

IB 192

Course title: Applied Pedagogy in Integrative Biology

2-3 units

Grade option: P/NP

Enrollment: 25-40 students

This course must initially be taken concurrently with IB 193 (Practical Pedagogy: Becoming an Effective Instructor in Biology). Subsequently, IB 192 can be taken in additional semesters without also enrolling in IB 193.

The goal of this course is to provide undergraduate students with direct, hands-on experience in applying pedagogical practices in a laboratory course setting. Many students in Integrative Biology seek opportunities to continue to participate in courses that they have already completed. Reasons for this interest include critical opportunities to continue interacting with course material and opportunities to engage directly in the process of biological instruction. This course allows qualified undergraduates to gain direct experience with instruction of lab courses in a structured, mentored, and pedagogically informed setting. Each student in the course will be paired with a Graduate Student Instructor who will provide near-peer mentoring regarding classroom practices and development of pedagogical practices.

Each week, students spend 2-3 hours participating in instruction of an upper division laboratory course in Integrative Biology. Because the specific lab course varies, a precise syllabus of laboratory meetings cannot be provided; syllabi for two upper division lab courses that are likely to engage students enrolled in IB 192 are attached. In all cases, instructional activities for students in IB 192 will include:

1. Attend at all weekly laboratory sections during the semester
2. Participate in weekly lab prep sessions, during which the goals and logistics of each lab are outlined by instructional staff
3. Participate in in-class instruction, including answering student questions, leading demonstrations of lab activities, facilitating interactions within teams of lab partners, and actively engaging students in discussion of course material
4. Lead introduction to one lab session during the semester, including short introduction of lab goals and associated background material
5. Use classroom experiences to help complete assignments in IB 193
6. Use classroom experiences to develop one "insider guide" presentation per semester. These will consist of short presentations that provide guidance to future participants in IB 192 regarding specific practices that can be used to improve the laboratory experience for students.

Students enrolled in IB 192 will NOT participate in grading or other forms of evaluation of student performance. All activities will be conducted under the direct supervision of a Graduate Student Instructor who also serves as a mentor to the student in IB 192. Collectively, these activities are designed to provide students in IB 192 with rigorous, hands-on training in the pedagogy and

practice of upper division laboratory based instruction. At the same time, participants in IB 192 are students; they are not instructors with responsibility for development of course content or oversight of the classroom experience.

Syllabus:

As noted above, the specific syllabus to be followed will depend upon the upper division laboratory course in which a student enrolled in IB 192 participates. Sample syllabi from IB 131L (General Human Anatomy Laboratory) and IB 132L (Mammalian Physiology Laboratory) are attached as examples of courses likely to engage students from IB 192. In all cases, upper division lab courses will meet weekly throughout the course of the semester, providing an estimated 10-12 distinct laboratory sessions during which students in IB 192 can practice their pedagogical skills.

Although exact expectations will differ depending on the laboratory course in which a student enrolled in IB 192 participates, we offer the following breakdown of activities as a general guide to the types of activities and anticipated time investment in which members of the course will participate:

<u>Student Responsibility</u>	<u>Time Expenditure</u>	<u>Total hours per semester</u>
Attend weekly lab prep session	2 hrs/week	24
Individual preparation for lab	1 hr/week	12
Participate in lab instruction	2-3 hrs/week	24-36
Prepare one lab introduction	3-4 hrs total	3-4
Prepare "insider guide" for peers	2-3 hrs total	2-3
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Total time invested:	~ 6 hrs/week	~ 80

Suggested readings:

Preparatory readings will vary depending on the lab course in which students participate. Almost all lab courses have full-semester manuals or provide weekly sets of pre-lab handouts that students are expected to have read prior to attending each lab period. As part of assisting with in-class instruction, students in IB 192 will be expected to read and to master these materials.

Grading scheme:

The course will be offered on a P/NP basis. At the start of the semester, each student enrolled in IB 192 will work with the faculty instructor for the course and with their graduate student mentor (from the focal lab class) to develop a list of specific expectations based on the above description of student responsibilities. A “P” grade for IB 192 will be based in part on completion of those responsibilities. Importantly, these expectations will be structured in terms of unambiguous outcomes (e.g., attend all lab sections), such that grades are not contingent on evaluation of the quality of undergraduate instructional efforts.

Final assessment for the course will consist of two parts. In lieu of a comprehensive final exam, students in IB 192 will be asked to prepare an extensive (~ 5 page) self-assessment of their instructional efforts during the semester. This self-assessment will be structured around 4-5 questions provided by the faculty instructor for the course; these questions are intended to prompt self-reflection about experiences in the classroom and how individual pedagogical practices have changed and improved over the course of the semester.

In addition to this self-assessment, each graduate mentor will provide written feedback regarding strengths and areas for improvement by the undergraduate with whom they were partnered; this information will be submitted to the faculty instructor for IB 192, who will then share that information with each student in the course as part of an “exit” discussion regarding experiences in the course.

Students who complete all three of these items (fulfill specified class responsibilities, complete self-assessment, meet with faculty instructor for “exit” discussion) will receive a final grade of “P” for the course.