INSTRUCTOR: Dr. Ann L. Kirchmaier  
office: BCHM 321B  
TEL: 494-0977  
e-mail: kirchmaier@purdue.edu  

Office hours: By appointment  

COURSE OBJECTIVES  

In this course, we will explore components of experimental design and research projects that help make experiments interpretable, informative, innovative and interesting. We will discuss aspects of critical thinking in relation to reading scientific papers, designing of a research study and interpreting experiments. We will cover components of grant applications, identification of and justification for research questions, strategies for designing grant (or prelim) applications, tips for writing accurately, clearly and convincingly. This course will draw from examples in primary literature plus federal, institutional, internal and external sources.  

TEXTBOOK  

No textbook is assigned for this course.  

LECTURE TIME AND PLACE  

T, 1:30 – 3:20 PM, BCHM Room 109  

BLACKBOARD  

The syllabus and materials for the course will be available via the Purdue University Blackboard site at: https://blackboard.purdue.edu/webct/logonDisplay dowebct  

ASSESSMENT  

Assessment of student performance will occur through monitoring participation, group discussions, quality of presentations and performance on assignments.  

The grading for this course will be as follows:  

- Participation: 100 points  
- Presentation: 100 points  
- Homework: 550 points
The cutoff values for letter grades are as follows:

- 675 points  A
- 600 points  B
- 525 points  C
- 450 points  D
- 449 points and below  F

OBTAINING EXTRA HELP

Dr. Kirchmaier will be available to answer your questions immediately after class, or by appointment (arranged in class or by e-mail).

ACADEMIC MISCONDUCT

Academic misconduct of any kind will not be tolerated in any course offered by the Department of Biochemistry. Information on Purdue’s policies with regard to academic misconduct can be found at [http://www.purdue.edu/ODOS/osrr/integrity.htm](http://www.purdue.edu/ODOS/osrr/integrity.htm).

Any student found cheating on an exam or assignment will receive a score of zero on that exam or assignment, may receive an F in the course, and their misconduct will be reported to the Office of the Dean of Students. The Office of the Dean of Students will review the misconduct to determine if that student should be suspended or expelled from the university.

To provide you with an unambiguous definition of academic misconduct, the following text has been excerpted from "Academic Integrity: A Guide for Students", written by Stephen Akers, Ph.D., Executive Associate Dean of Students (1995, Revised 1999, 2003), and published by the Office of the Dean of Students in cooperation with Purdue Student Government, Schleman Hall of Student Services, Room 207, 475 Stadium Mall Drive West Lafayette, IN 47907-2050.

"Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty."

[Part 5, Section III-B-2-a, University Regulations] Furthermore, the University Senate has stipulated that “the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest.” [University Senate Document 72-18, December 15, 1972]

More specifically, the following are a few examples of academic dishonesty which have been discovered at Purdue University.

- substituting on an exam for another student
- substituting in a course for another student
- paying someone else to write a paper and submitting it as one’s own work
- giving or receiving answers by use of signals during an exam
- copying with or without the other person’s knowledge during an exam
- doing class assignments for someone else
- plagiarizing published material, class assignments, or lab reports
- turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- padding items of a bibliography
- obtaining an unauthorized copy of a test in advance of its scheduled administration
- using unauthorized notes during an exam
- collaborating with other students on assignments when it is not allowed
- obtaining a test from the exam site, completing and submitting it later
- altering answers on a scored test and submitting it for a regrade
- accessing and altering grade records
- stealing class assignments from other students and submitting them as one’s own
- fabricating data
- destroying or stealing the work of other students

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one’s own

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. To get information about changes in this course consult the class Blackboard site or e-mail or phone the instructor.

ON-LINE COURSE EVALUATIONS

During the last two weeks of the semester, you will be provided an opportunity to evaluate this course and your instructor(s). To this end, Purdue has transitioned to online course evaluations. On Monday of the fifteenth week of classes, you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have two weeks to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.

