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### **Course Description**

This course is designed to provide graduate students with an overview of nutritional epidemiology methods. Research has established links between diet and nutrition and chronic disease however these relationships are complex and affected not only by individual diet and lifestyle factors, but social and political factors as well. The purpose of this course is to examine methods used in nutritional epidemiological studies, and to review the current state of research into the causes, patterns and amelioration of nutrition-related diseases.

### **Credits/ Modes of Instruction/ Course Platform**

This is a 3 credit, web-based course held on the Canvas Platform. This course relies heavily on completion of regular activities, assignments, and discussions of weekly topics. Students are expected to log on and participate in course activities, lectures and discussions and to complete weekly reading assignments.

### **Prerequisites**

None

**Course Director:** Joachim Sackey, PhD [joachim.sackey@rutgers.edu](mailto:joachim.sackey@rutgers.edu) 973-972-6245  
**Co-Instructor:** Shristi Rawal, PhD [shristi.rawal@rutgers.edu](mailto:shristi.rawal@rutgers.edu) 973-972-2710

### **Program Office**

Phone 973-972-8525

Fax 973-972-7403

### **Course Goals and Objectives:**

#### **Goals**

The goal of this course is to provide the student with an overview of nutritional epidemiology and an understanding of the issues specific to studying the etiology of nutrition-related health outcomes. The course will provide students with a framework through which to critically evaluate epidemiologic studies of nutrition-related health outcomes and the implications of research findings for public policy and health interventions.

#### **Objectives**

**At the completion of this course, each student should be able to:**

1. Demonstrate an understanding of the principles of nutritional epidemiology and basic epidemiologic study designs;
2. Describe the utility and limitations of different epidemiological study designs for research in nutritional epidemiology
3. Explain and interpret the statistical methods and measures of associations commonly used in nutritional epidemiology to analyze diet-disease associations.
4. Critically evaluate published epidemiologic studies of nutrition-related health outcomes;

5. Describe the purpose, strengths and weaknesses of various dietary assessment methodologies and select the most appropriate method for a given research question, study design or a population
6. Provide an overview of the distinction between evaluating foods vs. nutrients and when each might be utilized in epidemiological studies
7. With respect to nutritional epidemiology, explain possible sources of bias and confounding and describe methods for minimizing or adjusting for them.
8. Demonstrate an understanding of the many factors (including the social, environmental and political) that impact the occurrence of nutrition-related diseases and their associated health outcomes and how epidemiologic evidence may be used to influence change.

**This course contributes to the fundamental knowledge and skills required to meet the following public health concentration competencies:**

- 1) Assess the nutritional status of communities [through the diet assessment activity/assignment]
- 2) Demonstrate the use of evidence-based knowledge to study the relationships between diet, nutrition and health outcomes across the life span [through the research proposal assignment]
- 3) Utilize appropriate assessment methodologies to identify and prioritize diet and nutritional problems for diverse population groups [through the diet assessment activity/assignment]

### **Course Requirements and Grade Determination**

<b>Requirements</b>	<b>Weight (%)</b>
Weekly participation in class activities (individual grade)	5
Weekly reflection assignment [individual]	20
Diet assessment assignment (individual grade)	20
Nutritional Epidemiology in the media presentation (individual grade)	15
Debate (group grade)	15
Nutritional epidemiology research proposal (individual grade)	25
<b>TOTAL</b>	100

### **Requirements for Completion**

Students are expected to complete all readings and assignments as due and review lecture content during each week in order to maximize learning and contribute to interactive discussions. *Students are also expected to attend and participate in all live sessions.*

All assignments should be submitted as word documents except presentations which should be PowerPoint slides.

## Assessment Methods / Description of Assignments

### 1. Weekly participation in class activities

It is vital that students do not miss out on interpersonal interaction and discussion. Each week as the class materials are posted in Canvas, there will be discussion and debate of issues during live sessions. Each student should participate fully in discussions by coming prepared to live sessions having read assigned readings and lecture slides.

### 2. Weekly reflection of posted material

Each week, you will submit a 150-200-word reflection on an assigned resource posted in Canvas. The resource may be video lectures posted or readings.

### 3. Diet assessment activity/assignment

Students will individually complete 4 dietary assessment methods posted in Canvas. Afterwards, they will write a brief reflection/report on advantages and disadvantages of various techniques from the view of the subject (ie using the diet assessment tool). Students will also reflect on their experiences during a live class session.

