

Natural Sciences

Academic Learning Compact

Expected Student Learning Outcomes for the Natural Sciences Area of Concentration:

A student desiring to graduate with a Natural Sciences area of concentration should have a diverse enough background to be reasonably called a natural scientist and, at the same time, should have attained some level of mastery in one of the following disciplines: biology, chemistry, mathematics or physics. These goals are normally achieved by meeting the following requirements:

1. Satisfactory completion of at least 8 courses with the Division of Natural Sciences. These courses are to be distributed among at least three disciplines. The minimum that must be done in each is the successful completion of all the introductory sequence in that discipline.
2. A minimum of two semester courses beyond the introductory sequence in one discipline.
3. At least one Independent Study Project in the Natural Sciences.
4. A senior thesis in some area of the natural sciences is sponsored by a faculty member of the Natural Sciences Division.

Expected Outcomes for Natural Sciences Area of Concentration	Content	Communication	Critical Thinking
1. Students demonstrate intermediate mastery of the content, communication skills, and critical thinking skills in one natural sciences discipline (biology, chemistry, mathematics, or physics) by completing the both the introductory sequence of courses plus two additional courses.	X	X	X
2. Students master the content, communication skills, and critical thinking skills in the introductory course sequence in at least three of the four natural science disciplines (biology, chemistry, mathematics, or physics).	X	X	X
3. Students demonstrate their ability to independently complete a research project.	X	X	X
4. Students develop, implement, and communicate the results of a thesis or project and defend it in an oral exam.	X	X	X
5. Students demonstrate an understanding of	X		X

the scientific method.			
------------------------	--	--	--

Measures to track student progress:

Beginning and continuing students in courses are evaluated on the basis of homework assignments, exams, lab reports, and participation in class discussions. Evaluative comments are summarized at the end of each semester in a narrative course evaluation. Two Natural Science faculty members review all aspects of a student's previous work and the student's proposed plan of additional work in the fifth term before a student is allowed to declare Natural Sciences as their area of concentration. Three Natural Science faculty members review and approve student's progress toward meeting the requirements for a Natural Sciences area of concentration when they submit a Thesis Prospectus in their sixth term.

Specific measures to demonstrate each graduate's competencies:

All students with a concentration in Natural Sciences develop and implement a research thesis or project under the direct supervision of a member of the Natural Sciences faculty, and defend that research thesis or project in a public oral baccalaureate exam. Theses and projects are judged according to the comprehensiveness of the research, use of the scientific method, the strength and originality of the conclusions, and the clarity and elegance of the writing style. Performance on the oral exam is judged by how well the student responds to questions, demonstrates knowledge of the field, and defends his or her own conclusions.