

# Intermediate Epidemiology – M19-502

Fall 2 - 2014

**Instructor:** Bettina F. Drake, PhD, MPH

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**Course Meetings:** Tuesday & Thursday 9 AM – 12 Noon

**Course Location:** Taylor Avenue Building 2<sup>nd</sup> Floor, Doll and Hill Rm

**Office Hours:** By arrangement

## Assistant Instructor:

Ying Liu, PhD

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## Course Overview:

This is the second course in the Epidemiology series which builds upon the basic principles and methods of epidemiology and introduces additional tools and concepts that are critical to a comprehensive understanding of epidemiologic methods. Students are expected to complete assigned reading, participate in lectures, work in groups on in-class assignments and complete homework in a timely manner.

## Course Format:

Classes will include interactive presentations by the course instructors and guest lecturers. There will be assigned readings for every class, in-class assignments, homework, exams and a class presentation. Class participation by students is essential to the success of the course.

## Course Objectives:

At the end of this course, students will be able to:

- ✓ Calculate and interpret measures of disease occurrence and association
- ✓ Understand the appropriate methods to use when assessing confounding and effect modification
- ✓ Design an epidemiological study for any given research question
- ✓ Write a methods section for a study proposal

## Textbook:

TBD

Additional assigned readings will be listed on Blackboard.

## COURSE REQUIREMENTS

### Class participation and attendance (10%)

All students are expected to actively engage in classroom discussions. Students should be prepared to ask questions, raise concerns and interact with fellow students during each class.

### **In-class assignments (10%)**

After each lecture, students will complete a short assignment covering the reading material for that day and the lecture in small groups of 2 or 3.

### **Homework (25%)**

One homework assignment will be given each week covering all topics for that week. Homeworks will be assigned on Thursday to be turned in the following Tuesday.

### **Exams (55%)**

- Midterm (20%)
- Comprehensive Final (35%)

## **COURSE EXPECTATIONS**

The instructor will prepare and deliver course material; be available to students by appointment; and provide timely and clearly explained feedback on student performance. The instructor expects students to attend each class on time; complete all assignments in a timely manner; come to class prepared, having read all assignments; participate in class discussions; seek any necessary clarification regarding course expectations; and provide feedback about the effectiveness of the course. **Any issues with attendance, meeting deadlines, or completing assignments should be discussed promptly with the instructor.** E-mail is the best way to contact me.

### ***Academic Honesty:***

Students are expected to complete exams and assignments in accordance with Washington University's academic rules and regulations regarding honesty and integrity. Any evidence of academic misconduct, including **cheating, failure to cite sources, and plagiarism** will result in appropriate action as dictated by Washington University. Violations of academic honesty will result in notification to the Associate Dean of Academic Affairs at the Washington University School of Medicine, as well as to the MPHS Director and Program Committee. Any hint of violation during exams/assignments will result in no grade for the exam/assignment. For more information, see the University's Student Academic Integrity Policy: [www.wustl.edu/policies/undergraduate-academic-integrity.html](http://www.wustl.edu/policies/undergraduate-academic-integrity.html)

**Special Needs:** Per University policy, students with a learning, sensory, or physical disability or other impairment, should contact the Washington University Center for Advanced Learning Disability Resources (DR) at 935-4062 (tel) or visit <http://disability.wustl.edu/DisabilityResources.aspx>. The DR office is located in Cornerstone on the Danforth Campus. Students whose second language is English and/or those in need of assistance in lectures, reading or writing assignments, and/or testing, may contact the University Writing Center at 935-4981 or visit <http://artsci.wustl.edu/~writing/home.html>

### **Blackboard**

Blackboard will be the primary course communication vehicle. Please check the site regularly for class announcements and readings. Blackboard can be accessed at <https://bb.wustl.edu>. Login with your WUSTLKey. Important updates and reminders will be posted in the Announcements section on Blackboard.

We will utilize the Discussion threads for general questions related to lectures and assignments. Students should post all general questions that may be relevant to others in class to the Discussion thread. The instructor will monitor questions once a day (with the exception of weekends) and post

answers. Student-specific questions (e.g. related to a grade or conflict) should be emailed directly to the instructor. Every effort will be made to answer student emails within 24-hours (excluding weekends). Please put the course number and title in the subject of the email. Students are encouraged to post materials related to class (e.g. link to a news story) on Blackboard for the rest of the class to access.

**Attendance**

Class attendance is required. As a courtesy to other students, you are expected to arrive on time. More than one unexcused absence from class may result in a lowered grade. Do not enroll if you have absences already planned. The value of the class stems from the quality of the input received from peers and course instructors.

**Readings**

You should complete the required readings *before* each class session.

**Grading Scale:**

A	94-100	B+	88-89	B-	80-83	C	73-77	F	≤69
A-	90-93	B	84-87	C+	78-79	C-	70-72		

**Course assignments:**

All written assignments should be delivered prior to class on the day of the deadline via Blackboard. Do not use email for submitting course assignments. Exceptions or changes to due dates will not be granted.

**Policy on Late Assignments:** All late assignments will result in a deduction of five percentage points for each day late (including weekends) unless prior approval is obtained from the professor or a compelling situation prevents prior approval. The professor will allow for (documented) family emergencies (e.g. birth/death in the family). Health issues must be documented by a physician.

**Classroom environment:** This is a course where students bring research ideas in development. Ideally, everyone should be involved in classroom discussions. In order for everyone to feel comfortable presenting work and voicing opinions and suggestions, a climate of tolerance and respect is essential.

**Course Syllabus Subject to Change:** Every effort will be made to follow the syllabus content and schedule. If circumstances dictate, there may be modifications made during the semester and every effort will be made to notify students in a timely manner.

Topic	Date	Assignments
Course overview Study Design	Oct. 21	Reading: Chapter 1 Instruction by: Drake
Dataset Use & SAS	Oct. 23	Reading: Instruction by: Drake
Measures of Disease Occurrence	Oct. 28	Reading: Chapter 2: 2.1-2.2 Applied: Frequencies (counts, rates, proportions)  Instruction by: Drake <i>Study design homework due</i>
	Oct. 30	Reading: Chapter 2: 2.3-2.4 Applied: incidence, prevalence, life-table  Instruction by: Drake
Measures of Association	Nov. 4	Reading: Chapter 3: 3.1-3.3 Applied: Logistic Regression  Instruction by: Drake <i>Measures of disease occurrence homework due</i>
	Nov. 6	Reading: Chapter 3: 3.4-3.5 Applied: Linear Regression  Instruction by: Drake
Confounding	Nov. 11	Reading: Chapter 5 Applied: identifying confounding  Instruction by: Farmer <i>Measures of association homework due</i>
Effect Modification	Nov. 13	Reading: Chapter 6 Applied: identifying effect modification  Instruction by: Farmer
Midterm	Nov. 18	<b>In-class Midterm</b>
Stratification and Adjustment	Nov. 20	Reading: Chapter 7: 7.1-7.4 Instruction by: Drake <i>Validity and Bias homework due</i>
Stratification and Adjustment	Nov. 25	Reading: Chapter 7: 7.4-7.7 Instruction by: Drake
Thanksgiving	Nov. 27	
Validity and Bias	Dec. 2	Reading: Chapter 4 Instruction by: Sutcliffe

<b>Modeling</b>	Dec. 4	Reading: Instruction by: Farmer <i>Stratification and adjustment homework due</i>
<b>Presentations</b>	Dec. 9	4-5 groups
<b>Presentations</b>	Dec. 11	4-5 groups
<b>Final</b>	Dec. 16	<b>In-class Final</b>