FLORIDA ATLANTIC UNIVERSITY

Graduate Programs—NEW COURSE PROPOSAL

DEPARTMENT: MATHEMATICAL SCIENCES
COLLEGE: SCIENCE

RECOMMENDED COURSE IDENTIFICATION:
PREFIX STA COURSE NUMBER 6177 LAB CODE (L or C)
(TO OBTAIN A COURSE NUMBER, CONTACT SIRMAN@FAU.EDU)
COMPLETE COURSE TITLE: SURVIVAL ANALYSIS

CREDITS:
TEXTBOOK INFORMATION:
3
Survival Analysis, 2nd ed. by D.G. Kleinbaum andMitchel Klein, Springer.

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

COURSE DESCRIPTION, NO MORE THAN THREE LINES:
This course first introduces basic concepts of clinical trials, then introduces the principles and methods of statistical inference that are commonly used for epidemiologic analysis of survival data. The major topics covered are: Basic concepts in survival analysis, types of censoring, life table and Kaplan-Meier, log-rank method and Cox proportional model. Software package R language is utilized.

PREREQUISITES *:
STA 4234 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

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

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

1/12/12
1/12/12
9/1-13/13
9/13/15

Approved by:
Department Chair: Lee Klingen
College Curriculum Chair:
College Dean: 
UGPC Chair: 
Graduate College Dean: 
UFS President: 
PROVOST:

Date:
9/12/13
9/12/13
9/13/13
9/13/13

1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/gradprov/files/courses\_syllabus.pdf
2. Review Provost Memorandum:
   Definition of a Credit Hour
   www.fau.edu/gradprov/files/Definition\_Credit\_Hour\_Memo.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.

FAUnewcourseGrad—Revised September 2012
Syllabus

1. Course Name  
   Survival Analysis and Clinical Trials

2. Course prerequisites
   STA 4234 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
   This course first introduces basic concepts of clinical trials, then introduces the principles and methods of statistical inference that are commonly used for epidemiologic analysis of survival data. The major topics covered are: Basic concepts in survival analysis, types of censoring, life table and Kaplan-Meier, log-rank method and Cox proportional model. Software package R language is utilized.

5. Course objectives
   Upon completing this course students can expect to be able to:
   - design basic clinical trials.
   - compute and interpret the product limit estimate (Kaplan-Meier) estimate of survival and associated confidence intervals.
   - perform and interpret the log-rank test for differences between survival curves with right censored survival data.
   - perform Cox proportional model to estimate proportional hazards model coefficient, interpret coefficient estimates and confidence intervals, and test hypotheses that one or more coefficients in the regression model are zero.
   - interpret and critique the results of application of these statistical techniques as found in the health science literature.

6. Lecture Schedule
   - Design basic clinic trials (ca. 1 week)
     - Homework: Design pre-described clinic trials from the textbook
   - Introduce Software (ca. 1 week)
     - Homework: Using R package to do exercise problems
   - Life table (ca. 1 week)
     - Homework: Construct life tables for survival data
   - Kaplan-Meier estimator and its inference (ca. 2 weeks)
     - Homework: Calculate Kaplan-Meier estimate and make inference for survival data, read assigned papers selected by the instructor
7. Required Text

*Survival Analysis*, 2nd ed. by D.G. Kleinbaum and Mitchel Klein, Springer.

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>≥ 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>
</tr>
<tr>
<td>&gt; 80% - 83%</td>
<td>B−</td>
</tr>
<tr>
<td>&gt; 75% - 80%</td>
<td>C+</td>
</tr>
<tr>
<td>&gt; 65% - 75%</td>
<td>C</td>
</tr>
<tr>
<td>≥ 60% - 65%</td>
<td>C−</td>
</tr>
<tr>
<td>&gt; 57% - 60%</td>
<td>D+</td>
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<tr>
<td>&gt; 53% - 57%</td>
<td>D</td>
</tr>
<tr>
<td>≥ 50% - 57%</td>
<td>D−</td>
</tr>
<tr>
<td>&lt; 50%</td>
<td>F</td>
</tr>
</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