CLRE 251
Epidemiology 1
Summer 2020
Lectures via Zoom: Th 4:00-5:50pm
Course Units: 2

Course Instructor
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Teaching Assistant
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UC San Diego/San Diego State
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Office hours: Mondays, 9a – 10a on Zoom

Course Description
This course will teach the core concepts of epidemiology, emphasizing observational study designs, measurement of exposures, outcomes, and associations, and the concepts of bias, confounding, and interaction.

Learning Objectives
On completion of this course, students should be able to:
1. Describe the major objectives of epidemiology, particularly its goal to study the distribution and determinants of disease in populations and how to prevent it.
2. Describe the structure of major epidemiologic study designs, as well as their strengths and weaknesses for studying various health outcomes.
3. Define and calculate measures of disease occurrence and measures of association that quantify the relationship between exposures or risk factors and health outcomes.
4. Describe sources of bias in epidemiologic studies, including confounding, selection bias, and measurement error.
5. Describe and interpret effect modification.

Course Textbook & Resources
UC San Diego  
CREST/MAS in Clinical Research

Course Format
UCSD policy during this ongoing COVID-19 outbreak is that all Summer 2020 instruction will be delivered remotely, synchronously for those who are able to attend in real time, and asynchronously for those unable to. The following tools will aid in our remote learning:

**Zoom:** CLRE 251 will include Zoom-based lectures and lab sessions. To support online instruction during the COVID-19 outbreak, UCSD has provided all enrolled students with Zoom Pro accounts. If you have not yet claimed your account, please follow the instructions on this site [https://blink.ucsd.edu/technology/file-sharing/zoom/index.html](https://blink.ucsd.edu/technology/file-sharing/zoom/index.html). When joining a Zoom session, please first sign-in to your UCSD Zoom account. Invitations to join Zoom-based lectures, lab sessions, and office hours will be posted on the Canvas calendar.

**Canvas:** All course announcements, slides, recordings, assignments (homework and labs), and exams will be distributed via Canvas. To ensure that you receive course announcements in a timely manner, please update your notification settings so that Canvas Announcements and Inbox Conversations are forwarded to your email address.

**Gradescope:** All assignments will be collected via Gradescope. You will receive an email notification that you were added to the course on Gradescope. Email addresses associated with your Canvas account can be used to sign into Gradescope.

Each class will be divided into two parts detailed below, a lecture and a lab session.

**Lectures**
Students are encouraged to attend live lectures on Zoom; however, recordings will be posted on Canvas following each lecture to ensure that students who may not be able to attend can fully participate in the course. At the start of each Zoom lecture, students’ microphones will be muted to minimize distracting background noise. Students can use the “Raise Hand” feature and unmute their microphones when they wish to ask a question. The TA will monitor the Zoom chat space during lectures so that students can also use that to ask questions or for assistance with technical issues experienced during the lecture.

**Lab Sessions**
Lab sessions are designed to be an interactive learning environment. Students will work in teams to complete lab assignments that are designed to apply concepts covered in lectures, assigned readings, and homework assignments. Each group member is responsible for contributing to the group work and should be prepared to discuss the results with the entire class. Lab sessions will be facilitated by the instructor and the TA.

**Before Lab:** Please read the lab assignment which will be posted on Canvas before class. **During Lab:** Groups will work together to complete the lab assignment. At approximately 5:30pm (at the facilitator’s discretion), each group will turn in one lab assignment, which will be graded. Lab assignments (one per group) must be turned in via
Gradescope by the requested time. Late work will not be accepted. From 5:30 - 5:50pm, groups will join the main Zoom Room to present and discuss their answers. **Lab Attendance:** If you are absent when the breakout rooms open, you will be responsible for individually completing and turning in an alternative lab assignment via Gradescope within 48 hours.

**Course Evaluation**

Grading:

<table>
<thead>
<tr>
<th>Lab Assignments</th>
<th>30%</th>
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</thead>
<tbody>
<tr>
<td>Homework assignments</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

- **Midterm exam** will cover all material covered up until the midterm.
- **Final exam** will cover all material covered throughout the quarter.

*Exams will not be distributed* but can be reviewed by appointment with the instructor or TA.

- **Homework Assignments.** Three graded assignments will be distributed via Canvas and are to be turned in via Gradescope.
- **Lab Assignments.** Graded lab assignments are to be completed in groups (unless asynchronous attendance/unable to attend the lab session; see above for procedures). Labs will be distributed via Canvas and are to be turned in via Gradescope.

