Department of Chemistry and Biochemistry

Chemistry BA/BS

The program’s learning objectives are based on the American Chemical Society’s Guidelines, and describe what skills students will learn, and what they will be able to do with those skills.

To measure student learning, the department uses course enrollment statistics, grade distributions, and standardized American Chemical Society final exams, and senior presentations and poster seminars (the latter is for the Culminating Experience).

Student learning outcomes indicate that students met or exceeded department expectations. Program retention rates remained high, and students score 10-15 points higher on the American Chemical Society exams than the national average.

Chemistry & Biochemistry MS/Ph.D.

The program learning objectives articulate the skills students will further develop from their undergraduate training to become subject matter experts in their respective fields.

To assess student learning, the department uses proposal defense examinations, comprehensive examinations, dissertation defense examinations, and professional presentations and/or publications.

Reports or results from thesis and dissertation advisory committees indicated that students made satisfactory progress in their programs. Faculty are discussing developing a core group of courses common to all programs.

School of Life Sciences

Biological Life Sciences BS

The program objectives are articulate and broken into smaller, measurable sub-components.
To assess student learning, the department uses concept essays, content tests, report rubrics, student enrollment data, and pre-professional data collection.

Results indicate that students are performing at or above expectations. This resulted from a number of changes the department implemented in the past. Among those changes were study guides for laboratories in general courses, outlines for Teaching Assistants in general core courses, established a set of common lab questions and scoring rubrics, and edited the laboratory manuals to make them more uniform. Faculty are discussing making the scoring process of the concept essay test more uniform in introductory courses.

**Biological Life Sciences MS/Ph.D.**

The program objectives articulate what students will learn, and how they will be able to apply what they have learned in professional industry and other life contexts.

To evaluate student progress, the department uses Graduate Record Exam scores, colloquium rubrics, graduate advising committee annual meeting forms, thesis seminars, theses, and dissertations.

Results from the graduate programs indicate that students are meeting or exceeding department expectations. A number of doctoral students presented at conferences and published their work in refereed academic journals. Some graduate student also received grants.

**Department of Mathematical Sciences**

**Mathematics BS**

The department’s program objectives clearly describe the skills students will attain and what they will be able to do with them.

To measure student learning progress, the department uses faculty surveys, comprehensive final exams, written proof samples, and senior surveys.

Results indicate that the progression rate for students who passed the subset questions was 93%. Department faculty are in the process of discussing changes to how they improve assessing student learning.

**Mathematics MS/Ph.D.**

The program learning objectives clearly explain what students will learn and what they will be able to do with what they have learned.
To measure student progress, the department uses comprehensive exams, and theses and doctoral dissertations.

Results indicate that students are meeting or exceeding department expectations, with the vast majority successfully passing the preliminary examinations, and completing their theses and dissertations.

**Department of Physics and Astronomy**

**Physics BS**

The program learning objectives are clearly explained. They articulate what students will learn and what they will be able to do with what they have learned.

To assess student learning, the department uses alumni surveys, employer surveys, senior exit surveys, course, and research evaluations.

The department found that students met or exceeded expectations. Much of the students’ success was attributed to the Physics Learning Center the department initiated, which significantly helped students improve their comprehension of topics in Physics. The department is continuing to implement more direct student supervision towards program completion, and encouraging faculty to budget more support in their grants. Also, the department implemented three courses to help students better transition from lower-division to upper-division courses.

**Physics MS/Ph.D.**

The program objectives clearly explain what students will learn, and what they will be able to do with what they have learned.

To measure student success and progress, the department uses theses, dissertations, and defenses, exit interviews, employer surveys, and alumni surveys.

Results indicate that students made satisfactory progress in their programs, with many successfully completing their theses and dissertations, and some even publishing their work or presenting at professional conferences. Faculty are working with students to complete their programs in shorter periods of time, which has helped graduation and retention rates.
**Department of Geoscience**

**BS in Earth and Environmental Science**

The program objectives clearly articulated what students will learn, and what they will be able to do with what they have learned. To assess the program objectives, the department used grades, laboratory exams and rubrics, exit interviews, job placement, and internships.

Results indicated that students did very well in the program, with two-thirds of the student having employment lined up, or planning to attend graduate school. Academic advisors’ evaluations of their students’ progress was positive.

**Water Resource Management MS**

The program objectives clearly explain what students will learn, and what they will be able to do with what they have learned.

To measure student learning progress, faculty use class discussions, theses and defenses, committee meetings, and scientific presentations.

Results indicate that students met or exceeded department expectations. Three students were selected as first author for publications, and presented their work.