SPRING 2016 - MATH 350
STATISTICAL METHODS II

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Office Hours: TR 12:30-1:30 pm or by appointment.


Textbook Companion Website: media.pearsoncmg.com/aw/aw_weiss_introstats_10/cw/intro_stats_10.html

Prerequisites: Math 120 (Introductory Calculus) and Math 250 (Statistical Methods I).

Course Webpage: To post course calendar, homework assignments, and other course related information.
http://kaib.people.cofc.edu/teaching/math350.htm

OAKS: To post grades, lecture slides, solutions, study guides, etc.

Calculator: A TI-83 or TI-84 is REQUIRED for calculations in tests.

Software: A statistical software package, Minitab, will be used INTENSIVELY in this course. Minitab is available on most campus computers. Personal copies can be obtained via 30-day trial (free) or 6-month rental (for $30). We use Minitab 17 for PC, NOT Minitab Express for Mac/PC (because the Express version has only limited functions). Please visit http://www.onthehub.com/minitab/ for more details.

Course Description: The topics covered include simple linear regression and correlation, multiple regression, model building and selection, analysis of variance (ANOVA), two-way ANOVA, logistic regression, and chi-square test. Nonparametric statistics and other selected topics will be introduced as time permits. Minitab will be used to perform various statistical analyses. Students enrolling for this course should have the knowledge of descriptive statistics, probability distributions, confidence interval estimation and hypothesis testing.

Course Objective: This course is intended to introduce various popular and practically useful statistical methods that focused on “hands on” data analysis. The students are expected to understand and conduct statistical modeling by choosing appropriate procedures, and to interpret the results and draw conclusions within the context of the problem. Besides the understanding of all methods, the course features the use of the statistical software package, Minitab, to provide students the ability to handle and analyze large real data.

Undergraduate Math Program Student 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

- use algebra, geometry, calculus and other track-appropriate sub-disciplines of mathematics to model phenomena in mathematical terms,
- use algebra, geometry, calculus and other track-appropriate sub-disciplines of mathematics to derive correct answers to challenging questions by applying the models from the previous Learning Outcome, and
- write complete, grammatically and logically correct arguments to prove their conclusions.

These outcomes will be assessed on the final exam.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:

- Understand and conduct statistical modeling by using appropriate procedures.
- Understand the capabilities and limitations of statistical methods.
- Use appropriate technology, such as Minitab, to perform various statistical procedures.
- Interpret results and draw conclusions from statistical analyses.

1
Grading: Your overall grade will be calculated according to the following formula:

- Homework 12% (2% for each one)
- Lab Activities 12% (2% for each one)
- Tests (2) 46% (23% for each one)
- Final Exam 30% (Comprehensive)
- Project 5% (Extra credit work, 5 bonus points)

The lower cut-off points for your letter grades are:

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Course Policies:

1. Extra Credit: There are various extra credit opportunities in this course, such as the project, class activities, bonus assignments, etc. You earn bonus points in those opportunities. A bonus point is defined as a point to be added to your overall grade. Extra credit opportunities are used to boost your grade, not to salvage your grade.

2. Homework: Homework will be assigned after each lecture but collected biweekly.
   - Homework will be checked for only completeness and quality.
   - Answers to odd-numbered problems are included in your textbook.
   - Detailed solutions will be posted online after each collection.
   - It is your responsibility to check your homework answers against the solutions.

3. Homework and Lab Grading:
   - ‘S+’: means completed with high quality. If you get 4 or more (out of 6) ‘S+’ in the semester, you’ll earn a bonus point.
   - ‘S’: means satisfactory. You receive the full credit.
   - ‘S–’: means unsatisfactory, due to poor quality / lack of necessary work / incomplete / late / etc. You only receive half of the credit.

4. No make-up tests will be given. However, in the rare case of serious illness, injury, or death in the family, or with the approval of the instructor, the points for the missed test may be regained by a different weighting of other tests.

5. Attendance Policy: Attendance is generally required and expected. In the event of absences:
   - Excused absence: NO penalty if a student misses a class with a legitimate, documentable reason. The student need to bring documentation to the Absence Memo Office located at 67 George Street to ask for an Absence Memo sent to me. More information can be found at [http://studentaffairs.cofc.edu/about/services/absence.php](http://studentaffairs.cofc.edu/about/services/absence.php)
   - Unexcused absence: NO penalty if your overall letter grade is an ‘A’ or ‘A-’. Otherwise,
     - NO penalty for the first 3 unexcused absences.
     - Starting from the 4th unexcused absence, 5 points/absence will be deducted from one’s overall grade.
     - A grade of “WA” (Withdrawal for Excessive Absences) will be assigned if one has 8 or more unexcused absences.

6. College Honor Code and Academic Honesty Policy: All academic work must meet the standards contained in ‘The Honor Code’. Students are responsible for informing themselves about those standards before performing any academic work. More detailed information about academic honesty can be found in the Student Handbook OR via the link [http://studentaffairs.cofc.edu/honor-system/](http://studentaffairs.cofc.edu/honor-system/)