Final letter grades will be determined using the scale below. There will be no extra credit assignments.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>Pass/Fail</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+ = 97.0-100</td>
<td>B+ = 87.0-89.9</td>
<td>C+ = 77.0-79.9</td>
<td>60.0-69.9</td>
<td>≤59.9</td>
<td>Pass ≥ 70</td>
</tr>
<tr>
<td>A   = 93.0-96.9</td>
<td>B = 83.0-86.9</td>
<td>C = 73.0-76.9</td>
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<td></td>
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<tr>
<td>A-  = 90.0-92.9</td>
<td>B- = 80.0-82.9</td>
<td>C- = 70.0-72.9</td>
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</table>

**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. 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.
Policies

1. **Attendance Policy:** CREST/MAS program policy permits three absences without penalty. A fourth absence will result in a 15% reduction in your final grade. Please, be sure not to exceed 4 absences as you will have to drop and repeat the course.

2. **Missed Assignments:** If there are extenuating circumstances resulting in an absence for a presentation or assignment this must be communicated to Dr. Bellettiere via email preferably prior to the class, but no later than 24 hours after the absence. Otherwise, late assignments will not be accepted.

3. **Professionalism:** Please attend to all university policy and classroom etiquette procedures. Those not heeding the policies will be asked to leave the classroom immediately so as to not disrupt the learning environment. Please arrive on time, be attentive, and respectful for all class meetings. Students who habitually disturb the class by talking, arriving late, or other unprofessional behavior may suffer a reduction in their final grade.

4. **Academic Conduct:** All work submitted in this course must be your own and produced exclusively for this course. The use of sources (ideas, quotations, and paraphrases) must be properly acknowledged and documented. If in doubt, you are encouraged to review guidelines for the proper use of sources, as well as UCSD's policy on plagiarism and other forms of academic misconduct. You are responsible for knowing what constitutes academic misconduct at UCSD. UCSD’s definition of academic misconduct can found here: [http://academicintegrity.ucsd.edu/](http://academicintegrity.ucsd.edu/). The official university policy on the Integrity of Scholarship can be found here: [http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2](http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2). If you suspect another student of academic misconduct, you are strongly encouraged to report it. Any suspicion of academic misconduct during an exam will be reported to the Office of Academic Integrity for review and process. The Office of Academic Integrity will determine whether or not a violation has been committed and the consequences of that violation. During exams you are expected to follow instructions. Failure to do so can be considered misconduct.

5. **Disability Access:** The University is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students must contact the Office for Students with Disabilities (OSD) who will provide an Authorization for Accommodation (AFA) letter verifying the disability. Students will receive the appropriate accommodations from the day that they provide Dr. Bellettiere with the AFA letter. Course accommodations cannot be applied retroactively.

6. **Title IX Compliance:** The University recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will not be tolerated. If you have been the victim of sexual misconduct, physical and/or psychological abuse, I encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator.
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Reading*</th>
<th>Topic</th>
<th>Lab**</th>
<th>Due Today†</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>07/02/2020</td>
<td>Chapters 1 - 2</td>
<td>Introduction and Disease Transmission</td>
<td></td>
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<tr>
<td>2</td>
<td>07/09/2020</td>
<td>Chapters 3 - 4</td>
<td>Measures of Disease Occurrence</td>
<td>Lab 1</td>
<td>HW 1; Lab 1</td>
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<tr>
<td>3</td>
<td>07/16/2020</td>
<td>Pages 82-86 &amp; 149-157</td>
<td>Cross-Sectional Studies</td>
<td>Lab 2</td>
<td>HW 2; Lab 2</td>
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<tr>
<td>4</td>
<td>07/23/2020</td>
<td>Chapter 8, Pages 240-245, Chapter 13</td>
<td>Cohort Studies &amp; Relative Risk</td>
<td>Lab 3</td>
<td>Lab 3</td>
</tr>
<tr>
<td>5</td>
<td>07/30/2020</td>
<td>Pages 157-172, 245-253, Chapter 9</td>
<td>Risk Differences &amp; Case Control</td>
<td>Lab 4</td>
<td>Lab 4</td>
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<tr>
<td>6</td>
<td>08/06/2020</td>
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<td>Experimental studies &amp; <strong>Midterm Review</strong></td>
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<tr>
<td>7</td>
<td>08/13/2020</td>
<td>Chapters 14</td>
<td>Causality and DAGs</td>
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<td>8</td>
<td>08/20/2020</td>
<td>Chapters 15</td>
<td>Bias, Confounding, and Interaction</td>
<td>Lab 5</td>
<td>Lab 5</td>
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<tr>
<td>9</td>
<td>08/27/2020</td>
<td>Chapters 5, 18</td>
<td>Screening and Diagnostic Testing</td>
<td></td>
<td>HW 3</td>
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<tr>
<td>10</td>
<td>09/03/2020</td>
<td></td>
<td>Review for Final Exam</td>
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<tr>
<td>09/10/2020</td>
<td></td>
<td></td>
<td>Final Exam</td>
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*Read the listed materials before the listed classes meeting. All assigned reading will be in Gordis Epidemiology unless otherwise noted.

**Lab assignments are intended to be completed as a group and submitted during the second half of the class session.

†Details about the specific assignments can be found on the course's Canvas page.