Assessment Plan
Department of Biology, Queens College

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What I learned about learning goals from assessment workshops

- At the departmental level, learning goals should relate to a program (e.g. the major).
- Learning goals should only include what you expect for all students in your program (what makes them different from other students).
- Learning goals should be assessable.

Learning Goals For Biology Majors

A. Gain a broad understanding of the concepts that have shaped the field of biology:

1. understand the cellular basis of life
2. know how traits are inherited, expressed and modified
3. describe how evolution and ecology shape the diversity of life

B. Develop scientific competencies and critical thinking skills:

4. be able to evaluate scientific evidence critically, including data analysis
5. learn about contemporary analytical techniques and use some of them
6. be able to communicate the results of scientific investigations orally
7. be able to communicate the results of scientific investigations in writing

C. Acquire ethical values and attitudes:

8. value the diversity of life forms and its significance
9. understand the importance of public support of biological research
10. understand the impact of scientific literacy and education in the life sciences
11. be aware of the importance of ethics in science

D. 12. Be prepared for careers in the life sciences.

Curriculum Map

Courses	Objectives											
	Concepts			Competencies				Values				Post-Grad
	1	2	3	4	5	6	7	8	9	10	11	12
105 Intro Bio I (L)	X	X		X	X		X	X		X		X
106 Intro Bio II (L)	X	X	X	X	X		X	X		X		X
201 Gen Micro (L)	X	X	X		X	X		X				X
213 Field Bot (L)		X	X		X	X	X	X				
220 Inv Zoo (L)	X	X	X		X			X				
226 Comp Anat (L)		X	X		X			X				
230 Biostat (L)				X	X							X
245 Evo & Cult		X	X	X		X		X	X	X		
251 Gen Lab (L)	X	X		X	X							
262 Lab Molec (L)	X	X			X		X					
263 Lab Cell (L)	X			X	X		X					
280 Topic Biol												
285 Prin Gen		X										X
286 Prin Cell	X											X
287 Prin Evol			X									X
310 Low Plant (L)	X	X	X		X			X				
312 Mor&Evo Plant (L)	X	X	X		X			X				
315 High Plant (L)	X	X	X		X	X	X	X				
320 Parisit (L)	X	X	X		X			X				
321 Entomol (L)	X	X	X		X			X				
325 A&P I (L)	X		X		X			X				X
326 A&P II (L)	X		X		X			X				X
340 Gen Ecol		X	X	X	X	X	X	X	X			
344 Cont Iss B	X	X	X	X	X	X	X	X	X		X	
345W Anim Behave (L)		X	X		X		X	X				
347 Marine Biol (L)	X	X	X	X	X			X	X			
350 Mol Gen	X	X	X	X	X	X		X				
355 Evolution Lab (L)		X	X	X	X			X				
360 Vert Histo (L)	X				X							
365 Dev Biol (L)	X	X	X	X	X	X	X	X		X	X	
366 Immuno	X		X		X							
371 Plant Phys (L)	X		X		X		X					
373 Neuro	X				X	X	X	X				
380 Fld Biol Stud (L)	X	X	X		X			X				
381 Colloq	X	X	X	X			X	X	X	X		
390 Res I (L)					X		X				X	
391 Res II (L)					X		X				X	
395 Hon Res I (L)					X		X				X	
396 Hon Res II (L)					X		X				X	

What I learned about assessments from assessment workshops

- Don’t try to do everything at once.
- Don’t waste time on assessments that don’t matter.
- To the extent possible, evaluate students near the end of their degrees.

Assessments

Goals	Assessment
Indirect measures of student learning	
1-12	Student Exit Survey for graduating students
1-11	Student Entrance Survey for newly declared majors
12	Post-graduation Survey
Direct measures of student learning	
1	Insert common question(s) into final exams of 300-level courses in cellular biology (Parasitology, Anatomy & Physiology, Development, Histology, Immunology, Plant Physiology, Neurobiology)
2	Insert common question(s) into final exams of 300-level courses based on genetics (Animal Behavior, Molecular Genetics)
3	Insert common question(s) into final exams of 300-level courses in ecology and evolution (Lower Plants, Morph and Evolution of Plants, Higher Plants, Entomology, Ecology, Marine Biology, Evolution Lab)
4	Sample student tests from 300-level courses and assess student performance on evidence-based questions as compared to fact recall questions
5	Insert common question into final exams of 300-level lab courses
6	Instructors of 300-level courses with oral presentations will assess students using a common rubric (Higher Plants, Ecology, Contemp Issues in Biology, Developmental Biology)
7	Collect student papers from 300-level courses with writing assignments and assess by a common rubric (Higher Plants, Ecology, Contemp Issues in Biology, Animal Behavior, Developmental Biology, Colloquium, Research)

Assessment Timeline

- Year 1
  - Student exit survey
  - Assessment of oral and written presentations (alternating semesters)
- Year 2
  - Student exit and entry surveys
  - Assessment of oral and written presentations (alternating semesters)
- Year 3
  - Student exit and entry surveys
  - Assessment of oral and written presentations (alternating semesters)
  - Testing mastery of genetics concepts

Closing the loop

- Collected and provided feedback on course syllabi
- Modified student surveys and assessment rubrics
- Future: changes in curriculum?