Intro to Biological Research
WC 130, 1:00 – 3:30 pm

Faculty office hours:
Matthew DeGennaro: AHC1-319A Tues 3-6pm and by appointment
Phillip Stoddard: AHC1-219C, Thurs 2-4pm and by appointment

Objective: This introductory course for graduate students is designed to give an understanding of the fundamentals of biological research. You will learn how to interpret, present, and discuss data from the primary literature. Close attention will be paid to science as a visual language used to communicate information in a clear, engaging, and objective fashion. You will also learn how to construct a logical set of experiments to address a biological question.

Course Schedule:

Week 1 - Aug 23rd

Part 1
- Discussion of course objectives, goals, and requirements
- Lecture on what makes a good scientific presentation
- PowerPoint fundamentals

Part 2
- Mechanics of a literature search
- Figure design: Inkscape and Illustrator
- Discussion of abstracts for class project
- Organization of groups for class project

Week 2 - August 30th

Part 1
Discussion of this week’s seminar
Journal Club

Part 2
Designing Studies 1: The nature of evidence & differences between disciplines.
Review of great figures
Week 3 - September 6th

Part 1
Discussion of this week’s seminar
Journal Club

Part 2
Designing Studies 2: hypotheses, predictions, procedure diagrams, alternate outcomes, "experimental controls" vs. "controlled experiments", statistics

Week 4 - September 13th

Part 1
Discussion of this week’s seminar
Journal Club

Part 2
Replicates vs Pseudoreplicates
Small groups: Discuss Hurlbert (1984) to understand different types of pseudoreplication. Pseudoreplication Challenge

Week 5 - September 20th

Part 1
Discussion of this week’s seminar
Journal Club

Part 2
Chalk talks

Week 6 - September 27th

Part 1
Discussion of this week’s seminar
Journal Club

Part 2
Chalk talks
***Syllabus preliminary, subject to change with ample notification***

**Week 7 - October 4th**

**Part 1**
Discussion of this week’s seminar

**Journal Club**

**Part 2**
Chalk talks

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**Week 8 - October 11th**

Midterm Exam

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**Week 9 - October 18th**

**Part 1**
Discussion of this week’s seminar

**Part 2**
**Journal Club: Scientific integrity and retractions**

**Week 10 - October 25th (Phil away)**

**Part 1**
Discussion of this week’s seminar

**Journal Club**

**Part 2**
Chalk talks

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**Week 11 - November 1st (Matt away)**

**Part 1**
Discussion of this week’s seminar

**Journal Club**

**Part 2**
Chalk talks
Week 12 - November 8\textsuperscript{th} (Phil away)

Part 1
Discussion of this week’s seminar

Journal Club

Albright, R. \textit{et al.} Reversal of ocean acidification enhances net coral reef calcification. 

Part 2
Chalk talks

Week 13 November 15\textsuperscript{th}

Part 1
Discussion of this week’s seminar

Journal Club

Funato, H. \textit{et al.} Forward-genetics analysis of sleep in randomly mutagenized mice. 

Part 2
Ethical issues for grad students: IACUC, IRB, honesty, authorship, fraud, romance, etc.

Week 14 - November 22\textsuperscript{th}

Group Presentations Part 1

Week 15 - November 29\textsuperscript{th}

Group Presentations Part 2
***Syllabus preliminary, subject to change with ample notification***

### Grading scheme

<table>
<thead>
<tr>
<th>Grading Item</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept seminar &amp; class attendance (-2 for each missed without prior approval)</td>
<td>10</td>
</tr>
<tr>
<td>10 Journal List</td>
<td>5</td>
</tr>
<tr>
<td>Literature search &amp; formatted bibliography for methods section of abstract project</td>
<td>5</td>
</tr>
<tr>
<td>Midterm</td>
<td>15</td>
</tr>
<tr>
<td>Class paper discussion</td>
<td>10</td>
</tr>
<tr>
<td>Figures from abstract project</td>
<td>30</td>
</tr>
<tr>
<td>Presentation of abstract project</td>
<td>25</td>
</tr>
</tbody>
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### Grading Scale: A 100-93, A- 92-90, B+ 89-87, B 86-83, B- 82-80, C+ 79-77, C 76-73, (grades below C do not count for graduate credit) C- 72-70, D+ let’s not even go there.

### Academic Misconduct: Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas, and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

Full handbook and information can be found at:
[http://www.fiu.edu/~oabp/misconductweb/1acmisconductproc.htm](http://www.fiu.edu/~oabp/misconductweb/1acmisconductproc.htm)

### DEFINITION OF ACADEMIC MISCONDUCT: Academic Misconduct is defined as the following intentional acts or omissions committed by any FIU student:

1.01 **Cheating:** The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. Any student helping another cheat may be found guilty of academic misconduct.

1.02 **Plagiarism:** The deliberate use and appropriation of another’s work without any indication of the source and the representation of such work as the student’s own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is guilty of plagiarism. Any student helping another to plagiarize may be found guilty of academic misconduct.

1.08 **Academic Dishonesty:** In general, by any act or omission not specifically mentioned above and which is outside the customary scope of preparing and completing academic assignments and/or contrary to the above stated policies concerning academic integrity.

If found cheating, YOU WILL RECEIVE AN “F” FOR THE CLASS, NO EXCEPTIONS.