



Learning Outcomes for the Biology Pre-Optometry Concentration

Lower Division Courses

Lower division elective learning outcomes

- x Learn foundational core scientific concepts in biology, chemistry, and physics to become biologically literate. These core concepts are evolution, structure & function, information flow, exchange and storage, pathways and transformations of energy and matter, and systems (recommended by the American Association for the Advancement of Sciences).
- x Learn mathematical concepts utilized in the biological sciences.
- x Learn the process of science through problem solving and data interpretation. This involves the ability to develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions.
- x Develop communication skills.
- x Understand the interdisciplinary nature of science.
- x Understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts.
- x Function effectively on teams to solve problems.

Required lower division courses for a Biology major (see Biology major checklist)

knowledge of mathematics and science to areas relevant to the discipline.

- x Develop independent inquiry and problem-solving skills.
- x Develop communication skills.
- x Understand ethical and professional responsibilities and the impact of technical and/or scientific solutions in global, economic, environmental, and societal contexts.

Required upper division courses

- x •™ upper division biology elective Genetics (BIOL2490) as a



BIOL3420 General Microbiology (for biology majors) or BIOL2411 Microbiology for Human Affairs (non-majors course; does not count toward your major)

BIOL3406 and 3407 Structure Function I and II are required for some programs (these are non-majors courses; does not count toward your major)

CHEM4320 Biochemistry I (CHEM4411)

Recommended upper division courses

D } •™ upper division biology electives Genetics (BIOL2490) as a pre-requisite. Additional pre-requisite courses are indicated in parentheses along with the upper division core designation, if applicable. These courses are just suggestions, you can still select from ALL the upper division biology elective course offerings listed in the UG Bulletin. Courses in BOLD are highly suggested (but, not required).

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Some of these trait competencies are folded into biology courses. However, you will find opportunities to discover (and develop) how these traits incorporate you as a unique individual. Courses in other disciplines, such as psychology, communications, sociology, and foreign language or cultural studies may be helpful.

Shadowing Requirement

All optometry schools also require shadowing experience. Each school has different priorities, some have a specific number of hours, some have a specific number of experiences. In general, shadow at least 3 doctors, that you are not related to, from different practices for a minimum of 15 hrs. Shadow one of those doctors more extensively. Contact each program you plan to apply to for detailed information.