COURSE OUTLINE

Instructor Information:
Jin-Hong Park, Ph.D.
Office: Room 351 Robert Scott Small
Email: parkj@cofc.edu
Office Hours: 4-5PM (Tuesday and Thursday) or by appointment

Course Meeting: Tuesday and Thursday Maybank 112 from 5:30-6:45PM

Course Description:
This course introduces the fundamentals of statistical inference including estimation, confidence intervals, and hypothesis testing. There are also more advance topics which are linear models and basic experimental design. In addition, the special topics such as analysis of categorical data, nonparametric statistics, time series analysis, and basic Bayesian methods are covered if time is permitted. This course is a continuation of Math 430, Mathematical Statistics I, which dealt mostly probability and distributions. Students are expected to be comfortable with the materials of MATH 430.

Course Prerequisite: MATH 430

Student Learning Outcomes:
After completing this course, students will be able to
1. Explain the importance of the statistical theory in the development of the tools of statistical inference.
2. Recognize the connection between classical and non-classical statistical theory for inference.
3. Demonstrate an understanding of mathematical proofs in the development of mathematical statistical theory.
4. Implement the statistical package R to work with statistical models.
These outcomes will be assessed on the four in-class tests and final exam.

Undergraduate Mathematics Program Learning Outcomes:
Students are expected to display a thorough understanding of the topics covered. In particular, upon completion of the course, students will be able to
1. Using algebra, geometry, calculus and other track-appropriate sub-disciplines of mathematics, students model phenomena in mathematical terms.
2. Using algebra, geometry, calculus and other track-appropriate sub-disciplines of mathematics, students derive correct answers to challenging questions by applying the models from Learning Outcome 1.
3. Write complete, grammatically and logically correct arguments to prove their conclusions.
These outcomes will be assessed on the four in-class tests and final exam.

Accommodations for Students with Disabilities:
If there is a student in this class who has a documented disability and has been approved to receive accommodations through the Center for Disability Services/SNAP (Students Needing Access Parity), please come and discuss this with me during my office hours.
College Honor Code:
Any violation of the College's Honor Code will be reported to the Honor Board. For more details, see http://studentaffairs.cofc.edu/honor-system/ and the Student Handbook at http://studentaffairs.cofc.edu/honor-system/studenthandbook/

Course Topics:
Sampling Distribution and Central Limit Theorem (Ch 7), Fundamentals of statistical inference (Ch 8–10): estimation, confidence intervals, hypothesis testing, Linear Models (Ch 11–13): Regression & ANOVA - Design of Experiments

Textbook/References: Mathematical Statistics with Applications, Wackerly, Mendenhall and Sheaffer (Duxbury), 7th Edition (NOT international 7th edition)

Calculator: Any calculator except for TI-83 or above.

Grading Policy:
1. Homework*
2. Quiz (20%) and Project (Extra Credits)**
3. Four in-class tests (20% each) and Final Exam (20%)***

A: 90 or above; A-: 87-89; B+: 83-86; B: 80-82; B-: 77-79; C+: 73-76; C: 70-72; C-: 67-69; D+: 63-66; D: 60-62; D-: 57-59; F: 56 or below

* Homework problems are all examples in the textbook. It is expected that you study by yourself at home. Not required to submit but an important course materials for Quiz, Test, and Final.
** There are 30 minutes quizzes, whose date will not be announced in advance. I STRONGLY recommend bring your calculator to all classes. Your lowest quiz will be dropped. Hence, a make-up quiz is not necessary. The short projects are take-home assignment problems.
*** Each test is 20% of your course grade. You may drop the final if you are satisfied with all your tests. Nevertheless, you cannot drop one of tests without an official excuse. I do NOT plan on giving make-up tests.

Attendance Policy:
1. Full participation in all classes is expected.
2. A student who misses five classes will get F in this course.*
3. If you are more than 10 minutes late or leave earlier, it will be counted as an absence.
   * It includes excused absences. So, you are not required to submit an excuse document or college absence memo.

Midterm Policy:
Instructor strongly recommends withdrawing this course if your midterm grade is less than 60%.

Important Dates:
January 15: MLK holiday, No class
January 16: Last day of drop/add
January 30: Test 1
February 22: Test 2 (covers the first half)
March 13: Last day for students to withdraw with a W
March 20&22: Spring Break, No classes
March 15: Test 3
April 19: Test 4 (covers the second half)
Final Exam – TBA

NOTE:
1. I will utilize email to send the course materials and announce the important schedules fairly often. Therefore it is important that you check your email regularly. I encourage you to contact me via email if you have a question that does not require an office hour visit.
2. The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.
3. The last test and final will not be returned to you based on college policy.