Term Information

Effective Term
Autumn 2015

Previous Value
Summer 2013

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)
Remove the exclusion "Not open to students with credit for 889" under the Prerequisites and Exclusions section.

What is the rationale for the proposed change(s)?
The exclusion is incorrect

What are the programmatic implications of the proposed change(s)?
(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?
None

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area
Human Nutrition

Fiscal Unit/Academic Org
Department of Human Sciences - D1254

Previous Value
Department of Human Sciences - D1251

College/Academic Group
Education & Human Ecology

Level/Career
Graduate

Course Number/Catalog
7789

Course Title
Nutrition Research Design

Transcript Abbreviation
Research Design

Course Description
Aspects of research design, including both ethical considerations as well as how to select appropriate experimental models.

Semester Credit Hours/Units
Fixed: 1

Offering Information

Length Of Course
14 Week

Flexibly Scheduled Course
Never

Does any section of this course have a distance education component?
No

Grading Basis
Letter Grade

Repeatable
No

Course Components
Lecture

Grade Roster Component
Lecture

Credit Available by Exam
No

Admission Condition Course
No

Off Campus
Never

Campus of Offering
Columbus
Prerequisites and Exclusions

Prerequisites/Corequisites
Prereq: Grad standing.

Exclusions
Not open to students with credit for 889.

Cross-Listings

Cross-Listings
Cross-listed in AnimSci.

Subject/CIP Code

Subject/CIP Code
30.1901

Subsidy Level
Doctoral Course

Intended Rank
Masters, Doctoral

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors

Course Details

Course goals or learning objectives/outcomes
• Learn how to develop hypotheses
• Examine how to select the appropriate experimental model
• Learn how to design experimental diets for animals and human subjects
• Understand why you use specific techniques (molecular to qualitative methods)
• Appreciate the regulations and ethics involved in using animals and humans in research
• Understand the ethics of authorship and plagiarism
• Understand lab safety practices

Content Topic List
• Laboratory safety training
• Human subjects and HIPPA training
• Animal studies and IUCAC training
• Ethics discussion on authorship and plagiarism
• How to critically read the literature to find the hypothesis and research design
• Designing diets for animals and humans
• How to choose the correct animal model
• Designing molecular studies
• Designing human studies - quantitative
• Designing human studies - qualitative

Attachments

• 7789 Au13 Miller & Firkins.pdf
  (Syllabus. Owner: Bomser, Joshua A)

Comments
### Workflow Information

<table>
<thead>
<tr>
<th>Status</th>
<th>User(s)</th>
<th>Date/Time</th>
<th>Step</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submitted</td>
<td>Bomser, Joshua A</td>
<td>07/29/2014 03:17 PM</td>
<td>Submitted for Approval</td>
</tr>
<tr>
<td>Approved</td>
<td>Snyder, Anastasia Rebecca</td>
<td>07/30/2014 01:47 PM</td>
<td>Unit Approval</td>
</tr>
<tr>
<td>Pending Approval</td>
<td>Achterberg, Cheryl L, Warnick, Bryan R, Zircher, Andrew Paul, Odum, Sarah A.</td>
<td>07/30/2014 01:47 PM</td>
<td>College Approval</td>
</tr>
</tbody>
</table>
Instructors:
Carla Miller, Ph.D., R.D.       Jeff Firkins, Ph.D.
347B Campbell Hall          223 Animal Sciences Bldg.
292-1391                 688-3089
miller.4453@osu.edu       firkins.1@osu.edu
Office Hours: By appointment By appointment

Class Time and Location: Wed 4:10 – 5:05 pm (1 credit hour), 251 Campbell Hall

Course Objectives:
Upon completion of this course, the student will be able to:
1. Develop research hypotheses to answer a research question;
2. Select the appropriate experimental model to answer research hypotheses;
3. Design experimental diets for animal studies;
4. Identify when to use specific techniques (quantitative vs. qualitative methods) to answer research questions;
5. Explain the ethical conduct of research, grantsmanship and authorship;
6. Understand laboratory safety practices;
7. Identify conflicts of interest and intellectual property rights.

Required Reading Material:

You may access a copy of this book at http://www.nap.edu
One copy may be printed for educational purposes; the book cannot be duplicated. Making a copy of the book violates copyright laws.

