Tufts University, Friedman School of Nutrition Science and Policy

NUTB 300 – Thesis: Research Methods and Proposal Writing Practicum

Summer 2024 (May 22 – August 18, 2024)

Class Meetings: This is a blended course. Not applicable.

Co-Instructors:

 lynne.ausman@tufts.edu  Phone: 617.636-3712
Office Hours: By appointment

 Mei.Chun.Chung@tufts.edu
Office Hours: By appointment

Graduate Credits: Three SHU

Prerequisites: Students taking this course should have a familiarity with statistical test results reported in journal articles. Students taking this course should have already completed the first-year statistics courses, NUTB250 and NUTB350 (or equivalent or permission of the instructor).

Course Description:
This course is designed to train students how to develop the research proposal for an experimental study. Specifically, students will learn how to conduct a literature review on a topic of their interest to summarize existing evidence and identify a gap that their proposed study can fill. They will come up with an appropriate research design, data collection and analysis methodology, and estimate a budget. This course combines virtual live classroom sessions and individual synchronous tutorials with substantial individual work. The course materials proceed systematically through each step and each student will apply what they learn to their own chosen topic. Instructors will provide feedback on each section of the proposal, which students are expected to consider in the next draft. The final deliverable for the course will be a complete proposal for a research study ready to submit for funding.

The audience for this course includes students in the MNSP program with interests in nutrition science and policy topics. Students can use the course as an opportunity to become an expert on a particular topic of interest and can use the proposal document as a writing sample when applying for employment after graduation.

Specific course Objectives:

At the completion of this course students should be able to:

1. Formulate key research questions for a literature review.
2. Organize a literature search; identify relevant search terms and which literature bases to search
3. Establish parameters for the review regarding what it will and won't cover.
4. Extract relevant information from appropriate studies in a systematic manner (with summary tables and figures)
5. Refine key research questions based on the literature review.
6. Develop a testable hypothesis for a study.
7. Design a study with two or three specific aims that will test the hypothesis.
8. Describe the methods to be used for the study.
9. Calculate sample size for the groups to be tested in the study.
10. Write a research proposal
11. Describe potential impact and expected outcomes
12. Discuss limitations of this approach
Texts:


https://tufts.primo.exlibrisgroup.com/permalink/01TUN_INST/1kc9gia/alma991018966566303851

Additional readings beyond these texts are listed in the detailed syllabus below and are posted on Canvas along with extra optional supplemental reference material.

Submissions via Box

We use a shared Box folder for each student where you will submit your written assignments each week. For specific assignments early in the course, we specify the filename for your submission. As the course progresses, you will be submitting iterative drafts of your proposal and we will be commenting directly in the document. To keep the files clear, we ask that you use the following file name structure: “Week#_yourlastname_ddMmm”. For example, if the document completes the sections assigned as part of week 9: “9_Schneider_12Jul”. When we add comments, we will change the date and add our initials.  **All assignments are due by 11:59 PM EDT on the date listed.**

Academic Conduct:


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.

Assessment and Grading:

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

- Attendance and participation at the residency - 5 %
- Weekly deliverables (proposal sections) throughout the course (8 items @ 4 %) – 32%
- Peer proposal critique (group participation and written critique) – 5%
- Open book comprehension quizzes on most important readings (6 quizzes @ 4 pts) - 24%
- Final proposal - 34%

Assignments and Submission Instructions:

Assignments received after their deadline will not be accepted or graded unless extension is approved in advance. Students who are unable to complete an assignment on time for any reason should notify the instructors by email or phone call prior to the deadline, with a brief explanation for why the extension is needed. Students will receive feedback from instructors each week focused on that week's section, so late
submissions may not be able to get as much useful feedback from the instructors.  **N.B. Late submissions to Tufts Box will lose 10% of the grade for each day they are late. Please, please try to keep up. This is a fast-paced course, and you must not fall behind.**

**Attendance Policy**

Upon joining this Master of Nutrition Science and Policy degree class, 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 colleagues’ learning experiences.

Therefore, please arrange to be present at all residency sessions during this semester. If you miss any time, documentation in writing is required in advance. Every hour of missed residency time may lower your final grade by 2%; if you miss the residency or a substantial portion of it, you will have to retake the course the following year.

