Graduate Programs—NEW COURSE PROPOSAL

DEPARTMENT: MATHEMATICAL SCIENCES
COLLEGE: SCIENCE

RECOMMENDED COURSE IDENTIFICATION:
PREFIX STA COURSE NUMBER 6207 LAB CODE (L or C) ___

(To obtain a course number, contact phiman@fau.edu)

COMPLETE COURSE TITLE: APPLIED STATISTICAL METHODS

EFFECTIVE DATE (first term course will be offered):

CREDITS: 

TEXTBOOK INFORMATION:


GRADING (SELECT ONLY ONE GRADING OPTION): REGULAR X SATISFACTORY/UNSATISFACTORY

COURSE DESCRIPTION, NO MORE THAN THREE LINES:

Overview of normal theory inference, and categorical data methods; basic concepts of experimental design; analysis of variance and covariance; introduction to regression models and model selection procedures. Statistical software Minitab and R will be used for data analyses.

PREREQUISITES *:
STA 4443 or STA 6326 or equivalent

COREQUISITES:
NONE

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE:

PH.D. IN MATHEMATICS OR PH.D. IN STATISTICS

Faculty contact, email and complete phone number:
Lianfen Qian
Iqian@fau.edu
297-2436

Please consult and list departments that might be affected by the new course and attach comments.

N/A

Approved by:

Date: 11/9/13

1. Syllabus must be attached; see guidelines for requirements:

2. Review Provost Memorandum:
   Definition of a Credit Hour
   www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf

3. Consent from affected departments
   (attach if necessary)

Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

FAUnewcrsGrad—Revised September 2012
Syllabus

1. Course Name  Course Number  Credit Hours
   Applied Statistical Methods  STA 6207  3

2. Course prerequisites
   STA 4443 or STA 6326 or equivalent

3. Instructor
   Lianfen Qian, Office SE 244
   Phone: (561) 297-2486, fax (561) 297-2436
   E-mail address: lqian@fau.edu

4. Course description
   Overview of normal theory inference, and categorical data methods; basic concepts of
   experimental design; analysis of variance and covariance; introduction to regression models
   and model selection procedures. Statistical software Minitab and R will be used for data
   analyses.

5. Course objectives
   By finishing the course, students will be able to choose suitable statistical methods to
   analyze both numerical and categorical data. Students will be able to estimate the effects of
   possible factors on a response, to build statistical regression models and conduct model
   selection procedures. Students will be able to use statistical software packages such as
   Minitab and R for statistical analysis.

6. Lecture Schedule
   o Designs of Experiments (ca. 1 week)
     o Homework: For given research questions, design experiments to collect data
   o Introduce Software (ca. 1 week)
     o Homework: Learn Minitab and R language, write R program for given functions
   o Regression Modeling (ca. 3 week)
     o Homework: Model data sets using simple and multiple linear regression
   o Model Diagnostics (ca. 1 week)
     o Homework: Conduct residual check for exercises from previous week
   o Model Selection (ca 1 week)
     o Homework: Explore models for given data sets and select the best model for
       each given data set
   o Fixed effect models (ca. 2 weeks)
     o Homework: Analyze data from experiments using fixed effect models and begin
       final project
   o Random effect models (ca. 2 weeks)
     o Homework: Analyze data from experiments using both fixed effect and random
       effect models and compare the results and continue final project
7. Required Text


8. Supplementary/recommended readings


9. Assessment Procedure and Grading

There will be graded homework assignments accounting for 40% of your cumulative performance, a midterm exam, accounting for 30% of your cumulative performance, and a final project that accounts for 30% of your cumulative performance. Your overall grade in the course is derived from your cumulative performance according to the following table.

<table>
<thead>
<tr>
<th>Cumulative Performance</th>
<th>Grade</th>
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<tbody>
<tr>
<td>&gt; 94%</td>
<td>A</td>
</tr>
<tr>
<td>&gt; 90% - 94%</td>
<td>A−</td>
</tr>
<tr>
<td>&gt; 87% - 90%</td>
<td>B+</td>
</tr>
<tr>
<td>&gt; 83% - 87%</td>
<td>B</td>
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<tr>
<td>&gt; 80% - 83%</td>
<td>B−</td>
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<tr>
<td>&gt; 75% - 80%</td>
<td>C+</td>
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<tr>
<td>≥ 65% - 75%</td>
<td>C</td>
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<tr>
<td>&gt; 60% - 65%</td>
<td>C−</td>
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<tr>
<td>&gt; 57% - 60%</td>
<td>D+</td>
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<tr>
<td>&gt; 53% - 57%</td>
<td>D</td>
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<tr>
<td>≥ 50% - 53%</td>
<td>D−</td>
</tr>
<tr>
<td>&lt; 50%</td>
<td>F</td>
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</tbody>
</table>

10. Incomplete Grades

A grade of I (incomplete) will only be given under certain conditions and in accordance with the academic policies and regulations put forward in FAU’s University Catalog. The student has to show exceptional circumstances why requirements cannot be met. A request for an incomplete grade has to be made in writing with supporting documentation, where appropriate.
11. Makeup Tests and Extra Credit

If you cannot attend an exam or hand in a homework project in time due to a relevant reason like significant health problems or being involved in a major traffic accident, and you document this, then you can make up the respective assignment.

Extra credit work is not possible.

12. Method of Instruction

The course is conducted in lectures combined with lab sessions. Assignments may require the use of a statistical software package such as Minitab or R language. Unless otherwise specified, for those assignments you can use statistical package of your choice.

13. Disability policy statement

In compliance with the Americans with Disabilities Act (ADA), students who require special accommodations due to a disability to properly execute coursework must register with the Office for Students with Disabilities (OSD) located in Boca Raton - SU 133 (561-297-3880), in Davie - MOD I (954-236-1222), in Jupiter - SR 117 (561-799-8585), or at the Treasure Coast - CO 128 (772-873-3305), and follow all OSD procedures.

14. Honor Code policy statement

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see University Regulation 4 001 at http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf