

University of Puerto Rico
Río Piedras Campus
College of Natural Sciences
Nutrition and Dietetics Program

NUTR 4198 – Research Methods in Nutrition

Professor: Elsa Pinto López, PhD, RD, LND

Physical Office: Edificio Janer # 107

Office hours: Mondays 11-2 pm, Wednesdays 11-2 and Thursdays 1-3 pm

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Course Prerequisites:

MATE 3026, NUTR 4041

1. Course description: This course includes the presentation and application of knowledge and skills in the process of conducting research in nutrition. It focuses on the development of critical analysis skills in the areas of study design, statistical analysis, organization and presentation of data and the presentation of the final report in the context of research within the field of food and nutrition.

Descripción del curso: Este curso incluye la presentación y la aplicación de los conocimientos y las destrezas básicas en el proceso de investigación en el campo de la nutrición. Se enfoca en el desarrollo de las destrezas de análisis crítico en las áreas de diseño de estudios, la aplicación de métodos estadísticos, la organización y la interpretación de datos, y la presentación del informe final en el contexto de las investigaciones en el área de los alimentos y la nutrición

Credits: 2

Required Text:

Monsen, E., Van Horn, L. (2008). *Research: Successful Approaches*. (3rd edition). American Dietetic Association.

Steinberg, W., (2008). *Statistics Alive*. California: Sage Publications.

Other suggested texts:

Polit, D. F. & Hungler, B. P. (2000). *Investigación científica en*

ciencias de la salud:

Principios y métodos. (6th ed.). (Trad. Roberto Palacios Martínez & Guillermina Féher de la Torre). México: McGraw-Hill Interamericana.

Salkind, N.J. (2010). *Statistics for people who think they hate statistics.* 4rd Ed. California: Sage Publications.

Trochim, W.M. (2007). *The Research Methods Knowledge Base.* 3rd edition. Ohio: Atomic Dog Publishing.

Course Objectives:

Upon completion of the course NUTR 4198, each student should have acquired the knowledge to:

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1. Analyze and discuss the components of the investigative process such as development of the research question, review of the published scientific literature, formulation of the objectives and/or hypothesis, selection of the proper study design including the population to be sampled, collection and analysis of data (methods for), and presentation of the final report.

2. Use scientific literature databases to search for research studies and reports related to the dietetics profession.

3. Compare and contrast various study designs and statistical analysis for qualitative and quantitative study designs used in nutrition research.

4. Value the importance of ethical conduct in all areas of research, specifically in the methods and study design for studies in nutrition with human or animal subjects.

5. Develop a research project focused in food and nutrition.

6. Demonstrate basic skills of statistical analysis for qualitative and quantitative data using computerized statistical software.

7. Apply basic skills to interpret statistical analysis from studies within the field of food and nutrition.

8. Conduct a reflective exercise of their performance in the course.

9. Contribute effectively in the inclusion of disabled students in the activities of the course.

Skills to be developed during course after completing learning activities (Student Learning Outcomes):

1. Demonstrate effective and professional oral and written communication and documentation and use of current information technologies. (2.1a)
2. Demonstrate how to locate, interpret, evaluate and use professional literature to make ethical evidence-based decisions. (1.1a)
3. Able to develop outcome measures, use informatics principles and technology to collect and analyze data for assessment and evaluate data to use in decision-making. (4.2.b)

Mission of the Didactic Program in Dietetics:

The mission of the Didactic Program in Dietetics is to provide the academic preparation necessary to form Nutritionists-Dietitians qualified to offer educational, administrative and clinical services in medical nutritional therapy and in the management of food service systems. The Program capacitates professionals to work in different scenarios within an ever-changing and culturally diverse society. The integration of knowledge and skills specialized in foods and nutrition will permit the graduates to promote the general welfare of the individual, the family and the community, helping them to obtain optimal nutrition in health or in sickness throughout their life cycle.

Student Information Regarding Law 51:

Students who receive Vocational Rehabilitation should communicate with the professor at the beginning of the semester in order to plan for reasonable accommodation and/or acquisition of needed special equipment, according to the recommendations of the Office for Persons with Impediments of the Deanship of Student Affairs (Oficina de Asuntos para las Personas con Impedimentos, OAPI, del Decanato de Estudiantes).