CLASS ATTENDANCE

In accordance with University policy, you are expected to attend every scheduled class. If you have a valid reason for missing class such as a University-sponsored activity, religious observances, illness, or family emergency, the instructor will assist you in obtaining information and materials you may have missed. Students who skip class without a valid excuse should not expect the instructor to supply class notes or provide special help. The official university policy, see: http://www.purdue.edu/univregs/pages/ac_regs_pro/classes.html
## (Approximate) LECTURE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Instructor</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1/13</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Introduction. Designing Experiments that Are Interpretable and Informative.</td>
</tr>
<tr>
<td>1/27</td>
<td>T</td>
<td>Sally Bond</td>
<td>Grant Writing Departmental Seminar</td>
</tr>
<tr>
<td>2/3</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework I Due: Correlation, Necessity, Sufficiency Techniques I</td>
</tr>
<tr>
<td>2/10</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework II Due: Correlation, Necessity, Sufficiency Techniques II</td>
</tr>
<tr>
<td>2/17</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework III Due: Presenting Problems and Issues from Part 1</td>
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<tr>
<td>2/17</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework IV Due: Presenting Problems and Issues from Part 2</td>
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<tr>
<td>2/24</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework V Due: Correlation, Necessity, Sufficiency Techniques III</td>
</tr>
<tr>
<td>2/24</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework VI Due 9 AM: Deciphering NIH Abstracts</td>
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<tr>
<td>3/3</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Identifying and Addressing Important Questions: Specific Aims and Project Summary Proposal Topic Due</td>
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<tr>
<td>3/9</td>
<td>M</td>
<td>Kirchmaier</td>
<td>Class Presentations of Abstracts</td>
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<tr>
<td>3/10</td>
<td>T</td>
<td>Kirchmaier</td>
<td>No Class Spring Break</td>
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<tr>
<td>3/10</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework VII Due 9 AM: Draft Specific Aims</td>
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<tr>
<td>3/17</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework VIII Due 9AM Revised Specific Aims, Draft Significance and Innovation</td>
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<tr>
<td>3/17</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework IX Due 9AM Revised Significance and Innovation, Draft Approach</td>
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<td>3/23</td>
<td>M</td>
<td>Kirchmaier</td>
<td>Expressing Ideas Clearly &amp; Convincingly: Reading &amp; Writing</td>
</tr>
<tr>
<td>3/24</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Research Strategy, Significance Innovation, Approach Powerpoint Due</td>
</tr>
<tr>
<td>3/30</td>
<td>M</td>
<td>Kirchmaier</td>
<td>Giving Credit Where Credit Is Due: Original Work, Citing Sources and Plagiarism</td>
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<tr>
<td>3/31</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Grad Student Panel on Prelims</td>
</tr>
<tr>
<td>4/6</td>
<td>M</td>
<td>Kirchmaier</td>
<td>Homework X Due: Final Proposal to Peer Reviewers</td>
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<tr>
<td>4/7</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework XI Due: Peer Reviewer Comments</td>
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<tr>
<td>4/14</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Proposal Discussion/Review Panels</td>
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<tr>
<td>4/20</td>
<td>M</td>
<td>Kirchmaier</td>
<td>Faculty Panel on Prelims</td>
</tr>
<tr>
<td>4/21</td>
<td>T</td>
<td>Kirchmaier</td>
<td>Homework XII Due: Responses to Peer Reviews</td>
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**TEACHING ASSISTANT:** Tiffany Young
EMERGENCY PREPAREDNESS SYLLABUS

ATTACHMENT

EMERGENCY NOTIFICATION PROCEDURES are based on a simple concept – if you hear a fire alarm inside, proceed outside. If you hear a siren outside, proceed inside.

• _**Indoor Fire Alarms**_ mean to stop class or research and immediately **evacuate** the building.
  o Proceed to your Emergency Assembly Area away from building doors. **Remain outside** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

• _**All Hazards Outdoor Emergency Warning Sirens**_ mean to immediately seek shelter (**Shelter in Place**) in a safe location within the closest building.
  o “Shelter in place” means seeking immediate shelter inside a building or University residence. This course of action may need to be taken during a tornado, a civil disturbance including a shooting or release of hazardous materials in the outside air. Once safely inside, find out more details about the emergency*. **Remain in place** until police, fire, or other emergency response personnel provide additional guidance or tell you it is safe to leave.

*In both cases, you should seek additional clarifying information by all means possible...Purdue Home page, email alert, TV, radio, etc...review the Purdue Emergency Warning Notification System multi-communication layers at http://www.purdue.edu/ehps/emergency_preparedness/warning-system.html

EMERGENCY RESPONSE PROCEDURES:

  • _Review the Building Emergency Plan_ (available from the building deputy) for:
    o evacuation routes, exit points, and emergency assembly area
    o when and how to evacuate the building.
    o shelter in place procedures and locations
    o additional building specific procedures and requirements.

EMERGENCY PREPAREDNESS AWARENESS VIDEOS

• _"Shots Fired on Campus: When Lightning Strikes,"_ is a 20-minute active shooter awareness video that illustrates what to look for and how to prepare and react to this type of incident. See: [http://www.purdue.edu/securePurdue/news/2010/emergency-preparedness-shots-fired-on-campus-video.cfm](http://www.purdue.edu/securePurdue/news/2010/emergency-preparedness-shots-fired-on-campus-video.cfm) (Link is also located on the EP website)

MORE INFORMATION
Reference the Emergency Preparedness web site for additional information:
http://www.purdue.edu/emergency_preparedness