

FRAN*6000: Quantitative Research Methods (.50 credits)

Fall 2014 Course Syllabus

**Department of Family Relations and Applied Nutrition
University of Guelph**



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Office hours: Monday and Wednesday (by appointment)

Course format:

Expected enrolment is approximately 22. Topics that will be examined in the course are listed in the course outline. Classes will consist of discussion of readings and class activities. You will discuss research methodology concepts and issues in the readings related to quantitative research methods and critique the readings that illustrate empirical quantitative research.

Class times: Wednesday, 8:30 - 11:20 am, Macdonald Stewart Hall, room 331

Course website:

Announcements, updated schedules, grades, and other information will be posted on CourseLink, a website for on-campus courses: <https://courselink.uoguelph.ca/shared/login/login.html>.

Course description:

This is a graduate course in **quantitative research methods**. The course includes critical appraisal of the research literature. Theory, research ethics, sampling strategies, measurement issues, scale development, survey design, experimental and quasi-experimental designs, cross-sectional and longitudinal designs, and questionnaire development are discussed.

This course is designed to provide you with a conceptual understanding of the issues and methods that are related to the development and implementation of quantitative research. The Department of FRAN provides an interdisciplinary program of graduate studies in (a) applied human nutrition, (b) family relations and human development, and (c) couple and family therapy. To make the course more relevant to you, I have assigned readings from various areas and your research proposal can address a general research topic of your choice.

Prerequisite(s): 75% in an undergraduate research methods course.

You are encouraged to refer to an applied research methods textbook if you feel that a review of some content in a previous undergraduate research methods course would be helpful. There are

many textbooks to choose from. The textbook for FRHD*3070 (Research Methods) is: Neuman, W.L., & Robson, K. (2015). Basics of social research: Qualitative and quantitative approaches (3rd Canadian ed.). Toronto, ON: Pearson Canada Inc..

Learning objectives for students:

1. To develop conceptual and operational definitions of constructs commonly used in research, through in-class discussion.
2. To apply theory in research, through in-class discussion.
3. To develop sound research objectives or hypotheses to guide research, through in-class discussion.
4. To critique and develop survey questions based on principles of survey design, through in-class discussion.
5. To apply principles of measurement about establishing the validity and reliability of existing and new measures, during in-class discussion.
6. To critically appraise research described in the media and peer-reviewed journal articles.
7. To develop specific research designs to examine various research objectives or hypotheses, through in-class discussion.
8. To assess ethical issues in empirical research, through in-class discussion.
9. To develop a well-conceptualized quantitative research proposal.

Accessibility:

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual, and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities (CSD) (soon to be re-named Student Accessibility Services) as soon as possible. For more information, contact CSD at 519-824-4120, ext. 56208 or email csd@uoguelph.ca or refer to the CSD website.

Academic misconduct:

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community (faculty, staff, and students) to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The academic misconduct policy is detailed in the graduate calendar:

https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/sec_d0e1770.shtml

The Learning Commons' academic integrity tutorial, which includes a plagiarism module, is available at <http://www.academicintegrity.uoguelph.ca/>.

Evaluation:

Information about what you should do if you are unable to complete course work because of medical, psychological or compassionate circumstances is given in the graduate calendar, in the "grounds for academic consideration" section. If you are not able to meet an in-course requirement due to illness or compassionate reasons, please inform me in writing. Where possible, this should be done in advance of the missed work or event. If this is not possible, this should be done as soon as possible after the due date. If appropriate documentation of your inability to meet the in-course requirement is necessary, I will request it of you.

1. Class participation: 30% (15% for 1st half of course and 15% for 2nd half)

Meaningful participation in discussions contributes to learning so you are expected to attend classes and participate in discussions. Grading will be based on class participation rather than mere attendance.