Time extensions, make-up work, and a grade of Incomplete will only be given under extreme circumstances. Requests for these items must be made in advance, in writing, to the instructor of the class. The instructor will indicate her approval and, if approved, what needs to be done to return to good standing in the course.

**Communication Policy**

Students should seek out information themselves and from their peers in the class. If you do not find your answer, contact the instructor as soon as possible. Please do not wait. Due to the time difference and scheduling, you need to plan for time for the instructor to answer your question. Faculty will answer within 48 hours. If urgent, contact either course instructor at their office telephone or by pre-arranged Zoom/Skype.

**Accommodation of Disabilities:**

Tufts University is committed to providing equal access and support to all students through the provision of reasonable accommodations so that each student may access their curricula and achieve their personal and academic potential. If you have a disability that requires reasonable accommodation, please contact the Friedman School Assistant Dean of Student Affairs at 617-636-6719 to make arrangements for determination of appropriate accommodations. Please be aware that accommodations cannot be enacted retroactively, making timeliness a critical aspect for their provision.

**Course Schedule:**
* This schedule is subject to modification at the instructor’s discretion.

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<tr>
<th>DATES</th>
<th>WEEK</th>
<th>TOPIC</th>
<th>LECTURER</th>
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<tr>
<td>Before the residency</td>
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<td>Considering areas of interest for the thesis project.</td>
<td>Ausman</td>
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<td>May 22 (Wed) – 26, 2024</td>
<td>1</td>
<td>a) Research Process</td>
<td>Ausman &amp; Chung</td>
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<td>b) Elements of a research proposal</td>
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<td>c) Introduction to experiments</td>
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<td>d) Identify three best ideas for proposal</td>
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<td>Dates</td>
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| May 27 – June 2, 2024 | 2    | a) Literature review and identify criteria for searching the literature and finding relevant studies  
 |                     |      | b) Formulating a research question  
 |                     |      | c) Introduction to primary experimental designs  
 |                     |      | d) Identify probable thesis idea  
 |                     |      | Ausman & Chung and Tufts librarian               |
| June 4-7, 2024 (Residency) | 3 and 4 | a) Introduction and course overview  
 |                     |      | b) Refining your thesis topic. Write initial hypothesis.  
 |                     |      | c) Experimental designs and causal inference  
 |                     |      | d) Research ethics and IRB  
 |                     |      | e) Introduction to sample size calculations  
 |                     |      | f) Letter of Intent  
 |                     |      | Ausman & Chung and Tufts IRB staff               |
| June 10 – 16, 2024  | 5    | a) Search the literature on the topic of the research question.  
 |                     |      | b) Produce a comprehensive list of relevant studies  
 |                     |      | c) Make and populate a table with literature review results.  
 |                     |      | Ausman & Chung                                   |
| June 17 - 23, 2024  | 6    | a) Hypothesis formulation  
 |                     |      | b) Define study design  
 |                     |      | c) Define participants selection and assignment  
 |                     |      | d) First draft of thesis proposal with the Hypothesis, Experimental design, and participants sections  
 |                     |      | Ausman & Chung                                   |
| June 24 – 30, 2024  | 7    | a) Scientific writing  
 |                     |      | b) Refine and finalize two specific aims  
 |                     |      | c) First draft of methodology  
 |                     |      | d) Begin to formulate background narrative  
 |                     |      | Ausman & Chung and Amy Gantt                     |
| July 1 - 7, 2024    | 8    | a) Submit your proposal to date for peer critique  
 |                     |      | b) Critique two other student proposals (live discussion and written)  
 |                     |      | Ausman & Chung                                   |
| July 8 - 14, 2024   | 9    | a) Develop background and rationale for the proposal  
 |                     |      | b) Conduct sample size calculations               |
|                     |      | Ausman & Chung                                   |
| July 15 - 21, 2024  | 10   | a) Analytical strategy and statistical methods  
 |                     |      | Ausman & Chung                                   |
| July 22 – 28, 2024  | 11   | a) Expected results and potential impact of your work including policy implications  
 |                     |      | b) Address limitations, where appropriate  
 |                     |      | Ausman & Chung                                   |
| July 29 – August 4, 2024 | 12 | a) Preparation of a budget  
 |                     |      | b) Timeline  
 |                     |      | Ausman & Chung                                   |
| August 5-11, 2024   | 13   | a) Assembling and submitting the final proposal  
 |                     |      | Ausman & Chung                                   |