Specific guidelines for this assignment will be posted in Canvas.

This assignment meets the following Public Health Nutrition competencies:

- Assess the nutritional status of communities
- Utilize appropriate assessment methodologies to identify and prioritize diet and nutritional problems for diverse population groups

### 4. Nutritional Epidemiology in the media presentation

Students will individually identify an article published in the media (newspaper or online news site) based on a nutritional epidemiology topic. They will then find the scientific article on which the news story was based on, critique the article and present their critique.

Specific guidelines for this assignment will be posted in Canvas.

### 5. Debate

Working in teams, students will be divided into groups to debate topic(s).

Specific guidelines for this assignment will be posted in Canvas.

### 6. Nutritional epidemiology research proposal

Students will work individually to develop a brief research proposal in the form of an NIH specific aim page (1 page) on a nutrition topic of interest.

Specific guidelines for this assignment will be posted in Canvas.

This assignment meets the following Public Health Nutrition competencies:

- Demonstrate the use of evidence-based knowledge to study the relationships between diet, nutrition and health outcomes across the life span.
- Utilize appropriate assessment methodologies to identify and prioritize diet and nutritional problems for diverse population groups.
- Assess the nutritional status of communities

Evidence of plagiarism may result in a grade of zero on the assignment, as well as failure of the course and disciplinary action according to SHP procedures. For further information you can consult the School of Health Professions' policy on disciplinary procedures at <https://shp.rutgers.edu/disciplinary-process/> as well as the SHP Faculty and Student Honor Code: <https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/PDFs/6.5%20FACULTY%20and%20STUDENT%20HONOR%20CODE.pdf>.

### **Feedback on Progress**

Grades for the homework assignments will be posted in Canvas as soon as they are available. If there are any questions about progress in the course students should reach out to the instructor.

### **SHP Grading Policy**

The SHP grading policy is available at: [https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/policy\\_view.cfm?view=P&coding=3.0](https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/policy_view.cfm?view=P&coding=3.0). Please note that there is no rounding of grades per the grading policy.

You may also refer to the SHP Student Handbook at <https://shp.rutgers.edu/wp-content/uploads/Student-Handbook-2019-2020.pdf>

Grade	Graduate Scale	Quality Points
A	93.0-100	4.0
A-	90.0-92.9	3.7
B+	87.0-89.9	3.3
B	83.0-86.9	3.0
B-	80.0-82.9	2.7
C+	77.0-79.9	2.3
C	73.0-76.9	2.0
C-	70.0-72.9	1.7
D+	67.0-69.9	1.3
D	63.0-66.9	1.0
F	<63	0.0

### **General Learning Resources**

#### **Required Textbook**

- Walter Willett. 2013. Nutritional Epidemiology, 3rd Edition. New York: Oxford University Press. ISBN: 0-19-975403-8.
  - The Rutgers library has an electronic version of the required Willett textbook at this url [<https://oxford-universitypressscholarship-com.proxy.libraries.rutgers.edu/view/10.1093/acprof:oso/9780199754038.001.0001/acprof-9780199754038>]

## Other Required Learning Resources

Students must have a computer with Microsoft Office, internet access, a headset with built in microphone and webcam for use with Zoom for live sessions.

Additional reading materials and resources will be posted weekly on the Canvas course page.

## Course Units/Schedule

- This schedule is a plan only, subject to change by the instructor as deemed necessary to achieve the course goals.
  - Whenever possible, you will be notified in advance of any changes, especially those affecting course requirements or grading.
- The course will meet **EVERY WEEK in Zoom on THURSDAYS 7-8.30pm EST.**
  - Link to the Zoom Meetings:  
<https://rutgers.zoom.us/j/98771200242?pwd=ZzFEQjR1MHROamk0M0FFRTZlQWRFdz09>
  - Meeting ID: 987 7120 0242
  - Password: 972871

## Camera use during Zoom sessions

This class is heavily dependent on discussions and interactions and to support this, we are **requesting** that you turn on your device camera so that we can do our best to duplicate the in-class environment. Seeing each other's faces, knowing that we are all engaged, and in this together can really help with that. We know that it's hard to stay engaged and energetic in zoom, but it's even more difficult to do so when looking at a sea of black and white names. You can use a virtual background or blur your background if you don't want to show what is behind you. We are flexible and know that you may not be able to have your camera on 100%. We request in those instances, to please let us know ahead of time. Additionally, In the instances that your camera is off (again, we ask that this be as limited as possible), please engage with us and your classmates. We encourage you to speak up and use the chat function to offer your thoughts, ask any questions or provide any feedback. Keep in mind that better interaction in the classroom almost always means better outcomes in the class. It's good for you. It's good for your classmates.