Articles will be placed on the Carmen web site for the course. Please read the assigned reading prior to class and be prepared to discuss the material.

Course Assignments:
1. CITI Human Subjects Training
All investigators and key personnel who participate in the design, conduct or reporting of human subjects research must be appropriately trained in the protection of human subjects. OSU uses the Collaborative Institutional Training Initiative (CITI) web-based human research courses to satisfy the requirement for training in human subjects protection. You need to complete the CITI training program if you will be conducting
research in human subjects as part of your graduate training. To access the CITI courses, visit [www.citiprogram.org](http://www.citiprogram.org). The Basic Human Research Course is required for investigators and key personnel who have not previously completed a CITI human research course. There are two educational tracks for the Course: Biomedical Research or Social and Behavioral Research. Choose the track most closely related to the research in which you will be involved (ask your mentor if you are uncertain). Each track contains up to 16 required modules and several optional modules. Each module may take from 10 – 30 minutes to complete, and most modules contain an online quiz. The modules do not have to be completed all in one session. A minimum aggregate score of 80% on the quizzes is required to pass the Basic Human Research Course. Once you satisfactorily complete the Basic Course, you will receive a summary of your score on each quiz. Print out this summary page to receive credit for HN 7789 and turn the form into the instructors. **Due Oct 2nd**

2. **IACUC Animal Training**
Extensive effort is made to provide excellent care for animals used in research, to gain the maximum amount of information from every animal used, and to minimize procedures that have potential for discomfort, distress or pain. The Institutional Animal Care and Use Committee (IACUC) oversees the responsible use of animals in university research. All research activities must conform to the statutes of Animal Welfare Act and the guidelines of the Public Health Service as issued in the Guide for the Care and Use of Laboratory Animals. Before conducting animal research, all investigators and key personnel must complete the Animal Usage Orientation and Training course. To access the IACUC course, visit [orrp.osu.edu/iacuc/training](http://orrp.osu.edu/iacuc/training). You need to complete the IACUC training program if you will be conducting animal research as part of your graduate training. It will take about 2 hours to complete the training. A minimum aggregate score of 80% on the quizzes is required to pass the course. Once you satisfactorily complete the course, you will receive a summary of your score on each quiz. Print out this summary page to receive credit for HN 7789 and turn the form into the instructors. **Due Oct 2nd**

3. **Laboratory Safety Training**
Complete the appropriate laboratory safety training required for the research you will be conducting (discuss with your advisor to determine the modules to complete). Submit a certificate of completion when you have finished the training to receive course credit. **Due Oct 2nd**

4. **Knowledge Vee assignment**
You will be given a research paper and asked to complete the Vee heuristic about a particular study. More information will be given about the Vee during class. **Due Sept 25th**

5. **Research Design assignment**
Students will be divided into small groups. Each group will receive a nutrition-related scenario in which an experiment is needed. You will need to determine: the
appropriate research design to use to answer the research question; key hypotheses; the appropriate variables to measure and response options; the number of replications needed; and the ethical issues to consider. Each group will submit a report which addresses each of these issues. In addition, you will identify a journal which would be appropriate to publish the findings from your experiment. You will need to review the statement regarding the ethical conduct of research in the Guidelines for Authors for that specific journal and verify that the experimental procedures you develop are consistent with the ethical statement endorsed by the journal.  

Due Nov 13th

6. Final Exam
An exam will be administered during finals week which will address the topics discussed during the course. Exam questions will consist of short answer and essay questions.

Attendance Policy:
Learning in this course depends on your active engagement with the material, including class discussions. We invite you to be prepared for class. Only one unexcused absence is permitted. Points will be deducted for more than 1 unexcused absence. Attendance will be taken weekly.

Grading Plan:

<table>
<thead>
<tr>
<th>Points</th>
<th>CITI or IUCAC research training</th>
<th>Laboratory safety training</th>
<th>Knowledge vee assignment</th>
<th>Research design assignment</th>
<th>Attendance</th>
<th>Final exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>15 (if need to complete)</td>
<td>30</td>
<td>45</td>
<td>13</td>
<td>60</td>
<td>188</td>
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</table>

TOTAL POINTS

Grading Scale:
The following scale will be used in determining letter grades.

