COURSE DESCRIPTION AND OBJECTIVES

30 hours: 3 points.

Prerequisites: E33.0019 Nutrition and Health (or equivalent undergraduate nutrition class);
E33.2190 Research Methods (or equivalent graduate level research methods class)

Fundamentals of nutritional epidemiology focused on the collection, analysis, and interpretation of data on dietary intake and nutritional status of diverse population groups. The course emphasizes critical evaluation of dietary assessment methods and the results of research studies associating intake of foods and nutrients or food consumption patterns with the risk of cancer, coronary heart disease, and other chronic diseases.

Objectives:

1. Identify dietary intake methods (e.g., 24-hour recalls, food frequency questionnaires), software for dietary data collection, and food and nutrient databases used in nutritional epidemiology research.

2. Describe the range of measures of nutritional status (e.g., anthropometric, clinical, and biochemical markers) used in nutritional epidemiology research.

3. Demonstrate knowledge of the sources and limitations of dietary survey, food supply, and food composition data, and the relevance of such data to nutritional epidemiology research.

4. Compare and contrast methods for analyzing individual dietary components (e.g., nutrients, foods, other dietary constituents such as phytochemicals, dietary supplements) vs. "total diet" measures (e.g., dietary diversity/dietary quality scores) in nutritional epidemiology research.

5. Identify common study designs used in nutritional epidemiology studies.

6. Demonstrate knowledge of statistical methods used in nutritional epidemiology studies and statistical issues that affect the interpretation of dietary data (e.g., adjustment for total energy intake, measurement error, underreporting).

7. Demonstrate the ability to critically evaluate current findings from nutritional epidemiology studies on the role of dietary factors (e.g., nutrients, foods, dietary supplements, dietary patterns) and chronic diseases such as cancer, coronary heart disease, diabetes, hypertension, obesity, osteoporosis.
REQUIRED READINGS

Research articles on Blackboard or on reserve at Bobst.

*** VERY IMPORTANT REQUIREMENTS ***
Activated NYU Home Account so you can access the NYU Blackboard course site and receive emails related to class.

Access to a printer to print out PDF of research articles – some are long.

Access to the internet from a computer that allows you to get PDF files of articles published in on-line journals at Bobst. See http://www.nyu.edu/its/howto/connect/proxy/ for NYU-NET Proxy Configuration information for your off-campus computer.

ADDITIONAL REFERENCES


** Monsen ER. Research: Successful approaches. 2nd edition. American Dietetic Association, 2003. (Available at the NYU Book Center, 18 Washington Place or on-line at www.eatright.org )


GRADING FOR E33.2192 (01) *

Midterm ~30%
Final Exam ~30%
Research Paper & Presentation ~35%
Class participation & assignments ~ 5%

* Percentages are approximate and may change as the course progresses.
DEPARTMENT POLICIES AND EXPECTATIONS FOR STUDENT PERFORMANCE

Graduates of the department receive degrees as nutrition and food professionals, and professional behavior constitutes a key component of our academic programs. The department expects all students – at any level and in any program – to:

- Attend classes.
- Come to class on time.
- Complete reading assignments on schedule.
- Complete all course assignments on time.
- Write assignments using correct format, grammar, spelling, and reference style.
- **Turn in work that meets ethical standards and is not plagiarized.**
- Take responsibility for obtaining and making up missed work.
- Finish all course work by the end of the semester.
- Inform instructors in advance if classes need to be missed.
- Provide documentation to support reasons for missing assignments.

**Ethics:** “The department believes that maintenance of high ethical standards is an important aspect of professional training. We consider plagiarism, the presentation of someone else’s written or visual work as though it were your own, to be a serious form of academic misconduct that can result in a failing grade or dismissal from the University. Students are responsible for knowing the rules and how to follow them (see any standard guide to writing term papers).”

**Grading:** Takes the above standards into consideration and applies penalties for failure to meet them. Instructors are not required to read or give a passing grade to work that is late, incomplete, or inadequately prepared.

**Incomplete grades:** The department does not permit instructors to give Incomplete grades except in documented situations of dire emergency. In such circumstances, the department requires instructors to obtain and prepare an Incomplete Grade contract form and to have it signed by the program director and the department chair.
**SCHEDULE WITH READINGS & ASSIGNMENTS**

**Notes:** Please read the background and class readings **before** class and bring copies of all articles to class so you can refer to them during the lecture and discussion.

