BRR 200: Developing a Research Proposal: Theory and Practice

Syllabus

Class: Monday 4 - 5:00 pm
Instructor: Cary J. Green
137 Strand Agriculture Hall
cary.green@oregonstate.edu

1 credit
Prerequisites: None

Course Description: This course is an introduction to conceptual issues for organizing, planning, designing and conducting research in biological and agricultural sciences and natural resources disciplines. Students will learn the process and philosophy of research, and then apply what is learned by working in teams to analyze a timely and relevant problem and formulate experimental approaches to address it.

Course Objectives: This class is directed at the understanding of the philosophy of science and research as applied to practical problems in biological and agricultural sciences and natural resources. The specific objectives of this course are:

1) To understand the philosophical foundations of research,
2) To understand the research process, and
3) To understand the process of developing a research proposal.

Learning Resources: Readings and other class materials will be handed out in class, available on Blackboard, or on reserve in library.

Course Content:

Week 1 What is Research? How will doing research benefit me?
In-class exercise: The Experiment.
2 The Scientific Method: hypotheses, controls, replicates.
3 Introduction to case study: groups assigned topics. Meet with group in class.
4. *Martin Luther King Holiday.*
5 BRR Poster Session.
6 Literature review.
7 Conceptual framework.
8 Ethics.
9 Teams present projects
10 Teams present projects.

Learning Outcomes: After completing this course, students will be able to:

1. Understand the scientific method.
2. Describe key components of a research proposal.
3. Discuss the ethical considerations of research.
4. Evaluate research studies and explain the scientific issues addressed, discuss ethical considerations, and assess the conclusions.
5. Formulate hypotheses and suggest research approaches to contemporary problems.
6. Demonstrate critical thinking.
Assessment of Learning Outcomes: Learning outcomes will be assessed via homework assignments, team activities, critical evaluation of research posters, and a class presentation on a case study.

**Attendance and Participation**
Students must attend class and participate in discussions or assignments in class and online.

- **Homework assignments (3)**
  - 30%

- **Case Study assignments (3)**
  - 50%

Total 100%

**Assignments:**

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<thead>
<tr>
<th>WHAT</th>
<th>WHO</th>
<th>WHEN</th>
<th>POINTS</th>
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<tbody>
<tr>
<td>1. Homework 1: The Experiment</td>
<td>Individual</td>
<td>Week 2</td>
<td>10</td>
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<tr>
<td>2. Case Study 1: Research Question and Hypothesis</td>
<td>Team</td>
<td>Week 5</td>
<td>10</td>
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<td>3. Homework 2: Poster Critique</td>
<td>Individual</td>
<td>Week 6</td>
<td>10</td>
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<td>4. Case Study 2: Literature Review</td>
<td>Team</td>
<td>Week 7</td>
<td>10</td>
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<td>5. Homework 3: Ethics Module</td>
<td>Individual</td>
<td>Week 8</td>
<td>10</td>
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<td>6. Case Study 3: In-class Project Presentation</td>
<td>Team</td>
<td>Weeks 9-10</td>
<td>30</td>
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Total 80

Grading Scale:
- A 72-80
- B 64-71
- C 56-63
- D 48-55
- F ≤47

**Statement Regarding Students with Disabilities**
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Link to Statement of Expectations for Student Conduct**, i.e., cheating policies [http://oregonstate.edu/admin/stucon/achon.htm](http://oregonstate.edu/admin/stucon/achon.htm)