

LB 273 and 274: Physics of the Life Sciences

What are the Lyman Briggs physics courses?

The LBC physics course sequence has been re-titled “Physics of the Life Sciences,” and one of the most important goals of the sequence is to leave you with an overarching conceptual understanding of physics and the interconnectedness of physical phenomena, and how the laws of physics affect living organisms. For example, we will explain to you why Godzilla simply could not exist, and why bugs don’t need lungs, but humans do.

Lyman Briggs College offers a two semester, calculus-based physics course sequence: LB 273 and LB 274, Physics I and II. In Physics I, we focus on Newton’s laws and kinematics (why objects move and how they move), thermodynamics (how heat and energy affect physical systems), and fluid dynamics (how objects are affected by air and water). In Physics II, we focus on electricity and magnetism, interference and diffraction, and “modern physics,” which really means a discussion of nuclear and particle physics.

How are they different than similar Physics department courses?

The most comparable courses offered by the physics department are PHY 231 and 232, Physics I and II. These courses are algebra-based, whereas LB 273/4 are calculus-based. The two course sequences cover relatively similar material. However, **the Lyman Briggs physics sequence is strongly oriented toward the needs of life science students**, and thus emphasizes topics that are likely to be relevant to students who are interested in life science and health-related professions. In addition, LB 273 and 274 include both a lecture and hands-on (recitation/laboratory) component, which are tightly integrated together and approach the course material in complementary ways.

Why should I take Lyman Briggs physics?

There are several reasons you might want to enroll in the LBC physics sequence:

1. The courses use lots of **active learning** techniques in both the lecture and hands-on components, which makes class more engaging and means that you will learn and retain much more physics than in a more traditional course.
2. The Lyman Briggs physics courses have much **smaller class sizes** than the comparable Physics Department courses, meaning that you will get more opportunities to interact with the professor, TA, and undergraduate learning assistants.
3. There is a **strong focus on life science-related physics problems**, and the courses are deliberately taught in a way that is supportive of life science students.
4. You will be taking the class with **other Lyman Briggs students**, including Learning Assistants that are former students in the class. It’s a great learning environment!

Will there be tons of calculus?

The LBC physics courses use calculus to illustrate physics concepts, but calculus is not extensively used in either homework assignments or exams. We have a short review of all of the necessary math concepts at the beginning of Physics I. In general, students who do reasonably well in Calculus I will have no problems at all with the math in LB 273/274.

If you have any questions, please feel free to contact Professor Brian O’Shea at oshea@msu.edu!