Biol. 602: Research Design CRN 70914

Introduction to Graduate Study in the Department of Biology and Wildlife

Preliminary Course Syllabus

1. Course information:
   Title: Research Design
   Credits: 3
   Prerequisites: Admission to MS or PhD program,
   Location, meeting time: Tuesday and Thursday, 11:30 – 1:00 Irving I 201

2. Instructors:
   Michael Harris, ffbmh@uaf.edu, 474-7801, Rm 260 AHRB
   office hours: Thursday 9:00-11:00 am
   Barbara Taylor, ffbet@uaf.edu, 474-2487, Rm 202 AHRB
   office hours: Tuesday 1:45-3:45pm
   Additional participation by other Biology and Wildlife Faculty as necessary

3. Course readings/materials:
   1) Students will be provided with excerpts from:
      *At the Bench: A Laboratory Navigator* by Kathy Barker,
      Cold Springs Harbor Laboratory Press
   2) EndNote 8.....Bibliographies Made Easy (software)
      Thomson Publishing (Windows/Mac Academic Version 8, $100)
   3) All students are required to attend the weekly Life Sciences Seminar
      Other supplies as required

4. Course description: This course is designed to provide background and materials essential for success in the graduate program in Biology and Wildlife at UAF. The material will cover a wide range of topics and will ensure that all students receive a thorough overview of essential skills for successful research including experimental design, data management and reporting in scientific and lay publications.

   *Content:*
   1) Student orientation: An overview of departmental and institutional structure, staff, campus resources; annual schedule; important deadlines; using library resources; etc.
   2) Graduate School Necessities: Introduction to the graduate research plan, the graduate committee, graduate committee meetings.
   3) Ethics and Professionalism: Introduction to professional ethics and responsible conduct in research, race and gender issues.
   4) Introduction to “At the Bench”, as a guideline for conduct in graduate school.
   5) Research Proposals and Graduate Study Plans: Formats and Formulation.
   6) Research Support: Identifying funding sources
   7) Grantsmanship: An overview of strategies for obtaining funding; proper grant writing technique; overview of funding resources; general application procedures; understanding the Office of Sponsored Programs.
8) Research Budgeting: How to generate a research budget for a grant proposal. The importance of keeping a record of grant spending.
9) Scientific Writing: The importance of publishing early and often; the art and style of scientific writing; planning publication into the graduate study plan; managing references with Endnote.
10) IACUC: Training and animal use assurances.
11) Research Resources: An overview of the research resources at UAF including; LARS, Toolik Lake field station, Core facilities, bioinformatics, statistics and editorial consultants, IAB research initiatives (ABNP, COBRE, IGERT, INBRE, EPSCoR, etc.)
12) Data Management: Acquisition, analysis, archiving and ownership of data sets.
13) Preparation for Scientific Meetings
14) Effective Presentations: Use and misuse of PowerPoint
15) Communicating with the Media: Newspaper, radio and television. Interview tips. Mock interviews

5. **Course Goals and Student Learning Outcomes:** Students will receive an overall introduction to the Graduate School environment, the Department of Biology and Wildlife and the Institute of Arctic Biology, and will become familiar with expectations and resources available when beginning their Graduate Student Careers.

6. **Instructional methods:** This course will utilize a combination of teaching techniques, including lecture, exercises and small group discussion. Resources will be provided through Blackboard.

7. **Course calendar:** TBA

8. **Course policies:** Students are expected to attend all scheduled class sessions and to participate in all activities.

9. **Evaluation:** A letter grade will be assigned by the instructors according to the scheme: A=90-100%, B=80-90%, C=70-80%, D=60-70%, F=<60%. Percentage points will be accumulated by the students according to the following scheme:

<table>
<thead>
<tr>
<th>Course activity</th>
<th>Grade percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture and Seminar Participation</td>
<td>5</td>
</tr>
<tr>
<td>Pop Assignments</td>
<td>35</td>
</tr>
<tr>
<td>Final Written Research Proposal</td>
<td>30</td>
</tr>
<tr>
<td>Oral Presentation of Research Proposal</td>
<td>30</td>
</tr>
<tr>
<td>total</td>
<td>100</td>
</tr>
</tbody>
</table>

10. **Disabilities Services:** The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. State that you will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities.”
Course Calendar

Aug 31 Course Introduction
Sep 5 Departmental and Institutional Structure; Campus Resources; Library Resources
Sep 7 Graduate Research Plan; Graduate Committees & Meetings; Comprehensive Exams
Sep 12 Ethics and Professionalism
Sep 14 Responsible Conduct in Research
Sep 14 Case Studies of Research Integrity
Sep 19 Gender, Race and Class in Science
Sep 21 Gender, Race and Class in Science
Sep 26 How to Successfully Attend a Conference
Sep 28 How to Successfully Attend a Conference
Oct 3 AAAS Meeting
Oct 5 At the Bench
Oct 10 Graduate Study Plans; Research Proposals
Oct 12 Identifying Funding Sources
Oct 17 Grantsmanship
Oct 19 Grantsmanship
Oct 24 Research Budgeting
Oct 26 Scientific Writing
Oct 31 Scientific Writing
Nov 2 Scientific Writing
Nov 7 Animal Care and Use
Nov 9 Research Resources
Nov 14 Data Management
Nov 16 Effective Presentations
Nov 21 Tips for Meeting with the Media
Nov 23 Thanksgiving
Nov 28 Mock interviews
Nov 30 Student Presentations
Dec 5 Student Presentations
Dec 7 Student Presentations