

Course Outcomes Guide (COG)

Directions: Please complete this form to document your progress toward improving student learning. For each item, indicate your progress and your anticipated next steps. Thank you!

Course/Program Title: BTC-269/270 Biotechnology Internship I/ Biotechnology Program

Date: August 22, 2013

Course/Program Team: Alicia Manfre, Judith Peisen

Expected Learning Outcomes

1. Reinforce and expand basic laboratory skills learned in academic coursework to include techniques and equipment needed in scientific research laboratories and/or manufacturing facilities.
2. Work with the internship site supervisor to develop an individualized project that utilizes either sound scientific research procedures or expands on the intern's biotechnology knowledge.
3. Explore career opportunities in Biotechnology and develop an understanding of the skills required to achieve a career in the area of their choice.
4. Enhance public speaking and presentation skills that will be useful for career in science. Share information involving the project with other members of the science community.
5. Maintain a working record of new skills/tasks learned while working at the internship site.

Assessment (How do or will students demonstrate achievement of each outcome? Please attach a copy of your assessment electronically.)

- Reinforce and expand basic laboratory skills learned in academic coursework to include techniques and equipment needed in scientific research laboratories and/or manufacturing facilities.
 - Research projects will be selected by faculty supervisor and tailored to the skill level of the students enrolled in the course
 - Research notebooks will be kept by the student to document what skills they learn during the course of the semester.
- Work with the internship site supervisor to develop an individualized project that utilizes either sound scientific research procedures or expands on the intern's biotechnology knowledge.
 - Students work with their site supervisor to develop a scientific question, perform necessary primary literature research on the project topic, construct a hypothesis, test with experimentation, analyze results and draw conclusions
- Explore career opportunities in Biotechnology and develop an understanding of the skills required to achieve a career in the area of their choice.

- Students are required to interview a person currently working in the biotech field then write a paper describing a career in biotechnology and explore the skill set required to work in that particular job
- Enhance public speaking and presentation skills that will be useful for career in science. Share information involving the project with other members of the science community.
 - Students design a poster presentation or a PowerPoint presentation and formally present the information to members of the HCC Science faculty and staff
- Maintain a working record of new skills/tasks learned while working at the internship site.
 - Students keep a journal of work activities that includes student comments reflections and notes. The journal is turned in bi-weekly to the Biotechnology Program Coordinator to keep track of the student's progress throughout the semester

Validation (What methods have you used or will you use to validate your assessment?)

Site supervisors (A. Manfre for on campus, and various industry scientists for off campus internships) evaluate the student's basic lab skills based on their experience with the students. Overall we have had favorable evaluations both from on-campus internships (79.6%) and by off campus evaluators (93.7%).

Results (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

The data shows that students have a very high level of performance for basic lab skills.

The weakest point for most students is public speaking. This is difficult to work with the students on since the presentation comes at the end of the semester.

Students who stay on campus for their internships tend to be the lower grade-level students who need more assistance and are less strong academically. This is reflected in the difference in the evaluation score difference between on campus (79.6%) and off campus (93.7%) internships.

Follow-up (How have you used or how will you use the data to improve student learning?)

No Data Yet

Budget Justification (What resources are necessary to improve student learning?)

None at this time

	SU 2009	FA 2009	SP 2010	SU 2010	FA 2010	SP 2011	SU 2011	FA 2011	SP 2012	SU 2012	FA 2012	SP 2013	SU 2013
# Active students							8	3	2	3	3	3	5
% W							0%	0%	0%	0%	0%	0%	0%
*% walk-away Fs							0%	0%	0%	0%	0%	0%	0%
% Success (A,B,C)							100%	100%	100%	66.7%	100%	100%	100%
Mean Supervisor Evaluation							84.5%	60%	N/A*	97.0%	91.3%	93.3%	89.8%
Rubric Evaluation							85.4%	77.3%	95.5%	77.0%*	92.3%	91.6%	88.8%
Mean course grade							85.4%	77.3%	95.5%	77.0%*	92.3%	91.6%	88.8%
Gen Ed Outcome Mean Score	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Item Analysis Weakest Content Areas							Public Speaking Skills	Basic Lab Skills	*numerical scores not collected from site supervisor	*One student (out of three) did not complete any assignments other than the lab time and failed course.		Public Speaking Skills	Public Speaking Skills