SPRING 2016 - MATH 250
STATISTICAL METHODS I

Professor: Bo Kai
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Phone: (843) 953-8017
Email: KaiB@cofc.edu

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


Prerequisite: MATH 105 with a C- or better or MATH 111 or MATH 120 or permission of instructor.

Course Webpage: To post course calendar, homework assignments, and other course related information. [http://kaib.people.cofc.edu/teaching/math250.htm](http://kaib.people.cofc.edu/teaching/math250.htm)

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

Calculator: A TI-83 or TI-84 is REQUIRED. Please bring your calculator to every class.

Software: A statistical software package, Minitab, will be used 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). Please visit [http://www.onthehub.com/minitab/](http://www.onthehub.com/minitab/) for more details.

Course Description: The topics to be covered include descriptive statistics, probability concepts, probability distributions, inferential statistics, confidence interval estimation, and hypothesis tests. Simple linear regression and correlation, analysis of variance and other selected topics will be introduced as time permits. Minitab will be used to help summarize and analyze data.

Course Objectives: This course is intended for more sophisticated audience of all majors. We will focus on both methodology and application of statistics. It provides students opportunities approaching real world problems and analyzing real data. It also prepares students for advanced courses in statistics or methodological tools in their research disciplines. An important feature of the course is the use of technology to facilitate the understanding of important statistical ideas and the implementation of real data analyses.

General Education 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
1. model phenomena in mathematical terms,
2. solve problems using these models, and
3. demonstrate an understanding of the supporting theory behind the models apart from any particular application.

These outcomes will be assessed on the final exam.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:
- Summarize data by using methods of descriptive statistics.
- Choose appropriate inferential procedures and apply them to make inferences about populations.
- 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.
Grading: Your overall grade will be calculated according to the following formula:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>12%</td>
<td>(2% for each one)</td>
</tr>
<tr>
<td>Quizzes (4)</td>
<td>18%</td>
<td>(6% for each one, the lowest one will be dropped)</td>
</tr>
<tr>
<td>Tests (2)</td>
<td>40%</td>
<td>(20% for each one)</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
<td>(Comprehensive)</td>
</tr>
<tr>
<td>Group Project</td>
<td>5%</td>
<td>(Extra credit work, 5 bonus points)</td>
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The lower cut-off points for your letter grades are:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>F</td>
<td>&lt;60</td>
</tr>
<tr>
<td>D-</td>
<td>60-63</td>
</tr>
<tr>
<td>D+</td>
<td>67</td>
</tr>
<tr>
<td>C-</td>
<td>70</td>
</tr>
<tr>
<td>C+</td>
<td>73</td>
</tr>
<tr>
<td>B-</td>
<td>77</td>
</tr>
<tr>
<td>B</td>
<td>80</td>
</tr>
<tr>
<td>B+</td>
<td>83</td>
</tr>
<tr>
<td>A-</td>
<td>87</td>
</tr>
<tr>
<td>A</td>
<td>90-93</td>
</tr>
</tbody>
</table>

Course Policies:

1. **Extra Credit:** There are various extra credit opportunities in this course, such as the project, bonus assignments, class activities, etc. You will 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 HW answers against the solutions.**

3. **Homework 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 quizzes or 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 quiz/test may be regained by a different weighting of other quizzes/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’. More detailed information about academic honesty can be found in the Student Handbook OR via the link [http://studentaffairs.cofc.edu/honor-system/]