All of us share the responsibility of creating an environment that facilitates class discussions. As you read the readings prior to the classes, develop a list of discussion questions related to (a) methodology concepts and issues for the conceptual articles and (b) **both** methodology concepts and issues **and** critical appraisal questions for the empirical articles, which you can ask during the classes. Critical appraisal questions relate to the research objectives or hypotheses, research design, sampling, measurement, data collection and analysis, interpretation of the results, and other aspects of and issues in the research, to stimulate class discussion. Your preparation and participation in the discussions will contribute to the group's learning and will be appreciated by all.

On **September 10**, I will initiate assigning specific journal articles from the list of readings to each student. You will be responsible for **facilitating a 20-minute class discussion** of (a) methodology concepts and issues for the conceptual article or (b) **both** methodology concepts and issues for the empirical article **and** a critical appraisal of the empirical article (**particularly focusing on the research topic for that week**).

- **The facilitator is expected to seek out background information necessary to both understand the article and lead the discussion.**
- Dr. Michelle Edwards (Data Resource Centre, Library) has generously offered to provide statistics consultation to students in this course. I strongly encourage facilitators to make an appointment with Michelle (edwardsm@uoguelph.ca) if they want assistance to enhance their understanding of the statistics used in the assigned articles.

2. Written quantitative research proposal: 40%

You are required to write a research proposal to examine the effectiveness of an existing community intervention in Canada. The research proposal will address a general research topic of your choice and must not be related to the focus of a thesis or research project that you have done, are planning on doing during your graduate program studies, or are currently doing. Do not select a specific intervention if an evaluation of that intervention has already been described in a journal article or an evaluation report.

The research proposal should include elements such as:

- A title page.
- A brief introduction that includes (a) background information and a review of relevant research literature and (b) the general purpose of your research.
- The research objectives or hypotheses and their rationale.
- The method that includes sub-sections that discuss participants, measures, research design, and procedure.
- References.
- Appendices.

Guidelines for writing your research proposal are in Appendix A.

Please meet with me to discuss and obtain approval of your proposed research, which must be feasible, before you go ahead to write the research proposal. You are not expected to actually conduct the research as part of the requirements of this course.

You are to complete the written research proposal independently. Students are not to collaborate on the proposal (it is not a group effort). It is not appropriate for me to provide feedback on proposals during their development because this would result in an improper assessment of submissions that are partially based on my input.

BOTH a paper copy and an electronic copy of your written research proposal are due by Nov. 26, 11:30 am. Late submissions have a 10% (out of 100) per day penalty.

- **The paper copy should include any appendices. I will rely on this copy for grading.**
- **Submit the electronic copy (Microsoft Word) (include any appendices) in Dropbox in CourseLink.**

3. Mid-term exam: 30%

The exam will consist of essay questions (e.g., a critical appraisal of empirical article(s) distributed during the exam period) based on class discussions and readings (e.g., journal articles) during Sept. 10 to Oct. 15.

The exam will be written during the Oct. 22 class, 8:30 am – 11:20 am.

Grading system:

The grading schedule described in the graduate calendar will be used. The grading system is as follows:

Letter grade	%	Letter grade	%
A +	90 - 100	C +	67 - 69
A	85 - 89	C	65 - 66
A -	80 - 84	F	0 - 64
B +	77 - 79		
B	73 - 76		
B -	70 - 72		

Protocol:

- The electronic recording of classes is expressly forbidden without the prior consent of the instructor. This prohibition extends to all components of the course, including, but not limited to lectures and seminars, whether conducted by the instructor or a seminar leader or demonstrator, or other designated person. When recordings are permitted, they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.
- As per university regulations, all students are required to check their “uoguelph.ca” e-mail account regularly: e-mail is the official route of communication between the University and its students.
- The last date to drop one-semester courses, without academic penalty, is October 30.

Required readings:

The readings for each week should be read before coming to class so that you are prepared to ask questions and raise and discuss issues from your readings during class. Bring your readings to class.

