BIOM/ECE 533 Biomolecular Tools for Engineers

Fall 2010 Syllabus

The instructor reserves the right to update and change the syllabus as the term and class progresses.

Course Objectives: The objective of this course is to provide engineering students with the opportunity to learn cutting-edge skills in the application of biomolecular tools to biomedical engineering and related engineering disciplines. By the end of this course, students should be able to carry out and understand basic qualitative and quantitative biomolecular analyses, including DNA extraction, gel electrophoresis, PCR, cloning, sequencing, and live-cell imaging.

Meeting Times: Monday: Readings, Lecture and Discussion, 9:00 - 10:40 AM, Wagar 107B
Wednesday: Lab, 9:00 - 11:50 AM, Yates 314

Course website: https://ramct.colostate.edu/webct/logon/1422837310101

Instructor: Diego Krapf
krapf@engr.colostate.edu (this is the fastest way to contact me)
http://www.engr.colostate.edu/~krapf/biophysics/
Office phone: 491-4255
ERC A111

Office Hours: Contact me by email to schedule office hours.

TA: Kristen Jevsevar
Kristen.Jevsevar@colostate.edu

Other recommended: 1) Introduction to Biotechnology 2nd Ed., W.J.Thieman and M.A.Palladino, Pearson 2009. 2) Lodish et al., Molecular Cell Biology 6/e, chapters 4-5 (If you do not already own a molecular cell biology book, I strongly encourage you to buy either Lodish et al. or Alberts et al.)

Students are required to purchase a lab notebook and are recommended to purchase a 3” binder to organize course materials. Lab protocols will be provided and readings will be assigned.

Course Format: Mondays will be dedicated to a short lecture followed by class discussion and student presentations of readings. Each student will be assigned one article to read and present to the class during the semester. All other students are expected to read the articles prior to the class period and to prepare at least three thoughtful questions for discussion. Wednesdays provide the opportunity to learn the methods “hands-on.” Students will be paired up into teams of two and will choose a sample to work on for the semester. Students should be familiar with the protocols before the lab meeting time (there will be weekly quizzes to make sure!). All students must keep a detailed lab notebook recording what is done in the lab.

Evaluation: There will be lab quizzes, a mid-term exam, a final exam, and lab reports. Class presentations and overall participation (more than “showing up”) will also comprise a significant portion of the final grade.
Grading:

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<tr>
<th>Component</th>
<th>Percent Total Grade</th>
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<tr>
<td>Class Discussion/Participation:</td>
<td>10%</td>
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<tr>
<td>Class Presentation:</td>
<td>20%</td>
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<tr>
<td>Lab Quizzes (~10):</td>
<td>10%</td>
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<tr>
<td>Lab Reports:</td>
<td>30%</td>
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<td>Mid-term exam:</td>
<td>15%</td>
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<td>Final Exam:</td>
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The University is required to provide reasonable accommodations to students with disabilities, so as not to discriminate on the basis of that disability. Students with disabilities are encouraged to contact the instructors to discuss their individual needs for accommodations. Also, you may visit Resources for Disabled Students: [http://rds.colostate.edu/](http://rds.colostate.edu/) or call them at (970) 491-6385.

CSU policy on Sexual Harassment applies to all persons affiliated with the University, including its students and employees. Any student in this class who believes s/he has been the subject of discrimination or harassment is encouraged to contact the instructor or the Office of Equal Opportunity and Diversity at (970) 491-5836 or via email oeed@colostate.edu