Course Syllabus:
Introduction to Graduate Studies  BIOL 820, 3 credits
Summer 2018

Instructor:
Dr. Letitia Reichart
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Biology Department, BHS 318
University of Nebraska Kearney
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NOTE: Email is my preferred method of contact if you inquire about a personal issue. General questions about the course can be posted on the Frequently Asked Questions Discussion Board on Canvas.

Office Hours: Email to arrange a time for a phone discussion

COURSE DESCRIPTION: An introduction to graduate study and requirements at UNK with emphasis on research methods and biological techniques for the professional teacher and biologist. Students will gain an appreciation for the scientific method by formulating good scientific questions including sound null and alternative hypotheses, design experimental methods addressing the hypotheses and propose appropriate statistical tests for evaluation of results. Students will practice the art of locating and understanding scientific literature. In addition, students will engage in scientific writing, which will include the submission of a research proposal.

COURSE OBJECTIVES:
1. Students will understand the requirements for their degree program and complete plausible plans for completion of the degree requirements.
2. The use of appropriate formatting, style and language in professional electronic communications will be emphasized and practiced. Essential aspects for successfully using Blackboard will be introduced.
3. Students will develop a scientific question and develop testable hypotheses to answer a specific aspect of the question.
4. Skills related to use of the UNK Library for research will be developed.
5. Students will gain an appreciation for the design and testing of a scientific hypothesis with an emphasis on the interdependence of data collection to statistical methods.
6. Students will practice the skill of reading the scientific literature.
7. An appreciation for the role of the IACUC and IRB in research projects will be gained.
8. Sources of funding for student-based research will be reviewed. Students will complete an application for funding (generic).
9. Students will practice the art of writing scientific papers and will demonstrate skills by completion of a scientific review paper. Students will learn proper citation methods and be instructed on strategies to avoid plagiarism.

INSTRUCTOR ROLE: As your instructor I will provide feedback to students in two ways. First, students will receive individual feedback for specific writing assignments (e.g., grant proposal outline, rough draft of grant proposal and the final version of the grant proposal; see assignment list below). Second, I will read and may comment on student journal entries and/or online class discussions, and provide clarification or summary information for student questions. Any general comments or observations that would be helpful to the class as a whole will be made available to all students via announcement. I will respond to every email sent from student UNKlopermail accounts, you can expect a response to your emails within 24 hours of sending, Monday-Friday. However emails sent on the weekends (or late on Friday) will not be seen until Monday morning.

REQUIRED TEXT:


The required book can be purchased at The Antelope Bookstore http://unk.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?catalogId=10001&langId=-1&storeId=87923 or with your favorite online bookseller.

RECOMMENDED TEXTS:
It is recommended that students have a style book. Two options are as follows:

1. Elements of Style by William Strunk Jr. and EB White
2. The Bedford Handbook by Diana Hacker

Any edition is acceptable and can be found on Amazon currently for $4.00 or below.
REQUIRED HARDWARE/SOFTWARE:  Students should refer to the following eCampus website to make sure you meet the minimum hardware/software and internet connection speed required by all UNK eCampus students.

eCampus requirements:  http://www.unk.edu/academics/ecampus/resources-info/students/technology/requirements.php

NOTE:  Microsoft Office Word is the only acceptable word processing software for this course (All other file formats are unacceptable for submitting online documents). This software is available for download with your Office365 account. Please go to the following link to learn more about getting setup with appropriate software.
http://www.unk.edu/offices/its/instructional_technology/office365_unk_email/index.php

ACADEMIC INTEGRITY:  UNK’s Policy is the maintenance of academic honesty and integrity is a vital concern of the University community. Any student found in violation of the standards of academic honesty shall be subject to both academic and disciplinary sanctions. Academic dishonesty includes, but is not limited to, the following: Cheating, Fabrication and Falsification, Plagiarism, and Other Acts of Academic Dishonesty. You are expected to uphold the UNK standard of Student Conduct relating to Academic Integrity. You assume full responsibility for the content and integrity of the work you submit. Academic integrity will be strongly enforced in this course and plagiarism will not be tolerated. All assignments will be scanned through Safe Assignment via Blackboard. Students who plagiarize any part of their writing assignments will fail this course.

