

**EPID 705**  
**Introduction to Deductive Logic and Probability Logic in Epidemiology**  
**Fall, 2015**  
**Syllabus**

**DESCRIPTION**

Covers properties of logical relations, truth tables and Euler diagrams, valid and fallacious arguments, cognitive heuristics and biases, interpretations of probability, the probability calculus, Bayes's theorem, binomial and normal distributions, applications of probability logic and probabilistic fallacies, all in an epidemiologic context.

**INSTRUCTIONAL TEAM**

**Charles Poole**           Instructor  
2401A McGavran-Greenberg  
Email: [cpoole@unc.edu](mailto:cpoole@unc.edu)  
Phone: 919-918-3808  
Office hours: Tue. 3:30pm – 4:30pm  
                  Wed. 10:00am – 10:50am  
                  Thu. 3:30pm – 4:30pm  
                  Other times by appointment

**Joann Gruber**           Teaching Assistant  
Email: [gruberj@email.unc.edu](mailto:gruberj@email.unc.edu)  
Office hours: Thu. 2:00pm – 4:00pm (EPID student room)  
                  Other times by appointment

**REQUIRED TEXTS**

Freund, John E. Introduction to probability. New York: Dover Books, 1993 (paperback).

Weston, Anthony. A rulebook for arguments. 4th edition. Hackett Publishing Company, 2008 (paperback).

## SCHEDULE

Class meets 8:00am – 9:15am, McGavran-Greenberg 2308, on the following dates:

### Tuesdays

Sept. 8  
Sept. 15  
Sept. 22  
Sept. 29  
Oct. 6, Quiz 1  
Oct. 13  
Oct. 20, Exercise 1 posted  
Oct. 27, Exercise 1 due before class  
Nov. 3  
Nov. 10, Exercise 2 posted  
Nov. 17, Exercise 2 due before class  
Nov. 24, Quiz 2

### Thursdays

Sept. 10  
Sept. 17  
Sept. 24  
Oct. 1  
Oct. 8  
Oct. 15, no class (fall break)  
Oct. 22  
Oct. 29  
Nov. 5  
Nov. 12  
Nov. 19

## OUTCOME MEASURES

Class participation	10%
Quiz 1	20%
Exercise 1	25%
Exercise 2	25%
Quiz 2	20%

## GRADES

<60.0	F
60.0 – 74.9	L
75.0 – 89.9	P
≥90.0	H

## HONOR CODE

University policy requires all students to familiarize themselves with all provisions of the Instrument of Student Governance. The expression, “unauthorized assistance,” in the descriptions of the graded material below is a key term in the Instrument.

The following links provide all the needed information: <http://honor.unc.edu/> and <http://instrument.unc.edu/>. These links are also provided on the course web site.

Appendix A of the Instrument states that each student is expected to “[s]ign a pledge on all graded academic work certifying that no unauthorized assistance has been received

or given in the completion of the work.” We abide by this requirement in EPID 705. The instructor reserves the right to deduct points without warning if this statement is not written and signed on each assignment and quiz, whether or not a reminder is given.

## **READINGS AND OTHER PREPARATION**

The Weston text should be studied in its entirety. Only the sections of the Freund text on the topics covered in lecture need to be studied. A list of recommended practice problems in the Freund text will be provided on the course web site. A few additional required readings will be posted there as well.

The course web site gives links to web sites on deductive logic and probability logic. At these sites, you can find practice problems and alternative presentations of most of the key concepts. Unfortunately, not every problem or example on these sites will have an epidemiologic topic as its subject matter. Nonetheless, these web sites are highly recommended, especially for the deductive logic part of the course. Please do not feel insulted if some of them seem directed toward much younger students.

The course web site contains a list of some recommended books on deductive logic and cognitive heuristics and biases, as well as some books that at least touch on probability logic at approximately the desired level for this course. These resources are provided only for those who wish to study this material beyond the course requirements.

The following are highly recommended:

1. Form or join a study group. If it doesn't work out, form or join another one.
2. Before coming to class, do the readings and study the slides.
3. Do all the problems on the slides before coming to class.
4. Do all the recommended practice problems in the Freund textbook.
5. Consult the posted web sites.
6. Ask questions in class and outside of class.
7. If you have a disability of any kind, please avail yourself of the relevant University services and let the instructor know. The same goes for major life events that arise during the semester and that might impede your success in the course. This information will be held in the strictest confidence. There are some steps we can take to help in these circumstances, but they become less and less available as the semester goes on.

## **EPISHEET**

An Excel workbook called Episheet.xls is posted on the course web site. We might use it in EPID 705. We will definitely use it, a lot, in EPID 715.

This spreadsheet program contains macros. To get it to work properly, you may need to relax your computer's security settings.

## **AUDITORS**

Auditors and repeat customers are welcome, space permitting. University policy dictates that anyone who audits a course may not subsequently take it for credit.