## Late submission

You are expected to submit all assignments by the due date listed. You will use points for each day a submission is late.

## Weekly Outline

Week	Dates of live zoom meetings	Topical Outline	Activities / Assignments
1	Sept 1	Welcome and an overview of Nutritional Epidemiology	Review syllabus and assignment instructions. Join a debate group by September 12. Select & submit a topic for research proposal assignment by September 19. Submit your Nutrition Epi in the media topic by September 26.
2	Sept 8	Epidemiologic study designs	
3	Sept 15	Dietary assessment methods	
4	Sept 22	Nutrition Biomarkers	Dietary assessment assignment due Sept 27 <sup>th</sup>
5	Sept 29	Discussion/reflection on student experiences of advantages and disadvantages of various diet assessment methods.	Diet assessment assignment reflection & discussion
6	Oct 6	Energy intake validation, energy adjustment, dietary over-and-under reporting	
7	Oct 13	Anthropometrics and Body Composition	Oral presentation of research proposals for feedback
8	Oct 20	Measurement validity and reliability of physical activity	
9	Oct 27	Issues in analysis and presentation of dietary data	Nutrition Epi in the Media presentations
10	Nov 3	Role of systematic reviews, meta-analysis and umbrella reviews in nutritional epidemiology	Debate day
11	Nov 10	Precision Nutrition [Guest lecture by Dr. Karyn N. Onyeneho] Hopefully 2 <sup>nd</sup> guest lecture on Gut Microbiome	
12	Nov 17	Dietary patterns [Lecture by Dr. Rawal]	
13	Nov 24	<b>Thanksgiving week. No lecture.</b>	<i>Independent work to finalize research proposal assignment.</i>
14	Dec 1	Nutrition monitoring and surveillance [Lecture by Dr. Rawal]	Written research proposal assignment due December 1 <sup>st</sup>
15	Dec 8	Translating Nutritional Epidemiology findings into Health Policy	

## **Course Evaluations**

Students have the opportunity to evaluate the entire course and instructors upon its completion. Student feedback is very important, as it will be used to improve this course and the educational experience. All responses are kept anonymous and CONFIDENTIAL. The evaluation is conducted as a survey and will be sent to you via Rutgers email later on in the semester.

## **School and program policies**

- Please refer to the ELMSCN Program Handbook.
- Please refer to the SHP Student Handbook at <https://shp.rutgers.edu/wp-content/uploads/Student-Handbook-2019-2020.pdf>.
- Please refer to the SHP Grading Policy, available at: <https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/PDFs/3.0%20GRADING%20SYSTEM%20POLICY.pdf>.

## **Faculty/Student Honor Code and Academic Integrity**

The Faculty/Student Honor Code is posted on the SHP website within the online SHP Student Handbook. The faculty of RBHS-School of Health Professions believe that students must observe and support high standards of honesty and integrity in all aspects of education, practice, and research. For this reason, all matriculated and non-matriculated students in this course are expected to abide by the School's Faculty/Student Honor Code and accept responsibility to help ensure that these standards are maintained by reporting violations of the Honor Code observed in others. All violations will be considered with gravest concern and may be punishable with sanctions as severe as suspension or dismissal.

The complete SHP Academic Standing – Probation, and Dismissal Policy can be found at: [https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/policy\\_view.cfm?view=P&coding=3.1](https://apps.shp.rutgers.edu/projects/shrpweb-cf/policies/policy_view.cfm?view=P&coding=3.1)

## **Professional Behavior**

Students are expected to conform to established standards and civil, social, and professional behavior. Violations will be considered with the gravest concern and may be punishable with sanctions as severe as suspension or dismissal. Please consult the Code of Student Behavior in the Student Handbook for prohibited actions <https://shp.rutgers.edu/wp-content/uploads/Student-Handbook-2019-2020.pdf> as well as [Zoom Etiquette](#).

