

# Introduction to Natural Science: Life, The Universe and Everything

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**Prerequisites:** Proficiency with high school level algebra. Recommended but not required: prior exposure to some science content, preferably chemistry and/or biology.

**Areas of study:** Biology, chemistry, mathematics, physics and scientific communication.

**Class Standing:** This all-level program accepts up to 50% freshman students; transfer students welcome.

## Tentative Weekly Schedule - Fall

| Monday                 | Tuesday                 | Wednesday              | Thursday               | Friday                     |
|------------------------|-------------------------|------------------------|------------------------|----------------------------|
| NO CLASS ON<br>MONDAYS | 8:30-10:00<br>Lecture   | 8:30-9:30<br>Lecture   | 8:30-10:00<br>Lecture  | 8:30-12:00<br>Lab/Workshop |
|                        | 10:30-12:30<br>Workshop | 10:00-12:00<br>Seminar | 10:30-12:00<br>Lecture |                            |
|                        | 1:30-2:30<br>Lecture    |                        | 1:00-5:00<br>Tutoring  | 1:00-4:30<br>Lab/Workshop  |
|                        | 3:00-5:00<br>Workshop   |                        |                        |                            |

Introduction to Natural Science: Life, The Universe and Everything is an integrated introduction to college-level science. Success in the program requires a desire to engage with math and proficiency with high school level algebra. We do not require previous exposure to science content, but do recommend it, preferably in chemistry and/or biology. The program is rigorous, challenging, and time-consuming, but supports the success of students who are willing to commit genuinely to the collective work of our learning community.

This program will use unifying perspectives from physics and chemistry to provide a conceptual and experimental introduction to natural science. We will base our inquiry around the organizing theme of cycles and transformations of matter and energy in both living and nonliving systems. This thematic approach will focus on understanding life and the universe from a variety of scales. We'll integrate the study of biology, chemistry, mathematics, and physics through all three quarters, though in fall, our work (especially our hands-on lab work) will revolve around chemistry, while in winter, it will revolve around biology.

Program activities will include lectures, small-collaborative-group problem-solving workshops, laboratories, field trips and seminars. Seminar reading and discussions will be concerned with history, philosophy, and contemporary applications of science. Throughout the entire program, students will be expected to describe their learning in written work (laboratory notebooks, formal papers) and in public presentations. This work will emphasize critical and quantitative reasoning, as well as the development of proficient writing and speaking skills.

This program is designed for students who want to take their first year of college science. This rigorous program will require a serious commitment of time and effort on the part of the student. Students who simply want exposure to science will find this program quite demanding and should consult the faculty before the program begins. Overall, we expect students to end the program in the spring with a working knowledge of scientific and mathematical concepts, with the ability to reason critically and solve problems, and with hands-on experience in natural science.

Students who complete this program will be prepared for more advanced study in science programs such as Molecule to Organism, Marine Life, Environmental Analysis, Motion, and Atoms, Molecules and Reactions.

Total credits: 16 per quarter

Fees: \$50/quarter for field trips