Instructor: Jane Shevtsov  
Email: jane.eco@gmail.com  
Office: Botany 113  
Office Hours: Wednesdays 4-6 pm, Thursdays 12:15-1:15 pm, or at your convenience. Talk to me or email to set up a time.  
Course Website: https://ccle.ucla.edu/course/view/171C-LIFESCI30A-2

Lecture Assistant: Nitin Joseph  
Teaching Assistant (Lab): Long Nguyen  
Undergrad Assistant (Lab): Alexandra Alving-Trihn

Course Description: In this course, you will learn how to design, study, and run mathematical models, focusing on models of how biological systems behave. We will begin by learning how to write equations that represent change. We will use such equations to model dynamical processes in ecology, physiology, and other subjects in which quantities change with time. We will then learn to analyze the behavior of these models. Along the way, we will learn the relevant fundamentals from calculus, as well as how to run these models on a computer.

Please be aware that LS30A and LS30B will be accepted as prerequisites for the introductory courses in Chemistry and Physics for life science majors (i.e. the Chem 14 series and the Physics 5 and 6 series). Contact the LS Core Office (lscore@lifesci.ucla.edu) for all enrollment questions.

Textbook: Modeling Life: The Mathematics of Biological Systems by Alan Garfinkel, Jane Shevtsov and Yina Guo. This will be made available to you on the course website.

Grading: Your grade will be computed based on the following two schemes and you will get whatever grade is higher. Grading is not competitive.

<table>
<thead>
<tr>
<th>Scheme 1</th>
<th>Scheme 2</th>
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<tbody>
<tr>
<td>Homework: 10%</td>
<td>Final exam: 85%</td>
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<tr>
<td>Labs: 15%</td>
<td>Labs: 15%</td>
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<tr>
<td>Midterm exam: 25%</td>
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<tr>
<td>Final exam: 50%</td>
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Computing: Throughout this course, we will use a free mathematics software package called SageMath, accessed through the website www.cocalc.com, to explore many of the mathematical concepts and models that we develop. SageMath is based on a very popular and user-friendly programming language called Python. Thus, you will learn some basic programming in this class. No prior programming experience is assumed – all you need is persistence and a willingness to try new things. Any work that you do not complete in lab and any additional exercises can be done at home or in any campus computer lab.
**Homework:** The purpose of homework is to give you another opportunity to think about the material and thereby cement it in your mind. It's a learning tool, not an evaluation tool. Therefore, homework will be graded on whether you appear to have made a serious effort. That said, it is to your definite advantage to work hard on the homework, as this will help you tremendously on exams. *Late homework will not be accepted* except in the case of a documented illness or emergency, but your lowest homework and lab grades will be dropped.

**Laptop Policy:** We like technology, but there is now ample research showing that taking notes on a laptop is much less beneficial than doing so by hand. (It also doesn't work well in a class where we will use diagrams and mathematical notation a lot.) In addition to the ever-present temptation to go on Facebook, laptops make it easy to type down everything the instructor says instead of summarizing it, but looking for key points and summarizing are some of the most important benefits of taking notes. Therefore, *laptops are not allowed in class*, with the following exceptions:

1. You have a documented disability for which taking notes on a computer is an accommodation. Please see the section on disability accommodations.
2. You have truly illegible handwriting. Please show me a sample of said handwriting by the end of Week 1.
3. You are aware of the downsides of computer use in the classroom but make an informed decision to do so anyway. To take advantage of this exception, please give me a one-page (typed or hand-written) write-up on the downsides of computer use in the classroom by the end of Week 1. The following articles can get you started.
   - “A Learning Secret: Don’t Take Notes with a Laptop”  
     [https://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/](https://www.scientificamerican.com/article/a-learning-secret-don-t-take-notes-with-a-laptop/)
   - “Students are Better Off without a Laptop in the Classroom”  
     [https://www.scientificamerican.com/article/students-are-better-off-without-a-laptop-in-the-classroom/](https://www.scientificamerican.com/article/students-are-better-off-without-a-laptop-in-the-classroom/)
   - “New Studies Show the Cost of Laptop Use in Lecture Classes”  

**Collaboration and Cheating:** You are encouraged to work with other students on homework and labs, but don't copy their work word for word. That's a waste of your time as you don't learn from copying. Also, please list your collaborators (not including instructors). This is standard practice in science and you should start getting used to it now.

If you decide to cheat, the primary effect is that you will be a cheater. If caught, you will be reported to the Dean of Students for punishment. However, I'd much rather have you be too proud to cheat than too scared to cheat.

**Disability Accommodations:** I am always happy to discuss any disability-related needs. Please talk to me after class or send me an email. For test-taking, note taking and other accommodations and resources, contact the Center for Accessible Education (CAE) at (310) 825-1501 or in person at Murphy Hall A255. When possible, you should contact the CAE within the first two weeks of the term, as reasonable notice is needed to coordinate accommodations. For more information, visit [www.cae.ucla.edu](http://www.cae.ucla.edu).