The journal articles (i.e., readings) are available through the library via e-journals:

<http://www.lib.uoguelph.ca/>

Recommended (not required) readings:

Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, and Social Sciences and Humanities Research Council of Canada (December 2010). Tri-council policy statement: Ethical conduct for research involving humans. Available at <http://www.pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>

The Tri-council policy statement 2 (TCPS 2) tutorial course on research ethics. Last modified 2013-05-16. Available at <http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/>

- This tutorial will take approximately 3 hours to complete.

Locke, L.F., Spirduso, W.W., & Silverman, S.J. (2013). *Proposals that work: A guide for planning dissertations and grant proposals* (6th ed.). Thousand Oaks, CA: Sage Publications, Inc..

Course schedule:

I reserve the right to revise the schedule of classes as needed, as long as you are given adequate notice. If class is cancelled (e.g., bad weather), all remaining lectures will be shifted (e.g., cancelled lecture will be the next lecture).

Note:  = Review this article as a conceptual article.

Date	Topic and required readings
Sept. 10	<p>Overview of course; introduction to research methodology</p> <ol style="list-style-type: none"> Domoff, S. E., Hinman, N. G., Koball, A. M., Storfer-Isser, A., Carhart, V. L., Baik, K. D., & Carels, R. A. (2012). The effects of reality television on weight bias: An examination of the biggest loser. <i>Obesity (Silver Spring, Md.)</i>, 20(5), 993-998. Hoerster, K. D. K., Mayer, J. A. J., Sallis, J. F. J., Pizzi, N. N., Talley, S. S., Pichon, L. C. L., & Butler, D. A. D. (2011). Dog walking: Its association with physical activity guideline adherence and its correlates. <i>Preventive Medicine</i>, 52(1), 33-38.
Sept. 17	<p>Theory in research</p> <ol style="list-style-type: none"> Mauras, C. P., Grolnick, W. S., & Friendly, R. W. (2013). Time for "the talk" . . . now what? Autonomy support and structure in mother-daughter conversations about sex. <i>The Journal of Early Adolescence</i>, 33(4), 458-481. Gronhoj, A., Bech-Larsen, T., Chan, K., & Tsang, L. (2013). Using theory of planned behavior to predict healthy eating among Danish adolescents. <i>Health Education</i>, 113(1), 4-17. Choi, J. H., Chung, K., & Park, K. (2013). Psychosocial predictors of four health-promoting behaviors for cancer prevention using the stage of change of transtheoretical model. <i>Psycho-Oncology</i>, 22(10), 2253-2261. De Decker, E., De Craemer, M., De Bourdeaudhuij, I., Verbestel, V., Duvinage, K., Iotova, V., . . . Cardon, G. (2014). Using the intervention mapping protocol to reduce European preschoolers' sedentary behavior, an application to the toybox-study. <i>International Journal of Behavioral Nutrition and Physical Activity</i>, 11(Feb), 19 [18 pages]. 
Sept. 24	<p>Ethics in research</p> <ol style="list-style-type: none"> Leentjens, A. F. G., & Levenson, J. L. (2013). Ethical issues concerning the recruitment of university students as research subjects. <i>Journal of Psychosomatic Research</i>, 75(4), 394-398.  Barata, P. C., & Stewart, D. E. (2010). Searching for housing as a battered woman: Does discrimination affect reported availability of a rental unit? <i>Psychology of Women Quarterly</i>, 34(1), 43-55. McShane, K. E., Davey, C. J., Rouse, J., Usher, A. M., & Sullivan, S. (2014). Beyond ethical obligation to research dissemination: Conceptualizing debriefing as a form of knowledge transfer. <i>Canadian Psychology</i>, 55(May, advance online