## **Attendance**

Students are expected to attend all classes. Students are expected to adhere to the stated attendance and participation policies for each course and for the specific program in which they are enrolled. For distance-based learning platforms, students are expected to attend and participate in scheduled online chats and/or discussion boards as well as “live” meetings or in-person sessions, as indicated by the course faculty.

Students are responsible for all material covered in classes. Absent students are responsible for obtaining all material covered in missed sessions. Students should be cognizant of this if absences occur during the semester and should consider planning vacations/time away in-between semesters as course faculty may not release course content early or may not allow late submission of work or retake of exams. When illness or other special circumstances prevent attendance, students should inform their course faculty/director in advance or as early as possible and may be asked to provide appropriate documentation.

## **Turnitin**

*Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Sakai, Blackboard, Canvas, Moodle) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.*

You will be required to evaluate any written manuscripts through TURNITIN for plagiarism prior to submitting it for grading. A TURNITIN link is embedded in the course with instructions for doing so. Plagiarism is considered a serious offense. If you are unsure of what constitutes plagiarism, review the plagiarism tutorial located at <https://plagiarism.iu.edu/index.html>. Students who plagiarize will receive a zero for the assignment.

### **Publication or Submission of Coursework for a Grant or Manuscript**

If you submit a paper that was completed as part of a course at Rutgers for publication, you are encouraged to communicate with the course director and any other faculty reviewers of your paper regarding their interest as serving as a co-author. If the faculty agrees to serve as co-author(s) then it is the student's responsibility to obtain their review and approval of the paper prior to its submission to the publication. Non-compliance will be considered a professional behavior violation. Regardless, the student is expected to indicate that the manuscript was prepared as part of course requirements while at Rutgers School of Health Professions as part of the degree process. University affiliation for publications/abstracts/posters/presentations should be listed as "School of Health Professions' Department of Clinical and Preventive Nutrition Sciences at Rutgers University". Posters/presentations must be completed using the Rutgers template or logo which can be found at: <http://identity.rutgers.edu/>.

### **Suggested Writing Resources**

This course relies on the ability to communicate concepts clearly in a written format as well as follow guidelines for proper grammar and sentence structure. It is expected that all written assignments follow appropriate grammatical, spelling, and referencing rules, and are free from plagiarism. Assignments with excessive grammatical and writing errors will receive a lower grade. If you need assistance with writing, we encourage you to get a writing tutor to assist you as writing is a critical skill in graduate education and for professional communication in the nutrition and dietetics profession. The Rutgers Biomedical and Health Sciences (RBHS) Writing Center (<https://sasn.rutgers.edu/student-support/tutoring-academic-support/writing-center/satellite-writing-centers/rbhs-writing-center>) offers writing assistance to distance and local students. [See the handout for more details.](#) There are also tutorials available at: [http://www.libraries.rutgers.edu/health\\_sciences\\_distance\\_learning/tutorials](http://www.libraries.rutgers.edu/health_sciences_distance_learning/tutorials) as well as further resources available in the Online Student Resource Center in Moodle

### **EndNote**

EndNote is a software program that works with Microsoft Word to automatically format in-text citations and end-of-paper reference lists with your chosen style (APA, AMA, etc.). EndNote can also be used as a database to gather and store citation libraries. We highly suggest that you become familiar with EndNote. Rutgers is licensed to provide download access of EndNote for Rutgers affiliated users. EndNote is a bibliographic software program used to search Internet libraries, organize references and create instant bibliographies. EndNote enables you to collect and download your references from online catalogs and databases for inclusion in presentations and papers. After downloading the program from the Rutgers Virtual Library available at <https://www.libraries.rutgers.edu/endnote> you will need to install the EndNote program. There are tutorials on how to use EndNote available at the Rutgers library as well as at <http://www.endnote.com>.

### **Program Online Examination Policy**

Students taking the Online Courses are solely responsible for having a working computer and internet connection. Computer crashes and internet connection problems are not valid excuses for failing to complete any required course work within the course time limits; this applies to finishing a quiz or examination within the allotted time as well as submitting assignments before the deadline. It is highly recommended that students make arrangements to have access to a second computer to complete their course work in case of an emergency; either at their own residence, a friend's residence, a local library or in one of the computer labs on campus.

### **Office of Disability Services (ODS)**

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://shp.rutgers.edu/disability-services/>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the Rutgers Office of Disability Services web site at: <https://webapps.rutgers.edu/student-ods/forms/registration>