Student Evaluation:

Activity	%Final grade
Class Participation in discussion forums and other communications	20%
Assignments	25%
Quizzes (10 pts. each)	25%
Course project - research proposal	30%
TOTAL	100%

Course project - Development of a Research Proposal:

Each student will develop a research proposal throughout the course as we study the individual components of research and statistics. For example, when we study the statement of the research question, you establish your research question and turn it in for evaluation. As we study the next component, such as the literature review, the process will continue. Each student should maintain a personal copy of document, because the final reports will be turned in as a growth all revised documents. Final project must include adequate citations throughout the text and references in APA style. More information on the format of the final project will be provided during the semester.

Plagiarism:

Your written assignments (course project and extra credit) should be your intellectual work. Plagiarism, or presenting the words or ideas of another person as your own, is a form of fraud and will not be tolerated. Papers containing plagiarism will automatically receive the grade of "F". Other examples of plagiarism include cutting and pasting from the web - when you are specifically asked to state something in your own words. This is inappropriate even if you cite where you got the information. When you are requested to synthesize the information from a literature source - it must be in your own words and not a quote. The objective is to have the students demonstrate that they can understand the information gleaned from the literature sufficiently to present the information in their own words.

Format for projects and assignments

All projects or assignments to be hand in to professor must include the following information:

- Name
- Student number
- Date
- Professor
- Course ID
- Description of assignment

Assignments handed in after the established deadline will have a 5% deduction of the total grade for each day after the due date. Assignments

over a week late will not be received.

Learning experiences

Teaching methods include conferences using Power Point slides to demonstrate formulas and data analysis concepts. Discussion forums, readings of journal articles, videos and data analysis exercises.

Sending emails to professor

All emails to professor should contain the following information in the SUBJECT LINE: Course ID and section (NUTR 4198), your name and last name. The email should have a salutation line (Professor,) and should have your full name and student number at the end of the email.

Course policies and expectations:

- Your participation in class is vital for successful learning, particularly in the research setting. Your participation includes your attendance to scheduled chats and virtual discussions, and your written contributions in the chats or discussion forums.
- For purposes of the course the week begins on Wednesdays and ends on Tuesday. Deadline to send completed course work for that day must be on Tuesday no later than 11:59 pm. After this time it will be considered late.
- All course work must use APA style of referencing when applicable. All instructions are available in Blackboard including rubric and evaluation criteria.
- Professor will respond to email communications within 24 hours. If you wish to speak with professor or schedule an appointment you may email your request to schedule an appointment during office hours.

"Extra Credit" (optional):

Identify five words you are not familiar with from the Statistical Analysis section and or the Methods section of a peer-reviewed journal article. Search for the definition of the word in your textbooks or other statistical references that will help you describe and explain each word in detail. Prepare a presentation to hand in that includes the following:

- Complete reference of article in APA format,
- Brief description of study,
- Definition and explanation of each word,
- References used

One article per student for extra credit is allowed during the semester. Extra credit can be used to improve your overall course grade by 3%.

Breakdown of Grade:

90 - 100	A	60 - 69	D
80 - 89	B	< 59	F
70 - 79	C		

Last day to withdraw from course

June 6 with 100% de reimbursement and june 8 for 50% de reimbursement

Selected General References:

Al-Mauzouki S, Evans S, Marshall T, Roberts L. (2005). Are these data real? Statistical methods for the detection of data fabrication in clinical trials. *British Medical Journal*. Jul 30;331 (7511):267-70.

Basiotis, P. P., Carlson, A., Gerrior, S., Juan, W., & Lino, M. (2002). The Healthy Eating Index: 1999-2000 (No. CNPP-12): USDA.

Caan B, Ballard-BarbashR, Slaterry M L, (2004) Low energy reporting may increase in intervention participants enrolled in dietary intervention trials. *Journal of the American Dietetic Association*. 2004 Mar;104(3):357-66; quiz 491.

Carpenter, K. J., Harper, A. E., & Olson, R. E. (1997). Experiments that changed nutritional thinking. *The Journal of Nutrition*, 127, 1017S-1053S.

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Centers for Disease Control. (2003). Behavioral Risk Factor Surveillance System: Centers for Disease Control. <http://www.cdc.gov/BRFSS/>

Chambers, E. t., Godwin, S. L., & Vecchio, F. A. (2000). Cognitive Strategies for Reporting Portion Sizes Using Dietary Recall Procedures. *Journal of the American Dietetic Association*, 100(8), 891-897.

Conway, J., Ingwersen, L., Vinyard, B., & Moshfegh, A. (2003). Effectiveness of the US Department of Agriculture 5-Step Multiple-Pass Method in Assessing Food Intake in Obese and Nonobese Women. *American Journal of Clinical Nutrition*, 77(5), 1171-1178.