Date	Topic and required readings
	publication), no pagination specified [8 pages]. [C]
Oct. 1	<p>Measurement and scale development</p> <p>10. McDermott, R. J., Malo, T. L., Dodd, V. J., Daley, E. M., & Mayer, A. B. (2011). Evaluative indices assigned to contraceptive methods by university undergraduates. <i>American Journal of Health Education, 42</i>(4), 228-234.</p> <p>11. Ogden, J., & Lo, J. (2012). How meaningful are data from likert scales? An evaluation of how ratings are made and the role of the response shift in the socially disadvantaged. <i>Journal of Health Psychology, 17</i>(3), 350-361.</p> <p>12. Yun, S. H., & Vonk, M. E. (2011). Development and initial validation of the intimate violence responsibility scale (IVRS). <i>Research on Social Work Practice, 21</i>(5), 562-571.</p> <p>13. Trottier, K., McFarlane, T., Olmsted, M. P., & McCabe, R. E. (2013). The weight influenced self-esteem questionnaire (WISE-Q): Factor structure and psychometric properties. <i>Body Image, 10</i>(1), 112-120.</p>
Oct. 8	<p>Sampling; experience sampling method</p> <p>14. Bull, S. S., Levine, D., Schmiede, S., & Santelli, J. (2013). Recruitment and retention of youth for research using social media: Experiences from the just/us study. <i>Vulnerable Children and Youth Studies, 8</i>(2), 171-181.</p> <p>15. Schauer, G. L., Halperin, A. C., Mancl, L. A., & Doescher, M. P. (2013). Health professional advice for smoking and weight in adults with and without diabetes: Findings from BRFSS. <i>Journal of Behavioral Medicine, 36</i>(1), 10-19.</p> <p>16. Grenard, J. L., Stacy, A. W., Shiffman, S., Baraldi, A. N., MacKinnon, D. P., Lockhart, G., . . . Reynolds, K. D. (2013). Sweetened drink and snacking cues in adolescents: A study using ecological momentary assessment. <i>Appetite, 67</i>(5), 61-73.</p>
Oct. 15	<p>Quasi-experimental research</p> <p>17. Ha, E., & Caine-Bish, N. (2009). Effect of nutrition intervention using a general nutrition course for promoting fruit and vegetable consumption among college students. <i>Journal of Nutrition Education and Behavior, 41</i>(2), 103-109.</p> <p>18. Reavley, N., Pallant, J. F., & Sali, A. (2009). Evaluation of the effects of a psychosocial intervention on mood, coping, and quality of life in cancer patients. <i>Integrative Cancer Therapies, 8</i>(1), 47-55.</p> <p>19. Pinkleton, B. E., Weintraub Austin, E., Chen, Y., & Cohen, M. (2012). The role of media literacy in shaping adolescents' understanding of and responses to sexual portrayals in mass media. <i>Journal of Health Communication, 17</i>(4), 460-476.</p> <p>20. Thomas, J. M., Lemieux, C. M., Rhodes, J. L. F., & Vlosky, D. A. (2011). Early truancy intervention: Results of an evaluation using a regression discontinuity design. <i>Children and Youth Services Review, 33</i>(9), 1563-1572.</p>
Oct. 22	<p>Mid-term exam</p> <ul style="list-style-type: none"> • No readings
Oct. 29	<p>Randomized experiments</p> <p>21. McLean, L. M., Walton, T., Rodin, G., Esplen, M. J., & Jones, J. M. (2013). A couple-based intervention for patients and caregivers facing end-stage cancer: Outcomes of a randomized controlled trial. <i>Psycho-Oncology, 22</i>(1), 28-38.</p>

