

**Tufts University, Friedman School of Nutrition Science and Policy**

**NUTB 204 – Epidemiology for Nutrition Professionals  
Spring 2018**

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**Office hours:** By appointment, *Online (Skype or WebEx) or by phone*

**Graduate Credits:** 1

**Prerequisites:** One semester of statistics

**Course Description:** This course covers basic epidemiologic concepts and methods and introduces students to techniques, including dietary assessment methods, that are used in human nutrition research. Students will learn to calculate and interpret basic measures of disease frequency and measures of effect, will be introduced to methods for recognizing and addressing sources of error in human studies, and will learn the basics of study design and implementation for nutrition research. Students will learn to interpret and critique published work through discussion and application of the concepts and methods covered in this class.

**Course Objectives:** By the end of this course, students will be able to:

- Employ basic epidemiologic terminology and explain the scope of epidemiology as a discipline.
- Explain basic methods of dietary assessment.
- Describe the importance and challenges of conducting epidemiologic investigation of chronic diseases.
- Calculate, interpret and compare measures of disease frequency.
- Discriminate between the observational and experimental study designs used in nutrition research.

- Explain the effects of random error and learn strategies to reduce it.
- Identify sources of inaccuracy in human data and methods for evaluating and correcting bias.
- Identify and interpret confounding and effect modification.
- Describe the potential role of genetic factors in modifying associations between environmental factors, such as diet, and disease.
- Discuss the process and limitations of inferring causality in human studies.
- Critically evaluate published nutrition research.

**Texts:**

*Required:*

*Epidemiology, 5<sup>th</sup> Edition. 2014.* By: Leon Gordis. Publisher: Elsevier Saunders. ISBN: 978-1-4557-3733-8.

*Nutritional Epidemiology: Possibilities and Limitations.* 1996. By: Lillian Langseth. Publisher: International Life Sciences Institute, ISBN 0-944398-87-1.

This text is available **free** as an e-text version, at:

[http://www.ilsa.org/Europe/Documents/C2005Typ\\_Dia-2.pdf](http://www.ilsa.org/Europe/Documents/C2005Typ_Dia-2.pdf).

*Optional:*

*Essentials of Epidemiology in Public Health, 3<sup>rd</sup> Edition.* 2014.

By: Ann Aschengrau and George R. Seage III. Publisher: Jones and Bartlett Learning. ISBN: 978-1-284-02891-1.

**Academic Conduct:** Each student is responsible for upholding the highest standards of academic integrity, as specified in the Friedman School's Policies and Procedures manual (<http://www.nutrition.tufts.edu/student/documents/policies-procedures>) and Tufts University policies (<http://students.tufts.edu/student-affairs/student-life-policies/academic-integrity-policy>). It is the responsibility of each student to understand and comply with these standards, as violations will be sanctioned by penalties ranging from failure on an assignment and the course to dismissal from the school.

**Classroom Conduct:** Upon joining this Master of Nutrition Science and Policy blended degree program, you become a member of a cohort, a learning group. Hopefully you will find the group experience provides you with a tremendous support system, a rich learning environment, and a long lasting network of colleagues to learn with and from. As a member of a cohort in an intensive experiential learning community, your consistent and complete participation is an essential and necessary component to the group's success. Absences jeopardize the academic integrity of the program as well as the quality of your and your colleague's learning experiences. Students should seek out information

themselves, from peers, and on the class site. If you do not find your answer, contact the instructors as soon as possible. Please do not wait. Faculty will answer within 48 hours.

**Assessment and Grading:**

The overall grade for the course will be based on the following:

3 problem sets	10%
Mid-term exam	20%
Final exam	20%
Online discussions (see grading info below)	30%
Final Paper Critique	20%

**Assignments and Submission Instructions:** Students will have approximately one week to complete discussion forums, problem sets, and exams. Each assignment must be completed within the specified time period. If you have an exam you should anticipate problems, and it is strongly recommended that you take the exam during hours when there is technical support available, Monday through Friday 9 am - 5pm (Eastern Time).