Conway, J. M., Ingwersen, L. A., & Moshfegh, A. J. (2004). Accuracy of

- Dietary Recall Using the USDA Five-Step Multiple-Pass Method in Men: An Observational Validation Study. *Journal of the American Dietetic Association*, 104(4), 595-603.
- Conway, R., Robertson, C., Dennis, B., Stamler, J., & Elliott, P. (2004). Standardised Coding of Diet Records: Experiences from Intermap UK. *British Journal of Nutrition*, 91(5), 765-771.
- Cook, A., & Friday, J. (2004). Pyramid Servings Database for USDA Survey Food Codes Version 2.0. Beltsville MD: USDA, ARS, Community Nutrition Research Group.
- Daniel, W. (1991). *Biostatistics: A foundation for analysis in the health sciences*. New York: John Wiley & Sons.
- Dodd, K. W., Guenther, P. M., Freedman, L. S., Subar, A. F., Kipnis, V., Midthune, D., et al. (2006). Statistical Methods for Estimating Usual Intake of Nutrients and Foods: A Review of the Theory. *Journal of the American Dietetic Association*, 106(10), 1640-1650.
- Freudenheim, J. (1999). Study Design and Hypothesis Testing: Issues in the Evaluation of Evidence from Research in Nutritional Epidemiology. *American Journal of Clinical Nutrition*, 69(suppl), 1315-1321.
- Guenther, P. M., Reedy, J., Krebs-Smith, S. M., Reeve, B. B., & Basiotis, P. P. (2007). Development and Evaluation of the Healthy Eating Index-2005: Technical Report.
- Institute of Medicine of the National Academies. (2006). *Dietary Reference Intakes; the Essential Guide to Nutrient Requirements*. Washington, D.C.: National Academy Press.
- Johnson, R., & Hankin, J. (2003). Dietary Assessment and Validation. In E. Mosen (Ed.), *Research; Successful Approaches* (2nd Edition ed., pp. 227-242). Washington, DC: American Dietetic Association.
- Johnson, R. K. (2002). Dietary Intake--How Do We Measure What People Are Really Eating? *Obesity Research*, 10 Suppl 1, 63S-68S.
- Keppel, K. G. (2004). *Measuring Progress in Healthy People 2010*. [Hyattsville, MD]: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.
- Michels, K. B., Welch, A. A., Luben, R., Bingham, S. A., & Day, N. E. (2005). Measurement of Fruit and Vegetable Consumption with Diet Questionnaires and Implications for Analyses and Interpretation. *American Journal of Epidemiology*, 161(10), 987-994.
- Michels, K. B. (2003). *Nutritional Epidemiology--Past, Present, Future*.

International Journal of Epidemiology, 32(4), 486-488.

- Palaniappan, U., Cue, R. I., Payette, H., & Gray-Donald, K. (2003). Implications of Day-to-Day Variability on Measurements of Usual Food and Nutrient Intakes. *The Journal of nutrition*, 133(1), 232-235.
- Rock, C., & Lampe, J. (2003). Biomarkers in Nutrition Research. In E. Mosen (Ed.), *Research; Successful Approaches* (2nd edition ed., pp. 253-269). Washington DC: American Dietetic Association.
- Schatzkin, A., & Kipnis, V. (2004). Could Exposure Assessment Problems Give Us Wrong Answers to Nutrition and Cancer Questions? *Journal of the National Cancer Institute*, 96(21), 1564-1565.
- Subar, A. F., Kipnis, V., Troiano, R. P., Midthune, D., Schoeller, D. A., Bingham, S., et al. (2003). Using Intake Biomarkers to Evaluate the Extent of Dietary Misreporting in a Large Sample of Adults: The Open Study. *American Journal of Epidemiology*, 158(1), 1-13.
- Thompson, F. E., Midthune, D., Subar, A. F., McNeel, T., Berrigan, D., & Kipnis, V. (2005). Dietary Intake Estimates in the National Health Interview Survey, 2000: Methodology, Results, and Interpretation. *Journal of the American Dietetic Association*, 105(3), 352-363; quiz 487.
- Torres, L. (2002). Estrategias de Intervención para Inclusión.
<http://www.pratp.upr.edu/leyes.htm>
- Torres, L. (2002). Asistencia Tecnológica Derecho de Todos.
<http://www.pratp.upr.edu/leyes.htm>
- United States Department of Agriculture. (2004). USDA National Nutrient Database for Standard Reference: Agricultural Research Service.
- United States. Dept. of Health and Human Services. (2000). *Healthy People 2010 : Understanding and Improving Health*. Washington, DC: U.S. Dept. of Health and Human Services : For sale by the U.S. G.P.O., Supt. of Docs