

SYLLABUS
11:709:404 Advanced Nutrition: Clinical Research Practicum
Day and Time: TBD
Location: TBD

Canvas Site: 11:709:404 ADVANCED NUTRITION: CLINICAL RESEARCH PRACTICUM

Instructor: TBD

Office: TBD

E-mail: TBD (preferred form of communication)

Phone: TBD

Office Hours: TBD

Overview: This course is designed as a co-requisite to NUTR 400 - Advanced Nutrition: Macronutrients (11:709:400) and is intended primarily for dietetics students. Building on fundamental aspects of nutritional biochemistry and physiology covered in 11:709:400, this course focuses on critical review of evidence-based literature that informs nutrition and dietetics practice guidelines. Emphasis is on understanding the strengths and limitations of different epidemiological and clinical study designs and interpretation of empirical research findings from such studies in the context of biological plausibility.

Course Objectives/Learning Goals:

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

1. Identify credible sources of current evidence and nutrition information on specific disease states using the Academy of Nutrition & Dietetics Evidence Analysis Library.
2. Connect empirical research findings to biochemical and physiological mechanisms that allow for interpretation of such findings in the context of biological plausibility.
3. Identify and understand the strengths and limitations of clinical and epidemiological study designs, including ecological, cross-sectional, cohort, prospective, retrospective, and intervention studies (including randomized controlled trials), as well as meta-analyses in the context of macronutrients and health.
4. Understand how to interpret and rate the strength of empirical evidence that derives from such studies.

Course Meetings: This is a 1 credit course that will meet once per week for 10 weeks (80 minutes per class). See course schedule below.

Course Materials: Readings will be provided as pdf documents through the Canvas site and will consist of review articles and primary research articles. All reading assignments will be assigned 1 week in advance and expected to be completed before the next course meeting. Lecture and discussion during the next course meeting will focus on the assigned readings.

Online Quizzes: There will be quizzes assigned online through the Canvas site (8 quizzes each worth 10 points, for a total of 80 points). These quizzes will focus on testing and reinforcing terminology, basic concepts, and key aspects of assigned readings.

Exams: There will be no exams in this course.

Written Assignment: A written assignment (worth 50 points) will be due on the last day of class (class #10). This assignment will consist of a series of prompts focused on the key aspects of a research article that inform the interpretation of that study. These prompts will emphasize the main learning goals of the course. Written assignments received on time (by end of class #10) will be graded and returned to the students 1 week before the end of the semester. Students wishing to revise their written assignment based on the instructor's comments may do so. The due date for revised assignments will be the last day of classes for the semester.

Attendance and Class Participation: Discussion and class participation will be important components of the course. Classes will not be recorded. Attendance and class participation will be worth 2 points per class for a total of 20 points.

Grading: Grades will be calculated on a point system.

Quizzes	80 points
Written Assignment	50 points
<u>Attendance/Class Participation</u>	<u>20 points</u>
Total Points	150 points

Final Grade Allocation: There will be NO negotiating of grades. Final grade ranges are:

A = 91-100% (136-150 points)	C = 71-75% (106-113 points)
B+ = 86-90% (129-135 points)	D = 61-70% (91-105 points)
B = 81-85% (121-134 points)	F <61% (0-90 points)
C+ = 76-80% (114-120 points)	

Academic Integrity: The principles of academic integrity require that a student:

- make sure that all work submitted in a course, academic research, or other activity is the student's own and created without the aid of impermissible technologies, materials, or collaborations.
- properly acknowledge and cite all use of the ideas, results, images, or words of others.
- properly acknowledge all contributors to a given piece of work.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with the student's interpretation or conclusions.
- treat all other students ethically, respecting their integrity and right to pursue their educational goals without interference. This principle requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the ethical standards and professional code of conduct in the field for which the student is preparing.

Please read the full Rutgers University Academic Integrity Policy, effective June 2, 2020, at <http://academicintegrity.rutgers.edu/>.

2022 Core Knowledge for the RDN (KRDN) – Standards for Didactic Programs in

Dietetics: Rutgers University Department of Nutritional Sciences undergraduate Didactic Program in Dietetics is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (AND). The following ACEND Core Knowledge aptitudes are included within the curriculum of this course:

1. KRDN 1.1: Demonstrate how to locate, interpret, evaluate and use professional literature to make ethical, evidence-based practice decisions.
2. KRDN 1.3: Apply critical thinking skills.

Both KRDNs will be met through reading and interpreting research articles, and judging the strength of empirical evidence in the context of biological plausibility.

Course Schedule: The course consists of 10 class meetings of 80 minutes spread out over a 14-week semester.

