Graduate School of Public Health
San Diego State University
Division of Epidemiology and Biostatistics

PH 827: Analysis of Cohort Studies
Spring 2017

<table>
<thead>
<tr>
<th>Schedule #</th>
<th>Section</th>
<th>Units</th>
<th>Day</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>22592</td>
<td>1</td>
<td>3</td>
<td>W</td>
<td>4:00p—6:40p</td>
<td>LL 410</td>
</tr>
</tbody>
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Instructor: Hector Lemus, DrPH
Office location: HT 174
Office phone: (619) 356-0747
Office hours: By appointment
E-mail: hlemus@mail.sdsu.edu

Course Description:
Statistical models for analyzing cohort studies including general regression methodology, generalized linear models, generalized estimating equations, random effects models and survival analysis. Emphasis on conceptual understanding of these models, implementation with statistical software, and interpretation. The goal of this course is to teach you how to analyze cohort study data by using statistical regression models and their implementations in SAS. You will learn regression models for non-normal, censored and correlated data. Also, in-depth knowledge about the following:

- Generalized linear models (GLMs)
- Generalized Estimating Equations (GEE)
- Random Effects Models.
- Survival Analysis Methods

Learning Objectives:
At the end of this course, students should be able to:

- Identify study designs that are cohort studies
- Identify appropriate statistical regression models for the research question
- Implement the regression models using SAS
- Go through the iterative model building process and examine different aspects of statistical modeling
- Interpret the regression modeling results
- Articulate about other issues related to data analysis and modeling such as missing data, measurement error and skewed distributions

Prerequisites:
PH 623, PH 627, PH 628 and SAS programming experience.

Grading:

<table>
<thead>
<tr>
<th>Grade Evaluation</th>
<th>Grade Evaluation</th>
<th>Grading Scale</th>
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<tbody>
<tr>
<td>Assignments</td>
<td>30%</td>
<td>A = 93%</td>
</tr>
<tr>
<td>Midterm</td>
<td>35%</td>
<td>B = 83%</td>
</tr>
<tr>
<td>Final</td>
<td>35%</td>
<td>C = 73%</td>
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<td>A- = 90%</td>
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<td>B- = 80%</td>
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<td>C- = 70%</td>
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<td>B+ = 87%</td>
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<td>C+ = 77%</td>
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<td>F &lt; 70%</td>
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**Exams:**
The exams will be take-home and you will have two weeks to complete them. The exams will be available on BlackBoard and due to me on the dates below.

<table>
<thead>
<tr>
<th>Exam</th>
<th>Available Online</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Midterm</td>
<td>3/22/17</td>
<td>4/5/17</td>
</tr>
<tr>
<td>Final</td>
<td>4/26/17</td>
<td>5/10/17</td>
</tr>
</tbody>
</table>

**References:**
- Paul David Allison (2012). *Logistic Regression using the SAS System. 2nd Ed.*
- Cameron Adrian Colin (2013) *Regression analysis of count data. 2nd Ed.*
- Paul David Allison (2010) *Survival Analysis using the SAS System. 2nd Ed.*

**Blackboard:**
During the semester, course-related materials such as announcements, PowerPoint presentations, SAS code, and class handouts will be posted on Blackboard. Web resources such public data set sites will be linked as well. Please check regularly for new materials.

**SAS:**
We will use SAS as the primary statistical software package. If you would like to install SAS on your PC (not Mac), then I can loan you the installation files. You are to only install SAS on to your personal computer, you may NOT install SAS on any other computer nor may you distribute it in any way.

**Working with Undocumented and Deferred Action for Childhood Arrivals (DACA) students:**
The CSU has affirmed its commitment to ‘protecting access, affordability, intellectual freedom, inclusivity, and diversity for all students . . . including supporting DACA students.’ Discrimination, harassment, or retaliation against students, faculty, and staff on the basis of race, religion, gender, sexuality, disability, nationality, immigration status and other categories of identity is prohibited. If you have concerns about your status at the university, please visit http://studentaffairs.sdsu.edu/EOP/ for information or contact the Dean of Students or the Assistant Dean for Student Affairs in your College.

**Student Disability Services:**
If you are a student with a disability and believe you will need accommodations for this class, it is your responsibility to contact Student Disability Services at (619) 594-6473. To avoid any delay in the receipt of your accommodations, you should contact Student Disability Services as soon as possible. Please note that accommodations are not retroactive, and that I cannot provide accommodations based upon disability until I have received an accommodation letter from Student Disability Services. Your cooperation is appreciated.

**Statement on Nondiscrimination Policy**
San Diego State University complies with the requirements of Title VI and Title VII of the Civil Rights Act of 1964, as well as other applicable federal and state laws prohibiting discrimination. No person shall, on the basis of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination in any program of the California State University. SDSU does not discriminate on the basis of disability in admission or access to, or treatment or employment in, its programs and activities. Students should direct inquiries concerning San Diego State
University’s compliance with all relevant disability laws to the Director of Student Disability Services (SDS), Calpulli Center, Room 3101, San Diego State University, San Diego, CA 92128 or call 619-594-6473 (TDD: 619-594-2929). SDSU does not discriminate on the basis of sex, gender, or sexual orientation in the educational programs or activities it conducts. More detail on SDSU’s Nondiscrimination Policy can be found in the SDSU General Catalog, University Policies.

**Statement on Plagiarism and Academic Dishonesty**

Academic dishonesty includes cheating, plagiarism or other forms of academic dishonesty that are intended to gain unfair academic advantage. See section 41301 of the University policies. Plagiarism is an important element of this policy. Plagiarism is defined as ‘formal work publicly misrepresented as original; it is any activity wherein one person knowingly, directly and for lucre, status, recognition, or any public gain resorts to the published or unpublished work of another in order to represent it as one’s own’. Any work, in whole or in part, taken from the Internet or other computer-based source without referencing the source is considered plagiarism.