Syllabus
Epidemiology I (CLRE-251), 2 units
W19

Course Instructor
Balambal Bharti, MBBS, MPH, PhD;
E-mail: bhharti@ucsd.edu;
Phone: (858) 822-5351;
Office hours: availability upon request.

Teaching Assistant
Erin Richard, MPH, PhD(c);
E-mail: email: e6richar@ucsd.edu;
Phone: (858) 342-6812;
Office hours: availability upon request.

Course Information
Winter 2019; Wednesday from 4:00 to 5:50 PM, from January 9th to March 20th, inclusive.

Class Location
UCSD Extension, Suite 150, Room #112, University City Center, 6256 Greenwich Dr., San Diego, CA 92122

Course Purpose
Scholars will recognize and understand the various types of epidemiologic study designs, the relative strengths and limitations of each, and the proper study design in conducting their own research. They will also be able to identify and calculate the correct measure of association for each study design. Participants will recognize major sources of bias, confounding, interaction and misclassification, and understand design and analysis methods of dealing with each. They will also be familiar with criteria to differentiate association from causation, and understand the components of causality.

Course Structure
The course will consist in 9 consecutive weekly lessons of 1 hour 50 minutes each. Prior to each lesson, please complete the reading assignments and view the online lectures. Each lesson will consist of a summary of the online lecture, a review of the terminology, a question & answer period, and end with a group exercise of the relevant topics. On week 6, in lieu of a group exercise, there will be an in-class midterm exam followed by a short lecture. Week 10 will consist of a review session for the final exam. The final will be held in-class on the 11th week (finals week). Please bring a calculator to class.

Course Textbook & Resources
For each lesson, a slide presentation of the lecture, supplementary resources, and homework assignments can be found on TritonEd.

- Each week students will be asked to watch the video lecture and read from the class text.
- Students are encouraged to do exercises in the textbook and to check answers and explanations online (see information in textbook). These are not submitted nor graded, but the instructor and/or TA can answer questions.
- For selected weeks (see schedule), students will be asked to turn in Study Design homework assignments via the TritonEd website.
- Submit your homework electronically through the TritonEd “Assignment” Section.
- It is expected that all students will complete homework individually and submit their OWN homework. Plagiarism will not be tolerated. UCSD’s definition of academic misconduct can be found at: http://academicintegrity.ucsd.edu/excel-integrity/define-cheating/index.html and the official university policy on the Integrity of Scholarship can be found at: http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2
- Full credit for homework assignments will be given only if you turn them in on time. TritonEd assignments will be open for submission until 4:00pm PST/PDT on the day they are due.

**Course Evaluation**

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>Participation in weekly group exercises (4 points per class)</td>
<td>40 points</td>
</tr>
<tr>
<td>Homework assignments</td>
<td>40 points</td>
</tr>
<tr>
<td>Midterm</td>
<td>120 points</td>
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<tr>
<td>Final Exam</td>
<td>300 points</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>500 points</strong></td>
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</tbody>
</table>

Final Letter grades will be determined using the scale below. There is NO extra credit in this course and no final grade curves or sliding scales will be implemented. There are no exceptions.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points Range</th>
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<tbody>
<tr>
<td>A</td>
<td>≥ 465</td>
</tr>
<tr>
<td>A-</td>
<td>450-464</td>
</tr>
<tr>
<td>B+</td>
<td>435-449</td>
</tr>
<tr>
<td>B</td>
<td>415-434</td>
</tr>
<tr>
<td>B-</td>
<td>400-414</td>
</tr>
<tr>
<td>C+</td>
<td>385-399</td>
</tr>
<tr>
<td>C</td>
<td>365-384</td>
</tr>
<tr>
<td>C-</td>
<td>350-364</td>
</tr>
<tr>
<td>D</td>
<td>300-349</td>
</tr>
<tr>
<td>F</td>
<td>&lt;300</td>
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If you are taking this course for Cr/NC, CR = ≥350 pt.

**Attendance Policy**

CREST/MAS program policy requires a minimal attendance of 70%, seven of the ten sessions. Please, be sure not to exceed 3 absences as you will have to drop and repeat the course. Coming to class 20 minutes after the class starts also counts as an absence so, please be on time.
Communication with lecturers
The best way to reach us is via email. We will try to respond within 24 hours.