GRADING SYSTEM:  Grades will be determined according to the following scheme:

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Points</th>
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<tbody>
<tr>
<td>1 Mini-assignments (14 @ 10pts)</td>
<td>140</td>
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<tr>
<td>2 Assignments</td>
<td></td>
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<tr>
<td>A1: Bibliography</td>
<td>30</td>
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<tr>
<td>A2: Review Paper</td>
<td>100</td>
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<tr>
<td>A3: Hypotheses &amp; Design</td>
<td>70</td>
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<tr>
<td>A4: IRB or IACUC protocol</td>
<td>20</td>
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<td>A5: Student grant reviews</td>
<td>25</td>
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<tr>
<td>A6: Generic Grant</td>
<td>50</td>
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<tr>
<td>3 Discussion (11 @ 5pts)</td>
<td>55</td>
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<tr>
<td>4 Exam 1</td>
<td>100</td>
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<tr>
<td>5 Final Exam</td>
<td>100</td>
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<tr>
<td><strong>Total Course Points</strong></td>
<td><strong>690</strong></td>
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GRADING SCALE:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>93 - 100 %</td>
<td>A</td>
</tr>
<tr>
<td>90 - 92 %</td>
<td>A-</td>
</tr>
<tr>
<td>88 - 89 %</td>
<td>B+</td>
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<tr>
<td>83 - 87 %</td>
<td>B</td>
</tr>
<tr>
<td>80 - 82 %</td>
<td>B-</td>
</tr>
<tr>
<td>78 - 79 %</td>
<td>C+</td>
</tr>
<tr>
<td>73 - 77 %</td>
<td>C</td>
</tr>
<tr>
<td>70 - 72 %</td>
<td>C-</td>
</tr>
<tr>
<td>68 - 69 %</td>
<td>D+</td>
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<tr>
<td>63 - 67 %</td>
<td>D</td>
</tr>
<tr>
<td>59 % or less</td>
<td>F</td>
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STUDENTS WITH DISABILITIES OR THOSE WHO ARE PREGNANT:

Students with disabilities or those who are pregnant are encouraged to contact me for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities or those who are pregnant. To receive accommodation services for a disability, students must be registered with UNK Disabilities Services Coordinator, David Brandt, in the Academic Success Office, 163 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu. For those needing accommodation due to pregnancy, you need to visit with Student Health. The following link provides information for students and faculty regarding pregnancy rights. [http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students](http://www.nwlc.org/resource/pregnant-and-parenting-students-rights-faqs-college-and-graduate-students)

If you have an accommodation plan, please see Dr. Reichart as soon as possible, so any necessary arrangements can be made for your learning. No accommodations can be provided until a Reasonable Accommodation Plan is in place. Please remember, plans are not retroactive and cannot be used for assignments prior to the date of the instructor’s signature. To the greatest extent possible, University Representatives, shall observe confidentiality with respect to any request for accommodation.

VETERANS SERVICES. UNK works diligently to support UNK’s military community by providing military and veteran students and families with resources and services to help them succeed. Veterans Services assists with the GI Bill process and acts as a liaison between the student and the Veterans Administration. If you need assistance or would like more information, please contact Lori Weed Skarka at 308-865-8520 or unkveterans@unk.edu.

REPORTING STUDENT SEXUAL HARASSMENT, SEXUAL VIOLENCE OR SEXUAL ASSAULT: Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may
be the victim of sexual misconduct is encouraged to report to one or more of the following
resources:

Local Domestic Violence, Sexual Assault Advocacy Agency 308-237-2599

Campus Police (or Security) 308-865-8911

Title IX Coordinator 308-865-8655

Retaliation against the student making the report, whether by students or University
employees, will not be tolerated.

If you have questions regarding the information in this email please contact Mary
Chinnock Petroski, Human Resources Director (petroskimj@unk.edu or phone 8655).

CLASS SCHEDULE & ASSIGNMENTS: The class schedule (Table 1) and weekly reading
assignments (Table 2) can be found below. Due dates must be followed and late papers are
strongly discouraged. All assignments are due on the date specified. For assignments
turned in late a penalty of 5 points per day will be deducted. A paper will get no credit
when taking the 5 points for tardiness equals zero for the assignment or seven days after
the due date, whichever comes first. Also, the rough draft of your Review Article and
Grant Proposal will be given to other students in the course to review. If these drafts are
late you may lose the opportunity for peer review.

NOTE: The sequence of lessons, notes and reading assignments are listed. Sequence,
topic, assignments and any dates are tentative and subject to change by the instructor.

