiz)	17	
Mon		18	23	20 (Test-III)	
Tue					
Wed	23	20 (Quiz)	25	Thanksgiving Break	
Thur					
Fri	25	22 (Test-I)	27 (Test-II)		
Mon	28	25	30	27	
Tue					
Wed	30	27		29	
Fri		29			