Student Evaluation of Course and Faculty
Course and faculty evaluations provide important feedback to instructors to improve course content and teaching methodology. Teaching evaluations are also an important factor in faculty advancement, merit and promotion. This is also part of developing professional conduct and behavior. To facilitate ease of completion of evaluations an electronic format has been implemented in Qualtrics. You will receive an email at the end of the quarter with the link to the questionnaire.

Accommodations
If you have a disability that may impact your academic performance, you may request accommodations by submitting documentation to: https://students.ucsd.edu/well-being/disability-services/
SCHEDULE

**Course:** CLRE-251 – Epidemiology I  
**Course Coordinator/Main Instructor:** Balambal Bharti, MBBS, MPH, PhD  
**Quarter:** Winter 2019  
**Class Time:** Wednesdays from 4:00 to 5:50 PM, from January 9th to March 20th, 2019  
**Class Location:** UCSD Extension, Room 117 - University City Center, 6256 Greenwich Dr., San Diego, CA 92122  
**Textbook:** Epidemiology (fifth edition), by Leon Gordis

<table>
<thead>
<tr>
<th>Lesson (Date)</th>
<th>Topic</th>
<th>Description</th>
<th>Textbook Sections</th>
<th>Homework Schedule</th>
</tr>
</thead>
</table>
| 1 (01/9)  
1  (01/9)  
1 (01/9)  
| Introduction & Disease Transmission | • Define epidemiology and course objectives  
• Evaluate methods of disease transmission  
• Identify associations | Chapter 1  
Chapter 2 | -  
-  
|
| 2 (01/16)  
| Epidemiologic Measurement | • Measurement of associations, strength, and direction  
**Homework #1** - Write a hypothesis statement using one “risk factor” and one outcome with which you are familiar. This hypothesis will be used for all subsequent homework assignments. Do not pick age or gender as your **risk factor**. Do not use known causal associations i.e. smoking and lung cancer. Write a brief background section on what is currently known regarding this risk factor and outcome. Submit via TritonEd. | Chapter 3  
Chapter 4 | #1 Topic Selection  
- |
| 3 (01/23)  
| Study Design Overview, Cross-sectional studies | • Basic summary of all study designs to be discussed over the quarter  
• Detail on cross-sectional and ecological study designs  
**Homework #2** – Design a cross-sectional study (XS study) using your risk factor and outcome. Describe in 2-3 paragraphs. Submit via TritonEd. | Ch 10,  
p208-212 | #2 XS Study  
#1 Topic Selection |
| 4 (01/30)  
| Prospective/Cohort Studies | • Detailed evaluation of prospective/cohort studies, basic limitations, and measurement  
**Homework #3** – Design a cohort study using your risk factor and outcome. Describe in 2-3 paragraphs. Submit via TritonEd. | Chapter 9  
Ch 11,  
p215-220  
Chapter 12 | #3 Cohort  
#2 XS Study |
| 5 (02/06)  
| Case-Control Studies | • Detailed evaluation of case-control studies (CaCo), their limitations, methods of measurement  
• Comparison of matched vs. unmatched designs  
**Homework #4** – Design a case-control study using your risk factor & disease. Describe in 2-3 paragraphs. Submit via TritonEd. | Ch 10,  
p189-206  
Ch11,  
p220-227  
Chapter 13 | #4 CaCo  
#3 Cohort |
| 6 (02/13)  
| Experimental Studies | • Detailed discussion on intervention studies, experimental studies, and randomized trials  
**Midterm today!** | Chapter 7  
Chapter 8 | -  
Midterm |
<table>
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</table>
| 7 (02/20)    | Causality | • Austin Bradford-Hill’s Causal criteria  
• Comparison between relationships and causal associations  
• **Homework #5** – Homework 5: Discuss which of the three study designs you created is the best-suited for your research question and discuss why. Also, address issues with determining causality. Submit via TritonEd. | Chapter 14 | #5 Summary  
#4 CaCo |
| 8 (02/27)    | Limitations and Caveats | • Study biases that are pertinent to each design  
• How to identify confounding and how to handle it  
• Effect modification/statistical interactions and how to address | Chapter 15 | -  
- |
| 9 (03/06)    | Screening & Diagnostic Tests | • Measurement of performance of screening and diagnostic tests  
• Sensitivity, Specificity, Predictive Values | Chapter 5  
Chapter 18 | -  
#5 Summary |
| 10 (03/13)   | Course Review | • A review of the entire course in preparation for the final exam | - | -  
- |
| Final Exam (03/20) | Final Exam | • In-class  
• Two-hours long  
• Cumulative | - | -  
- |