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
<th>Background Readings</th>
<th>Readings for Class</th>
<th>Assignment</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Course overview—what is nutritional epidemiology?</td>
<td>Monsen Ch 6</td>
<td>Nelson. NCI, NIH. 2002.</td>
<td>Answer questions about the following 4 articles:</td>
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<td>Foster et al. NEJM 2003.</td>
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<td>Week 2</td>
<td>Statistics in nutritional epidemiology; Association vs causation</td>
<td>Monsen Ch 3, 8, 11</td>
<td>Same articles as listed under Week 1</td>
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<td>(Sept 14 ’06)</td>
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<td>Week 3</td>
<td>Nutritional assessment: 24-hr recalls and records, FFQs, brief screeners, serum biomarkers, anthropometrics, physical activity</td>
<td>Monsen Ch 15, 17</td>
<td>Subar et al. Am J Epidemiol 2001 + Commentaries by Willett, Block, Kipnis.</td>
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<td>Week 4</td>
<td>Nutrition surveillance (diet and food supply)</td>
<td>Monsen Ch 13, 16</td>
<td>Dwyer et al. J Nutr 2003.</td>
<td>Website activity</td>
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<td>Food and nutrient databases</td>
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<td>McCullough et al. JADA 1999.</td>
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<td>(Oct 5 '06)</td>
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<td>McCullough et al. AJCN 2002.</td>
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<td>Tucker et al. AJCN 2002.</td>
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<td>Week 6</td>
<td>Analytical issues: measurement error, underreporting, usual intake,</td>
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<td>Subar et al. AJE 2003 + Commentaries by Willett, Kipnis</td>
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<td>(Oct 12 '06)</td>
<td>energy adjustment, confounding</td>
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<td>Bingham et al. Lancet 2003 + Commentary by Prentice</td>
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<td>Flegal. AJCN 1999.</td>
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<td>Fraser. AJCN 2003.</td>
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| Week 7  
(Oct 19 ’06) | MIDTERM | | | |
| Week 8  
(Oct 26 ’06) | Studies in children  
(Including guest lecture on SchoolFoodPlus in NYC) | | Fox et al. JADA 2004.  
Other articles TBD | Student Presentations |
| Week 9  
(Nov 2 ’06) | Studies in adults  
(Including guest lecture on diet and AMD) | | Smith-Warner et al. AJE 2006.  
Park et al. JAMA 2005.  
Other articles TBD | Student Presentations |
| Week 10  
(Nov 9 ’06) | Women’s health (e.g., WHI, WHEL)  
(Including guest lecture on dietary supplement use in women) | | Howard et al. JAMA 2006.  
Cogswell et al. J Nutr 2003. | Student Presentations |
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<td>Week 11</td>
<td>Diet and obesity, metabolic syndrome</td>
<td></td>
<td>Adams et al. NEJM 2006</td>
<td>Student Presentations</td>
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<td>Millen et al. AJCN 2006.</td>
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<td>Week 12</td>
<td>Diet and heart disease, hypertension</td>
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<td>Hung et al. JNCI 2004.</td>
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<td>(Nov 30 '06)</td>
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<td>Lonn et al. NEJM 2006.</td>
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<td>Harsha et al. JADA 1999.</td>
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<td>Week 13</td>
<td>Diet and cancer</td>
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<td>Goodman et al. JNCI 2004.</td>
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<td>Garland et al. AJPH 2006.</td>
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<td>Week 14 (Dec 12 ’06)</td>
<td>Review</td>
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<td>Research Paper due</td>
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<tr>
<td>FINALS WEEK (Dec 21 ’06)</td>
<td>FINAL EXAM</td>
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<td>Class 8-9:50 PM</td>
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Research Articles listed under “Background Readings” and “Readings for Class”
(posted on Blackboard under Course Documents)

Week 1 (Sept 7 ’06)


For Assignment


Week 2 (Sept 14 ’06)
Same articles as Week 1

Week 3 (Sept 21 ’06)


Related Commentaries:


Potischman N. Biologic and methodologic issues for nutritional biomarkers. *J Nutr.* 2003;133(suppl):875S-880S.


**Week 4 (Sept 28 '06)**

Dwyer J, Picciano MF, Raiten DJ, Members of the Steering Committee. Collection of food and dietary supplement intake data: What We Eat in America-NHANES. *J Nutr.* 2003;133:590S-600S.


**Week 5 (Oct 5 '06)**


Week 6 (Oct 12 ’06)

Related Commentaries:


Related Commentary:


Week 7 (Oct 19 ’06) – MIDTERM

Week 8 (Oct 26 ’06) – Studies in Children


*Other articles TBD for guest lecture*
Week 9 (Nov 2 ’06) – Studies in Adults


*Other articles TBD for guest lecture

Week 10 (Nov 9 ’06) – Women’s Health


**Week 11 (Nov 16 ’06) – Diet and obesity, metabolic syndrome**


**Week 12 (Nov 30 ’06) – Diet and heart disease, hypertension**


Week 13 (Dec 7 ’06) – Diet and cancer


Week 14 (Dec 12 ’06) – Review

Week 15 (Dec 21 ’06) – FINAL EXAM
Websites for E33.2192 Nutritional Epidemiology

Dietary Collection and Analysis Software used for 24-hour Dietary Recalls and Food Records

- Minnesota Nutrition Data System for Research.  [www.ncc.umn.edu](http://www.ncc.umn.edu)
- University of Texas Food Intake Analysis System (FIAS).  [http://www.sph.uth.tmc.edu/hnc/FIAS/fiasbasic.htm](http://www.sph.uth.tmc.edu/hnc/FIAS/fiasbasic.htm)

Food Frequency Questionnaires

- Berkeley Nutrition Services: Fruit, vegetable, fiber screener; Fat screener (developed by Block).  [www.nutritionquest.com](http://www.nutritionquest.com)
- Dietary Assessment at the National Cancer Institute (including the Diet History Questionnaire, the Dietary Assessment Calibration/Validation Register, Fruit and Vegetable Screener, % Energy from Fat Screener).  [http://riskfactor.cancer.gov/diet/](http://riskfactor.cancer.gov/diet/)

International Sites


U.S. Dietary Guidance

- Nutrition Monitoring in the U.S. The directory of federal and state nutrition monitoring and related research activities.  [www.cdc.gov/nchswww/about/otheract/nutrishn/nutrishn.htm](http://www.cdc.gov/nchswww/about/otheract/nutrishn/nutrishn.htm)

U.S. Health and Nutrition Surveys

- National Center for Health Statistics, Center for Disease Control and Prevention (who conduct the National Health and Nutrition Examination Surveys, NHANES, and the National Health Interview Surveys, NHIS).  [www.cdc.gov/nchs/about.htm](http://www.cdc.gov/nchs/about.htm)