Date	Topic and required readings
	<p>22. Gow, R. W., Trace, S. E., & Mazzeo, S. E. (2010). Preventing weight gain in first year college students: An online intervention to prevent the "freshman fifteen." <i>Eating Behaviors, 11</i>(1), 33-39.</p> <p>23. Wertz Garvin, A., & Damson, C. (2008). The effects of idealized fitness images on anxiety, depression and global mood states in college age males and females. <i>Journal of Health Psychology, 13</i>(3), 433-437.</p> <p>24. Vaillancourt, T., & Sharma, A. (2011). Intolerance of sexy peers: Intrasexual competition among women. <i>Aggressive Behavior, 37</i>(6), 569-577.</p>
Nov. 5	<p>Evaluation research</p> <p>25. Sridharan, S., & Nakaima, A. (2011). Ten steps to making evaluation matter. <i>Evaluation and Program Planning, 34</i>(2), 135-146. [C]</p> <p>26. Johnson, K., Greenesid, L. O., Toal, S. A., King, J. A., Lawrenz, F., & Volkov, B. (2009). Research on evaluation use. A review of the empirical literature from 1986 to 2005. <i>American Journal of Evaluation, 30</i>(3), 377-410. [C]</p> <p>27. Geist, M. R. (2010). Using the delphi method to engage stakeholders: A comparison of two studies. <i>Evaluation and Program Planning, 33</i>(2), 147-154.</p> <p>28. Wang, H. E., Lee, M., Hart, A., Summers, A. C., Anderson Steeves, E., & Gittelsohn, J. (2013). Process evaluation of healthy bodies, healthy souls: A church-based health intervention program in Baltimore City. <i>Health Education Research, 28</i>(3), 392-404.</p> <p>29. Morris, M., & Clark, B. (2013). You want me to do what? Evaluators and the pressure to misrepresent findings. <i>American Journal of Evaluation, 34</i>(1), 57-70.</p>
Nov. 12	<p>Survey research (e.g., mode)</p> <p>30. Slevec, J., & Tiggemann, M. (2010). Attitudes toward cosmetic surgery in middle-aged women: Body image, aging anxiety, and the media. <i>Psychology of Women Quarterly, 34</i>(1), 65-74.</p> <p>31. Vicente, P., & Reis, E. (2013). The "frequency divide": Implications for internet-based surveys. <i>Quality and Quantity, 47</i>(6), 3051-3064.</p> <p>32. Howard, D. E., Debnam, K. J., & Wang, M. Q. (2013). Ten-year trends in physical dating violence victimization among US adolescent females. <i>Journal of School Health, 83</i>(6), 389-399.</p> <p>33. So, L., & Quan, H. (2012). Coming to Canada: The difference in health trajectories between immigrants and native-born residents. <i>International Journal of Public Health, 57</i>(6), 893-904.</p>
Nov. 19	<p>Survey research (cont.) (e.g., specific issues)</p> <p>34. Dwyer, J. J. M., Allison, K. R., Lysy, D. C., LeMoine, K. N., Adlaf, E. M., Faulkner, G. E. J., & Goodman, J. (2009). An illustration of a methodology to maximize mail survey response rates in a provincial school-based physical activity needs assessment. <i>The Canadian Journal of Program Evaluation, 24</i>(2), 157-168. [C]</p> <p>35. Heesch, K. C., van Uffelen, J., & Brown, W. J. (2014). How do older adults respond to active Australia physical activity questions? Lessons from cognitive interviews. <i>Journal of Aging and Physical Activity, 22</i>(1), 74-86.</p> <p>36. Singer, E., & Ye, C. (2013). The use and effects of incentives in surveys. <i>Annals of the American Academy of Political and Social Science, 645</i>(1), 112-141. [C]</p>

Date	Topic and required readings
	37. Lynn, P., & Kaminska, O. (2012). The impact of mobile phones on survey measurement error. <i>Public Opinion Quarterly</i> , 77(2), 586-605.
Nov. 26	<p>Observational research</p> <p>38. Moens, E. E., Braet, C. C., & Soetens, B. B. (2007). Observation of family functioning at mealtime: A comparison between families of children with and without overweight. <i>Journal of Pediatric Psychology</i>, 32(1), 52-63.</p> <p>39. Campos, B., Graesch, A. P., Repetti, R., Bradbury, T., & Ochs, E. (2009). Opportunity for interaction? A naturalistic observation study of dual-earner families after work and school. <i>Journal of Family Psychology</i>, 23(6), 798-807.</p> <p>40. Bowker, A., Boekhoven, B., Nolan, A., Bauhaus, S., Glover, P., Powell, T., & Taylor, S. (2009). Naturalistic observations of spectator behavior at youth hockey games. <i>The Sport Psychologist</i>, 23(3), 301-316.</p> <p>41. Puhl, R. M., Peterson, J. L., DePierre, J. A., & Luedicke, J. (2013). Headless, hungry, and unhealthy: A video content analysis of obese persons portrayed in online news. <i>Journal of Health Communication</i>, 18(6), 686-702.</p>