Week	Topics
1	Course Overview; Review of Clinical and Epidemiological Study Designs; Determining Causality; Introduction to the AND Evidence Analysis Library
2	Fiber/Microbiome/Short-Chain Fatty Acids Quiz #1 Due
3	Glucose/Sodium/Rehydration Quiz #2 Due
4	No Class (400 Exam 1 Week)
5	Gluten/Celiac Disease/FODMAPS Quiz #3 Due
6	Protein Requirements in Aging/Sarcopenia Quiz #4 Due
7	Protein/Phenylketonuria Quiz #5 Due
8	No Class (400 Exam 2 Week)
9	Fat Absorption/Cystic Fibrosis Quiz #6 Due
10	Fatty Acid Oxidation/MCAD Deficiency Quiz #7 Due
11	Trans Fats/Heart Disease Quiz #8 Due
12	Special Topics/Course Summary Written Assignment Due
13	No Class Graded Written Assignment Returned/Opportunity to Revise and Resubmit
14	No Class Written Assignment Revisions Due

Plan for Assessment of Course Learning Goals & Evaluation Criteria

Learning Goals

1. Identify credible sources of current evidence and nutrition information on specific disease states using the Academy of Nutrition & Dietetics Evidence Analysis Library.
2. Connect empirical research findings to biochemical and physiological mechanisms that allow for interpretation of such findings in the context of biological plausibility.
3. Identify and understand the strengths and limitations of clinical and epidemiological study designs, including ecological, cross-sectional, cohort, prospective, retrospective, and intervention studies (including randomized controlled trials), as well as meta-analyses in the context of macronutrients and health.
4. Understand how to interpret and rate the strength of empirical evidence that derives from such studies.

Assignments

1. Quizzes (~50% of the total grade): There will be 8 weekly quizzes worth 10 points each (total of 80 points for the course). The quizzes will be a mixture of multiple choice and short answers, and will be administered online through the course Canvas site. They will be assigned at the end of each class and will be due before the next class meets. The quizzes will be designed to reinforce key concepts covered during lecture in the previous week's class meeting. Quizzes for all students will be reviewed and graded by the course instructor. The quizzes are designed to address learning goals 1, 2, and 3.

Example of a quiz question:

What kind of study was performed in the Smith et al paper?

- a. Cross-sectional Cohort
- b. Prospective Cohort
- c. Retrospective Cohort
- d. Randomized Control Trial

2. Attendance and Participation (~15% of the total grade): Attendance and participation will be mandatory and worth 2 points per class (total of 20 points for the course). Attendance and participation will be recorded via in-class poll questions administered through the Canvas site that require the students to be present during the lectures. The poll questions will not be graded, but students will be required to provide an answer to the poll questions and the correct answers will be displayed and discussed. Attendance and participation for all students will be reviewed by the course instructor. Attendance and participation are designed to reinforce learning goals 1, 2, and 3.

Example of an in-class poll question:

In the Smith et al paper, what was measured in the blood that was associated with cardiovascular disease?

- a. Total cholesterol
- b. LDL Cholesterol
- c. HDL Cholesterol
- d. Triglycerides
- e. All of the above

3. Written Assignment (~33% of the total grade): This assignment is worth 50 points and will consist of a series of prompts focused on the key aspects of a research article (chosen from a list provided by the instructor) that inform the interpretation of that study. These prompts will emphasize the main learning goals of the course. Written assignments received on time (by end of class #10) will be graded and returned to the students 1 week before the end of the semester. Students wishing to revise their written assignment based on the instructor's comments may do so. The due date for revised assignments will be the last day of classes for the semester. The written assignment will be reviewed and graded by the course instructor. The written assignment is designed for the students to utilize what they have learned in relation to learning goals 1, 2, and 3, to then address learning goal 4.

Example of written assignment prompts:

For the research article that you have chosen, please answer the following:

- a. What research question does the study address? What is the hypothesis that is tested? What is the scientific basis for the study?
- b. What kind of study was conducted? Summarize the study design. What is the primary independent variable? What are the covariates? What is the primary outcome (dependent variable)? What are the secondary outcomes?
- c. What were the main findings of the study? What did the investigators conclude based on their results?
- d. Based on the study design and the results, what is the strength of the study? Discuss whether the findings are definitive enough to change clinical practice or personal behavior or if additional studies are required.

Evaluation Criteria

All students in the class will be assessed for achieving the learning goals. The Instructor will grade the quizzes and the written assignments. Students with a grade of at least 71% (C grade) will be considered to have achieved the student learning goals.

Plans to Use Assessment Results

At the end of the semester the instructor will review the class performance on the quizzes and written assignment. The goal will be for >90% of the students in the class to achieve a C grade or higher. If the class falls below this threshold, then lecture content and preparation of the students for the written assignment will be reassessed to emphasize areas in which the class was falling short of the learning goals.