Course Description

Laboratory experience with brightfield microscopy; phase-contrast microscopy; fluorescence microscopy; cellular fractionation; chromatography; spectrophotometry; protein gel electrophoresis and Western blotting; enzyme assays; ELISA; immunostaining; live cell imaging.

Credit Hours: 2
Prerequisite(s): Credit or concurrent registration in BIOS 222.
Laboratory: Science and Engineering Laboratories-East (SEL-E), Room 4084

Course Objectives

- Learn how to operate brightfield, phase-contrast, and fluorescence microscopes.
- Learn techniques to isolate organelles and other cellular components.
- Become proficient at several modern cell biology techniques: SDS-PAGE, Western blot, Bradford assay, ELISA, immunostaining.
- Survey the diversity of cell types and functions by working with cells from prokaryotes, protists, yeast, plants, and mammals.
- Prepare professional data figures using Microsoft Office and image editing software.
- Maintain a proper scientific notebook, analyze and interpret data.
- Write short scientific reports in grammatically-correct English with proper format and tone.
- Present the results of an experiment in an oral presentation.

Staff Information

Coordinator: Andrea McGinley, Ph.D.
E-mail: amario3@uic.edu
Phone: (312) 996-2946
Office: SEL-East, Room 3075 (through 3083)
Office Hours: By appointment.

Blackboard

http://blackboard.uic.edu

Announcements will be e-mailed to you and posted on Blackboard. It is your responsibility to verify the proper functioning of your UIC email address and check Blackboard regularly.
University of Illinois at Chicago  
Department of Biological Sciences  
BIOS 223: Cell Biology Laboratory

Syllabus

Required Course Materials

- There is no required textbook for the course. Lab handouts will be posted to Blackboard in advance of the lab session; you are responsible for printing these materials and bringing them to class with you.

- It is required that you bring your own Black Sharpie marker pens (Fine Point) and disposable gloves (latex, nitrile, or vinyl—available at any drugstore) to every lab session. You will also need a carbon-copy lab notebook for recording data.

Course Requirements

Quizzes  
Lab Notebook Pages  
Laboratory Reports  
Group Presentation  
Practical Examination  

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>100</td>
<td>(20%)</td>
</tr>
<tr>
<td>Lab Notebook Pages</td>
<td>30</td>
<td>(6%)</td>
</tr>
<tr>
<td>Laboratory Reports</td>
<td>220</td>
<td>(44%)</td>
</tr>
<tr>
<td>Group Presentation</td>
<td>50</td>
<td>(10%)</td>
</tr>
<tr>
<td>Practical Examination</td>
<td>100</td>
<td>(20%)</td>
</tr>
</tbody>
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TOTAL  
500 points  (100%)

Course Grades

<table>
<thead>
<tr>
<th>Point Range</th>
<th>Percentage Range</th>
<th>Letter Grade</th>
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</thead>
<tbody>
<tr>
<td>≥ 448</td>
<td>90 – 100 %</td>
<td>A</td>
</tr>
<tr>
<td>398 – 447</td>
<td>80 – 89 %</td>
<td>B</td>
</tr>
<tr>
<td>348 – 397</td>
<td>70 – 79 %</td>
<td>C</td>
</tr>
<tr>
<td>298 – 347</td>
<td>60 – 69 %</td>
<td>D</td>
</tr>
<tr>
<td>&lt; 297</td>
<td>&lt; 60 %</td>
<td>F</td>
</tr>
</tbody>
</table>

Point adjustments will be made to account for variation in the teaching and grading styles of the teaching assistants. At the end of the semester each section’s average will be adjusted upwards to 75% OR the average of the highest scoring section, whichever is higher. This is the curve. Your grade can only increase as a result of the curve, it will not be lowered. After this adjustment to normalize grades between each section, final grades are assigned based on the above point ranges.

Note: students in the sections with the highest averages may not receive an appreciable point adjustment. This reflects the positive influence of your TA on your grade throughout the semester.
Expectations of Students

Academic Integrity

- Any act of academic dishonesty will be punished severely. These acts include but are not limited to falsification of data, plagiarism of published materials, copying of another student’s work (from this or any other semester), and cheating on quizzes or exams. The UIC Guidelines Regarding Academic Integrity may be found at http://www.uic.edu/ucat/catalog/GR.shtml#qa

Students with Disabilities

Students with disabilities who require accommodation for access and participation in this course should contact the coordinator as soon as possible after the start of the semester. All such students must contact the UIC Disability Resource Center, obtain a Letter of Accommodation (LOA), and submit your LOA to the course coordinator. Appropriate accommodations can then be arranged to support you. Check http://drc.uic.edu/ or call 312-413-2183 for more information.

Attendance and Quizzes

- You must attend the lab section for which you are registered. There are no make-up labs; do not assume that it is ok for you to miss lab due to travel plans.

- Pre-lab quizzes are given daily. Therefore, you must come prepared for every lab. Each quiz will consist of 10 points worth of questions.

- Quizzes are distributed at the beginning of your lab section and are collected after 15 minutes. If you miss a quiz because of tardiness or absence, you will receive zero (0) points for that quiz. There are no make-up quizzes – quiz grades will be dropped so that your ten highest quizzes are counted.

- You are expected to know the names and proper spelling of the answers to the quiz questions. Each of your quiz answers must sound the same as the actual answer when pronounced out loud. If your answer does not sound the same when pronounced out loud, you will not receive credit for your answer.
Syllabus

Laboratory Reports and Lab Notebook Page Submissions

- Laboratory Reports will be collected as indicated on the Lab Schedule. Some of these reports will be completed during lab and turned in at the end of class; others will require you to complete them at home and submit the following week. Laboratory Reports will comprise a total of 220 points/500 of your grade.

- Your assignments will be considered late if submitted any later than the end of your scheduled lab section. The grade you earn will be penalized by 5% for each business day that an assignment is late beginning with the day that the assignment is due.

- If you need to submit an assignment after your lab section has ended for the day, you should bring it to the course coordinator’s office (SEL 3075). If the coordinator is not there, give your paper to the TA inside the lab. They will sign and date the paper and leave it for your TA. You must have someone verify the date and time of your submission. No papers will be accepted outside of normal lab hours – if the lab is closed, you will need to wait until the lab reopens to turn in your assignment.

- Do not email your assignments to your teaching assistant or to the course coordinator. Do not leave your assignments under the door – they will be discarded.

- You will be required to submit your carbon-copy lab notebook pages at the end of every period. These are worth 3 points each. The lowest of these will be dropped for a maximum total of 30 points. During the first week, notes taken on regular paper are accepted. After that you must take your lab notes using your own carbon-copy lab notebook.

Presentation

- You will prepare a 15-20 minute group oral presentation using Microsoft PowerPoint near the end of the semester. The presentation is worth 50 points. Presentation topics will be assigned from lab exercises completed earlier in the semester, so it is important that you take good notes and remember what you have learned.

Practical Examination

- A comprehensive practical examination will be given in the last lab meeting as indicated on the Lab Schedule. This exam will cover techniques you used during the semester, data interpretation, and short experimental manipulations.

- Additional information regarding the examination will be posted on Blackboard.
Syllabus

- If you miss the practical examination, you will be assigned a grade of INCOMPLETE ONLY IF YOU 1) contact the course coordinator and 2) provide proof of a valid excuse. Otherwise, you will receive zero (0) points for the final exam and fail the course.