Appendix A

Guidelines for writing your quantitative research proposal

Please follow these guidelines when writing your proposal.

General information:

You are required to write a research proposal to examine the effectiveness of an existing community intervention in Canada. The research proposal will address a general research topic of your choice and must not be related to the focus of a thesis or research project that you have done, are planning on doing during your graduate program studies, or are currently doing.

Checklist for research proposal:

- Maximum of 15 pages** (if more than 15 pages are submitted, only the first 15 pages will be graded)
- Should have a title page, reference section (use single space for the reference section), and appendices
- Page limit does not include the number of separate pages for the title page, reference section, and appendices.
- 8.5" x 11" paper
- Printed on 1 side of page
- Your name and page number are in the header of the document
- Double-spaced
- 2.5 cm. margins
- 12-point font size
- Not stapled

Writing style (including references):

Use headings and sub-headings. The proposal must be well-organized. Paragraphs should be logically developed.

You are to use the style in the American Psychological Association's (2010) Publication manual of the American Psychological Association (APA) (6th ed.) for citing references in the body of the proposal and for listing references. You don't have to use the APA style for writing other elements of the proposal. Also, the APA style is described at the website below. This website has a free tutorial, which can be accessed by selecting "Learning APA style" from the menu.

- <http://www.apastyle.org/index.aspx>.

The research proposal should include headings and sub-headings such as:

Title page:

Introduction:

This section should be brief (about 3 pages). You should discuss the problem that will be studied, discuss background information and relevant research literature, and specify the general purpose

of your research.

Objectives (or hypotheses):

The objectives or hypotheses should be linked to the literature review. These statements should be quite specific and include operational definitions of the variables being examined. The rationale for the objectives or hypotheses should be presented.

Method:

This section provides details about how you will conduct the research. There should be sub-sections such as participants, measures, and procedure.

a) Participants:

Describe the sample in this sub-section. Specify information such as the number of participants required, the inclusion/exclusion criteria, and the sampling strategy that will be used.

b) Measures:

Provide the conceptual definition of each variable and discuss how each variable will be operationally defined so that it can be measured. The rationale for using each measure should be given. Background information such as the reliability and validity of the measures should be discussed. Specify the strengths and weaknesses of the measures. If you are proposing to develop the measures, then this should be detailed here. Provide sample questions for the measures.

c) Procedure:

Describe how you will conduct the research in this sub-section. Summarize each step in the research process in sufficient detail to clearly communicate how the research will be done. The research design (e.g., a specific quasi-experimental design) and the rationale for choosing this research design should be discussed. Describe the statistical analyses that you plan on doing.

References:

The reference citations in the body of the proposal must be listed in the reference section.

Appendices:

Any information that supports your proposal, such as questionnaires and a letter of informed consent, should appear as appendices.

The following grading rubric will be used:

Component of research proposal	%
Introduction (e.g., background information; research literature; purpose)	/ 10
Objectives or hypotheses (including rationale)	/ 10
Method: Description of sample	/ 10
Method: Measures (e.g., operational definitions; reliability and validity)	/ 15
Method: Specific research design (including rationale and design issues such as internal validity)	/ 20
Method: Procedure (including ethics)	/ 15

Component of research proposal	%
References, appendices, writing style, organisation, and grammar	/ 20
Total	/ 100