Table 1: Class Schedule & Written Assignments

<table>
<thead>
<tr>
<th>DATE</th>
<th>WEEK</th>
<th>LECTURE/TOPIC</th>
<th>ASSIGNMENT (Due Dates posted on Canvas)</th>
<th>READINGS</th>
</tr>
</thead>
</table>
| 5/7-5/11   | 1    | Module 1
            Introduction & Syllabus
            Why graduate school?
            Essential elements of Canvas
            Etiquette in the digital world (email
            and discussion boards)
            Module 2
            Online Tools: Accessing the UNK
            Library
            Types of research -- lab, field, "blended", theoretical
            Faculty at UNK
            Scope of scientific projects at
            UNK - thesis vs. Biol 831,
            acceptable projects
            What area of science appeals most
            to you? | Module 1
            mA1: Short paragraph on why
            you are engaged in graduate
            study
            mA2: properly formatted and
            worded email
            Discussion 01 | Module 1
            Syllabus
            UNK Canvas Website
            Loper-Mail
            IT email advice
            Module 2
            -Resources posted on Canvas
| 5/14-5/18 | 2 | **Module 3**  
Requirements for graduation  
What is science? How is science done?  
Good scientific question and hypothesis development  
Post scientific question for comment by students  | **Module 3**  
mA4: hypothetical program of study  
mA5: preliminary scientific question, null and alternative hypotheses  
Discussion 03  | **Module 3**  
Department of Biology  
Graduate Student Handbook  
Graduate Catalog  
Projects using human participants must be approved by instructor via email (do this early)  | **Module 4**  
Hofmann Text Chapters 4 & 10  
Papers posted on Canvas |
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</thead>
<tbody>
<tr>
<td>Modules 3 &amp; 4</td>
<td></td>
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</tbody>
</table>
| 5/21-5/25 | 3 | **Module 5**  
Writing review papers  
Proper citation of sources  
Academic honesty and plagiarism  
Answering Essay Questions  
Writing Organization/Outline  
**EXAM 1 - DUE MAY 29th**  | **Module 5**  
A1: annotated bibliography (best 15+)  
A2: Review Paper (TurnitIn)  
Discussion 05  
No credit, extra discussion for peer interaction during prep of A2  
**EXAM 1 (Modules 1-5)**  | **Module 5**  
Hofmann Text: Chapters 1, 2, 3, & 11  
Graduate Handbooks  | **Module 6**  
Hofmann Text: Chapters 5 & 6 |
| Modules 5 & Exam 1 | | | | |
| 5/28-6/1 | 4 | **Module 6**  
Fundamentals of good experimental design, qualitative vs. quantitative data, data collection and records, critical evaluation  
Student's experimental design presented for peers to evaluate and comment.  | **Module 6**  
mA7: data sheets and data management plan  
mA8: critical evaluation of scientific question and hypotheses with preliminary experimental design  
Discussion 06  | **Module 6**  
Hofmann Text: Chapters 5 & 6 | **Module 7**  
mA9: spreadsheet assignment  
Discussion 07 |
<table>
<thead>
<tr>
<th>Date</th>
<th>Modules</th>
<th>5</th>
<th>Modules</th>
<th>6</th>
</tr>
</thead>
</table>
| 6/4-6/8 | Modules 8 & 9 | **Module 8** | Continuation of hypothesis testing and statistical methods (exercises)  
Displaying data and statistical information: Tables, Graphs, Body text of manuscript  
What are appropriate uses for tables and graphs? | Modules 8 & 9 | **Module 8** | mA10: Internet resources for statistical analysis  
mA11: table and graphs of provided data sets  
Discussion 08 |
| 6/11-6/15 | Modules 10 & 11 | **Module 10** | You must be kidding ... the realities of conducting scientific studies!  
The use of animals in research  
The use of human subjects in research  
Legal restrictions  
What are some challenges associated with your proposed scientific question? | Modules 10 & 11 | **Module 10** | mA12: enumeration of potential requirements and obstacles to study with a plan for meeting the challenges  
A4: IRB or IACUC as required for your hypothesis or provided option  
Discussion 10 |
| 6/18-6/22 | Modules 12 & 13 | **Module 12** | How am I going to pay for all this stuff?  
Funding a research project  
UNK sources of funds (RSC)  
Extramural funding sources (largely limited to professional scientists)  
**Module 13** | Modules 12 & 13 | **Module 12** | mA14: draft generic grant application  
A5: Comments on assigned grant (by discussion group) |
| 6/25-6/29 | | **Finals Week** | Grants DUE – June 25  
Final Exam DUE – June 28 | | **Finals Week** |