Assignments received after their deadline will not be accepted or graded unless an extension is approved in advance. Students who are unable to complete an assignment or exam on time for any reason should notify the instructors by email or phone prior to the deadline, with a brief explanation for why the extension is needed.

A passing grade in the course is B- or better. Course grades will be based on the below (subject to revision during the course):

- A+ >97%
- A 94 - <97%
- A- 90 - <94%
- B+ 87 - <90%
- B 84 - <87%
- B- 80 - <84%

**Accommodation of Disabilities:** Students with documented disabilities are entitled to academic accommodation appropriate to their needs. If you require accommodations for this course, please contact the instructors confidentially prior to the end of the second week of classes.

### **Discussion Forum**

Each week, the instructors will open a Discussion Forum.

1. Discussion questions will be available each week, and you will be required to post within the Discussion Forum by the end of that week.
2. Following the required submissions, you are welcome to continue the discussion!
3. Discussion Forums will be graded on a scale from 0 to 10, with 1 point for timeliness and 9 points for quality of the posting in response to the questions posed.

**Course Schedule:** (This schedule is subject to modification at the instructors' discretion)

Dates	Wk	Instructor	Topic	Assignments Due (*)
Jan 18-21	1	Singh	Approach and Evolution of Epidemiology	Discussion Forum: Opens Jan 18 12:00 am; closes Jan 21 11:59 pm
Jan 22-28	2	Choumenkovitch	Introduction to Nutritional Epidemiology	Discussion Forum: Opens Jan 22 12:00 am; closes Jan 28 11:59 pm
Jan 29-Feb 4 (RESIDENCY)	3	Choumenkovitch	Assessing Nutritional Status in Epidemiologic Studies / Overview of Study Designs	Problem Set 1: Opens Feb 4 8am; closes Feb 12 11:59 pm
	4	Singh	Experimental Studies /Epidemiologic Investigation of Chronic Diseases	
Feb 5-11			TRAVEL TIME	
Feb 12-18	5	Singh	Measures of Disease Frequency/Occurrence	Discussion Forum: Opens Feb 12 12:00 am; closes Feb 18 11:59 pm
Feb 19-25	6	Singh	Comparing Disease Frequencies	Discussion Forum : Opens Feb 19 12:00 am; closes Feb 25 11:59 pm
Feb 26-Mar 4	7	Choumenkovitch	Observational Studies: Cohort Studies and Case-control Studies	Discussion Forum: Opens Feb 26 12:00 am; closes March 4 11:59 pm
March 5-11	8	Choumenkovitch	Descriptive Epidemiology   Random Error	Discussion Forum: Opens March 5 12:00 am; closes March 11 11:59 pm
March 12-18	9	Choumenkovitch	Confounding   Energy Adjustment	Problem Set 2: Opens March 12 10:00 am; closes March 19 11:59 pm Discussion Forum: Opens March 12 12:00 am; closes March 18 11:59 pm
March 19-25	10	Choumenkovitch	Bias   Interaction	Mid-term Exam: Opens March 22 10:00 am; closes March 29 11:59 pm Discussion Forum: Opens March 19 12:00 am; closes March 25 11:59 pm
Mar 26-Apr 1	11	Singh	Genetic and Environmental Factors in Disease Causation	Discussion Forum: Opens March 26 12:00 am; closes April 1 11:59 pm
Apr 2-8	12	Sawicki	Screening in Epidemiology and Public Health	Discussion Forum: Opens April 2 12:00 am; closes April 8 11:59 pm
April 9-15	13	Singh	Estimating Risk in Analytic Studies: Is There an Association?   Causal Inference	Problem Set 3: Opens April 9 10:00 am; closes April 16 11:59 pm Discussion Forum: Opens April 9 12:00 am; closes April 15 11:59 pm
April 16-22			READING PERIOD	Final Paper Critique due May 1
April 23-April 29			FINAL EXAM	Opens April 23 10:00 am; closes April 29 11:59 pm

**\*Please note: All times refer to Eastern Time (ET)**