Syllabus – IB 449

IB 449—Limnology
Fall 2013
Lecture, Tues & Thurs, 9:30 - 10:50 am, 170 Everitt
Lab, Tues, 1- 4:50 pm, 403 Natural History Building

Instructor: Dr. Carla E. Cáceres
Professor
Department of Animal Biology
477 Morrill Hall, caceres@life.illinois.edu
244-2139
Office Hours—by appointment

Teaching Assistant: John Crawford
PhD student
Department of Animal Biology
471 Morrill Hall, jwcrawf2@illinois.edu
Office Hours – by appointment

Lab Manual (Required if enrolled in the lab): Course manual for Limnology Laboratory
Posted on Compass

Webpage: Compass 2g
Compass login - all relevant information will be put here

Overview: This course is an introduction to inland aquatic systems. We will discuss the physics and chemistry of lakes, rivers and ponds as well as the biology of the organisms that inhabit these systems. We will also discuss how humans use inland freshwater systems.

If you are working on a computer that does not have PowerPoint, you can download a free program that will allow you to view these files from http://www.openoffice.org/.

General Course Policies: The course follows all policies and expectations outlined in the Student Code http://admin.illinois.edu/policy/code/.

Accommodations: Please notify Dr. Cáceres (the sooner the better) if you require special accommodations. University policy regarding special accommodations is listed in Article I-110 of the Student Code.

Academic Integrity/Plagiarism: Article I, Part 4 of the Student Code explains the University (and course) Policy on Academic Integrity. Section I-401 b states “Students have been given notice of this rule by virtue of its publication. Regardless of whether a student has actually read this rule, a student is charged with knowledge of it. Ignorance of a rule is never a defense.” If
there is anything in the Student Code that you feel you do not fully understand, please contact one of your instructors.

**Structure and expectations (See also slides from lecture 1):**
All students attend two lectures each week. Students who are taking the class for 4 credit hours also attend a 4-hour lab each week. The learning in both the lecture and laboratory will be as active as possible. Outlines for each lecture will be posted on Compass, usually the day before each lecture. The expectation is that you will annotate these posting with your own set of notes. Final presentations will be posted after each lecture, but may not contain the material written on the board or discussed during group work. *Not everything we talk about in lecture will be listed on the posted powerpoint presentation, so you are advised to take your own set of notes.*

Each lecture will also include several small-group or individual activities, which will be turned in for credit. For some lectures, you will also be given a reading assignment and handout to be completed prior to coming to class. Handouts will be turned in for credit. These handouts and in class activities will count for a total of 200 points. Lecture attendance is highly recommended and you will not be allowed to complete the in class assignments (including turning in handouts) associated with unexcused absences. Excused absences are given only for observing a religious holiday that falls on the day of the lecture, a medical emergency or tragedy in your immediate family or serving as a volunteer emergency worker as defined in the Volunteer Worker Job Protection Act. Please let me know in advance if you will miss a class to observe a religious holiday. All other requests for an excused absence must be accompanied by documentation from the Emergency Dean. If you miss an exam or assignment as the result of an excused absence, you will be allowed to complete a make-up exam/assignment. Depending on the length of your absence, Dr. Cáceres will determine the amount of time you have to complete the work. No credit will be given for exams or assignments missed due to unexcused absences.

Please respect the learning environment of your classmates. Please refrain from activities that are disruptive or distracting to other students (talking, arriving late/leaving early, websurfing, etc.). Be prepared to be an active participant in group activities.

**Grading:**
Lecture (600 points)
- 1st In class exam 100 pts.
- 2nd In class exam 100 pts.
- 3rd In class exam 150 pts.
- In class work 200 pts.
- Group Project on Stressors 50 pts.

Lab (200 points)
- Worksheets 6 @ 10 pts. each 60 pts.
- Short reports 3 @ 15 pts. each 45 pts.
- Presentation 20 pts.
- Peer Review of first draft of paper* 10 pts.
- Final Paper** 65 pts.
*If you do not bring copies of your paper to turn in and be peer reviewed, you will not be able to earn the points associated with this assignment.

**If you do not turn in the hypothesis, abstract and/or citations, 5 points each will be deducted from the final project.

All assignments are due at the beginning of class. Any assignment that is handed in late will receive a 20% deduction per day. After 3 days, the assignment will no longer be accepted.

**Grading Scale**

For students enrolled for 3 credit hours – 600 total points

For students enrolled for 4 credit hours – 800 total points

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<thead>
<tr>
<th>Grade Range</th>
<th>Letter Grade</th>
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<th>Letter Grade</th>
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<tbody>
<tr>
<td>97-100%</td>
<td>A+</td>
<td>77-79%</td>
<td>C+</td>
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<tr>
<td>93-96%</td>
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<td>73-76%</td>
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<tr>
<td>90-92%</td>
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<td>70-72%</td>
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<td>80-82%</td>
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**Lecture Topics**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>August 27</td>
<td>Introduction</td>
</tr>
<tr>
<td>August 29</td>
<td>Origin of lake basins</td>
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<tr>
<td>August 27</td>
<td>Geology, Physics and Chemistry</td>
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<tr>
<td>August 29</td>
<td>Physics and ionic content of water</td>
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<td>September 3</td>
<td>Light and heat in lakes</td>
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<td>September 5</td>
<td>Distribution of heat in lakes</td>
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<td>September 10</td>
<td>Water movement in lakes</td>
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<td>September 17</td>
<td>Oxygen, carbon, alkalinity and pH</td>
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<td>Biology</td>
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<td>September 19</td>
<td>Brief introduction to rivers and streams</td>
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<td>September 24</td>
<td>1st Exam (In class—covers Aug 29-Sept 19)</td>
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<td>September 26</td>
<td>Diversity of Aquatic Organisms: Single Celled and Colonial Organisms</td>
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<td>October 1</td>
<td>Diversity of Aquatic Organisms: Invertebrates</td>
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<tr>
<td>October 3</td>
<td>Diversity of Aquatic Organisms: Invertebrates and Fish</td>
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<tr>
<td>October 8</td>
<td>Lake classification and cultural eutrophication</td>
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October 10  Nutrient dynamics
October 15  Population dynamics: phytoplankton
October 17  Population dynamics: zooplankton
October 22  Community Ecology I (essay question for 2\textsuperscript{nd} exam handed out)
October 24  Community Ecology II
October 29  Community Ecology III, Food Webs and Energy Flow
October 31  Paleolimnology

**November 5**  \textbf{2\textsuperscript{nd} Exam (In class—covers all material to date)}
November 7  Introduction to GLEAM (http://greatlakesmapping.org/home)
November 12  Aquatic habitat alteration
November 14  Effects of Climate Change on aquatic systems
November 19  Acid deposition and other non-point sources of pollution
November 21  Invasive Species
November 26 \& 28  \textbf{THANKSGIVING BREAK}

December 3  Group work on Stressors
December 5  Killer Lakes

December 10  \textbf{In-class Final Exam (covers all material)}
December 13  Last day to upload group project (5:00 pm)
December 20  Last day to comment on 2 other group reports (5:00 pm)