<table>
<thead>
<tr>
<th>Grade %</th>
<th>Grade %</th>
<th>Grade %</th>
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</thead>
<tbody>
<tr>
<td>A 93-100%</td>
<td>B 83-86%</td>
<td>C 73-76%</td>
</tr>
<tr>
<td>A- 90-92</td>
<td>B- 80-82</td>
<td>C- 70-72</td>
</tr>
<tr>
<td>B+ 87-89</td>
<td>C+ 77-79</td>
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Students with Disabilities:
Any student who feels s/he may need an accommodation based on the impact of a disability should contact one of the instructors privately to discuss specific needs. The Office of Disability Services is relied upon for assistance in verifying the need for accommodations and developing accommodation strategies. Please contact the Office for Disability Services at 614-292-3307 (V)
or 614-292-0901 (TDD) in room 150 Pomerene Hall to coordinate reasonable accommodations; http://www.ods.ohio-state.edu/.

Academic Misconduct:
The Ohio State University’s Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: “Any activity that tends to compromise the academic integrity of the University, or subvert the educational process.” Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University’s Code of Student Conduct is never considered an “excuse” for academic misconduct. You are expected to complete course assignments independently.

If we suspect that a student has committed academic misconduct in this course, we are obligated by University Rules to report our suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University’s Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University. For additional information, see the Code of Student Conduct http://studentaffairs.osu.edu/resource_csc.asp.

Grievances and Solving Problems:
According to University Policies, available from the Division of Student Affairs, if you have a problem with this class, “You should seek to resolve a grievance concerning a grade or academic practice by speaking first with the instructor or professor; then, if necessary, speak with the department chairperson, college dean, and provost, in that order.

Statement on Diversity:
We value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Recording Lectures or Classroom Activities:
Students who wish to record their classes must first obtain written permission of the instructor. Otherwise, such recording constitutes a violation of the Code of Student Conduct. Furthermore, recorded lectures cannot be distributed, sold or exchanged without the written consent of the professor.
# Tentative Course Schedule and Readings

<table>
<thead>
<tr>
<th>Date</th>
<th>Facilitator</th>
<th>Topic</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>Aug 21</td>
<td>Miller, Firkins</td>
<td>Course orientation; Introductions; Laboratory Safety in Research</td>
<td>Scientist p. 28</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Lab safety</td>
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<td>Aug 28</td>
<td>Barnard</td>
<td>The ethical conduct of human subjects research</td>
<td>Scientist p. 24-26</td>
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<tr>
<td>Sept 4</td>
<td>Loerch</td>
<td>The ethical conduct of animal research</td>
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<tr>
<td>Sept 11</td>
<td>Firkins, Miller</td>
<td>Research misconduct</td>
<td>Scientist p. 8-23</td>
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<tr>
<td>Sept 18</td>
<td>Miller</td>
<td>The Knowledge Vee and knowledge creation</td>
<td>Cullen et al., 2005</td>
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<tr>
<td>Sept 25</td>
<td>Miller</td>
<td>Qualitative vs. quantitative research</td>
<td>Blake et al., 2008; Woolford et al., 2011; Alexander et al., 2010</td>
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<td>Oct 2</td>
<td>Miller</td>
<td>Quantitative research designs</td>
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<td></td>
<td></td>
<td>Knowledge Vee assignment due</td>
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<tr>
<td>Oct 9</td>
<td>Firkins</td>
<td>Establishing research hypotheses</td>
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<td>Oct 16</td>
<td>St-Pierre</td>
<td>Plagiarism</td>
<td>Scientist p. 18</td>
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<tr>
<td>Oct 23</td>
<td>Firkins</td>
<td>Developing specific aims, objectives and measures/response function</td>
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<tr>
<td>Oct 30</td>
<td>VanNasdale</td>
<td>Conflicts of interest</td>
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<tr>
<td>Nov 6</td>
<td>Firkins</td>
<td>Designing diets for animals</td>
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<tr>
<td>Nov 13</td>
<td>Firkins</td>
<td>Sharing research results; authorship and allocation of credit</td>
<td>Scientist p. 29-38</td>
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<td>Research design project due</td>
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<td>Nov 20</td>
<td>Kensinger</td>
<td>Intellectual property</td>
<td>Scientist p. 39-47</td>
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<td>Nov 27</td>
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<td>Holiday – no class</td>
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<tr>
<td>Dec 10</td>
<td>Miller, Firkins</td>
<td>Final exam</td>
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6:00-7:45pm