PHS 801 EPIDEMIOLOGY OF INFECTIOUS DISEASES (3 credits)

COURSE DESCRIPTION and OBJECTIVES

This course is designed to provide an introduction to the principles and practice of infectious disease epidemiology. It will focus on the etiology, distribution and determinants of infectious diseases of major public health importance and describe prevention and public health control efforts undertaken locally, nationally and internationally. Student learning objectives for this course include a greater appreciation and understanding of:

- Main epidemiologic characteristics of the major infectious diseases of humans.
- Host, organism and environment relationship as they relate to infectious disease epidemiology.
- Application of epidemiological methods to study infectious diseases
- How epidemiologic characteristics of infectious diseases are utilized to prevent and control their spread.
- Causes and distribution of current epidemics including newly emerging and reemerging infectious diseases.
- Impact of infectious diseases on populations and communities locally and globally.

COURSE ORGANIZATION

Course Director: Ajay K. Sethi, PhD, MHS
Assistant Professor
Department of Population Health Sciences
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aksethi@wisc.edu

Office Hours: Please email for an appointment

Teaching Assistant: Christine Muganda is the teaching assistant for the course. She will not hold office hours, but can be available by appointment.

Course time and place: January 24 – May 10, 2012
Tuesdays and Thursdays, 2:30 – 3:45 PM
HSLC 1222
Reading: Two textbooks are recommended for this course:


These texts are recommended and not required. There are many textbooks and references on infectious disease and infectious epidemiology (some are listed after the course schedule). Feel free to purchase and use texts that suit your needs.

Other reading may be assigned for specific lectures. These will be listed on the course website. Please complete any reading prior to lecture to maximize your learning in class and to promote a didactic learning environment.

Learn@UW: The course is administered through Learn@UW (https://learnuw.wisc.edu/). Copies of the readings, with exception to chapters from the textbooks, and links to websites are available on the course website.

Handouts for individual lectures may or may not be available online prior to class. If the handout is unavailable online 24 hours prior to lecture, a hardcopy will be provided for you in class.

Student Evaluation: You will be evaluated on completion of and performance on in-class exercise(s), two exams, and class participation, which will comprise your total grade for the course based on the following breakdown: 20% for class participation, 30% for in-class exercises, and 25% for each of the exams.

Out of respect to the many lecturers who are contributing their time and expertise and because the lectures are an essential component of the class, all students are expected to attend class. Class attendance is also a prerequisite for class participation. If you are absolutely unable to attend class, please notify the Teaching Assistant and Course Director in advance of class to document your absence and reason.

If you are unable to attend in-class exercises, please let the Course Director know the reason well in advance of the date of your absence. Only certain reasons (e.g., religious holidays, illness, or required commitments) will be considered valid reasons for your absence.

Your final course grade will be calculated using the following 100-point scale:

- A  93+ (outstanding)
- AB  88-92 (excellent)
- B  83-88 (very good)
- BC  78-82 (fair)
- C  <78 (poor)

Non-Discrimination Policy: The UW-Madison is committed to creating a dynamic, diverse and welcoming learning environment for all students and has a non-discrimination policy that reflects this philosophy. Disrespectful behaviors or comments addressed towards any group or individual, regardless of race/ethnicity, sexuality, gender, religion, ability, or any other difference is deemed unacceptable in this class, and will be addressed publicly by the professor.
# COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture topic:</th>
<th>Lecturer:</th>
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<tbody>
<tr>
<td>Jan 24</td>
<td>Introduction to infectious disease epidemiology</td>
<td>Sethi</td>
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<td></td>
<td>Classification of infectious agents and diseases</td>
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<td>Jan 26</td>
<td>Host susceptibility and response to infectious diseases</td>
<td>Sethi</td>
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<tr>
<td>Jan 31</td>
<td>Biomedical interventions to prevent infectious disease</td>
<td>Sethi</td>
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<tr>
<td>Feb 2</td>
<td>Outbreak investigation</td>
<td>Klos</td>
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<td>Feb 7</td>
<td>Surveillance</td>
<td>Heffernan</td>
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<td>Feb 9</td>
<td>Laboratory methods in the study of infectious diseases</td>
<td>Warshauer</td>
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<td>Feb 14</td>
<td>Statistical methods in surveillance</td>
<td>Gangnon</td>
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<td>Feb 16</td>
<td>Enteric diseases</td>
<td>Davis</td>
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<td>Feb 21</td>
<td>In-class exercise 1</td>
<td>Sethi</td>
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<td>Feb 23</td>
<td>Zoonotic diseases</td>
<td>Kazmierczak</td>
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<td>Feb 28</td>
<td>Malaria</td>
<td>Paskewitz</td>
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<td>Mar 1</td>
<td>West Nile Virus</td>
<td>Goldberg</td>
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<td>Mar 6</td>
<td>Exam 1</td>
<td>Sethi</td>
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<td>Mar 8</td>
<td>Models to study infectious diseases</td>
<td>Sethi</td>
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<td>Mar 13</td>
<td>Applied mathematical models for health and disease</td>
<td>Döpfer</td>
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<td>Mar 15</td>
<td>In-class exercise 2</td>
<td>Muganda</td>
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<td>Mar 20</td>
<td>Epidemiologic study designs and the establishment of causality</td>
<td>Sethi</td>
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<td>Mar 22</td>
<td>Evidence for an infectious cause of Crohn’s disease</td>
<td>Collins</td>
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<td>Mar 27</td>
<td>Vaccine preventable diseases</td>
<td>Conway</td>
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<td>Mar 29</td>
<td>Influenza vaccination</td>
<td>Belongia</td>
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<td><strong>Spring Break March 31 – April 8</strong></td>
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<td>Apr 10</td>
<td>Infection control</td>
<td>Safdar</td>
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<td>Apr 12</td>
<td>Tuberculosis</td>
<td>Crnich</td>
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<td>Apr 17</td>
<td>Evolution of Tuberculosis</td>
<td>Pepperell</td>
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<td>Apr 19</td>
<td>Sexually transmitted infections</td>
<td>Hunter</td>
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<td>Apr 24</td>
<td>Sociobehavioral approaches to prevent infectious disease</td>
<td>Martinez-Donate</td>
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<td>Apr 26</td>
<td>Hepatitis</td>
<td>Striker</td>
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<td>May 1</td>
<td>HIV/AIDS</td>
<td>Sethi</td>
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<td>May 3</td>
<td>In-class exercise 3</td>
<td>Sethi</td>
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<tr>
<td>May 8</td>
<td>In-class exercise 3 (continued)</td>
<td>Sethi</td>
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<tr>
<td>May 10</td>
<td>Exam 2</td>
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GENERAL RESOURCES

Websites of interest

Centers for Disease Control and Prevention (http://www.cdc.gov/)

World Health Organization (http://www.who.int/en/)

National Institute of Allergy and Infectious Diseases (http://www3.niaid.nih.gov/)

Journals

The Journal of Infectious Diseases (http://www.journals.uchicago.edu/JID/home.html)

Clinical Infectious Diseases (http://www.journals.uchicago.edu/CID/home.html)

Emerging Infectious Diseases (http://www.cdc.gov/ncidod/eid/)

Morbidity & Mortality Weekly Report (http://www.cdc.gov/mmwr/)

Books


LECTURERS

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