

Connecting General Education and the Major

Workshop for the AAC&U Institute on General Education

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Workshop Overview

Not for General Education Only: Goals for Students' Liberal Education

Liberal Education Across the Curriculum
A Framework for Educational Planning

Example of Goals Across the Curriculum
Discussion

Implications for Departments
Exercise: Goals Across the Curriculum and Anonymous History Department
Goals Across the Curriculum and the Biochemistry Department

Milestones

Discussion and Wrap-Up

Liberal Education Across the Curriculum

A Framework for Educational Planning

First Year Experience

Major(s)/Minor(s)

Culminating Work
and Assessments

Knowledge of Human Cultures and the Physical and Natural World

- *Arts, humanities
- *Sciences, social sciences
- *etc.

Intellectual and Practical Skills, including:

- *Written and oral communication
- *Inquiry, critical and creative thinking
- *Quantitative literacy
- *Information literacy
- *Teamwork and problem solving

Personal and Social Responsibilities, including:

- *Civic knowledge and engagement—local and global
- *Intercultural knowledge and competence
- *Ethical reasoning and action
- *Foundations and skills for lifelong learning

Integrative Learning, including:

- *The demonstrated capacity to adapt knowledge, skills and responsibilities to new settings and questions

DUKE UNIVERSITY
Durham, NC

PROFILE

Private research university
6,325 undergraduate students

INSTITUTIONAL LEARNING GOALS

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	General Education Requirements							
	Modes of Inquiry		Focused Inquiries			Competencies		
	Quantitative, Inductive, & Deductive Reasoning	Interpretive & Aesthetic Approaches	Cross-Cultural Inquiry	Science, Technology & Society	Ethical Inquiry	Foreign Language	Writing	Research
Areas of Knowledge (Min.)								
Arts & Literature (3)								
Civilizations (3)								
Social Sciences (3)								
Natural Sciences & Mathematics (3)								
Minimum Exposures required	2	2	2	2	2	2	2	2

INNOVATIVE PRACTICES

The major initiative at Duke University has been the development and implementation of a new undergraduate curriculum for Trinity College of Arts & Sciences. The curriculum was understood to serve as the University's hallmark reflecting the values of the faculty, the capabilities of the students, and the aspirations of the institution. As a research university, we intend to connect our students with the broad array of scholarship of our faculty through an undergraduate educational experience that is inquiry based. Pedagogies of engagement, such as experiential learning, are encouraged to move students beyond the passive receipt of transmitted knowledge to active participation in the discovery, critical evaluation, and application of knowledge and understanding. The new curriculum involves greater expectations for both our students and our faculty in achieving specific student learning objectives at the level of the course, and across the entire curriculum. The curriculum is designed to foster depth, breadth, and coherency; to develop the traditional skills of a liberal education including critical thinking, problem solving, synthesis, and effective communication; and to have students experience the interrelatedness of knowledge across the disciplines. A matrix structure reflects four interrelated components of the curriculum: areas of knowledge, modes of inquiry, focused inquiries, and competencies. The basic element of the curriculum, the course, can have several intellectual goals and simultaneously accomplish several student learning outcomes. **Upper level courses in the major can contribute to general education requirements and thus the traditional bifurcation between general education courses and coursework in the major is eliminated.**

* The matrix format is no longer used for student advising.

HERI/CIRP 2007-08 Faculty Survey Findings

Faculty Goals for Undergraduate Education (Percentage saying "Very Important" or "Essential")

	2004-05	2007-08	% Change
<u>Knowledge of Human Cultures and the Physical World</u>			
Help master knowledge in discipline	99.0	99.6	0.6
Instill appreciation of liberal arts	57.9	72.8	14.9
<u>Intellectual and Practical Skills</u>			
Help students evaluate quality and reliability of information		97.2	
Promoting ability to write effectively		96.4	
Develop ability to think critically	94.6	95.1	0.5
Develop creative capacities	69.0	81.5	12.5
<u>Personal and Social Responsibility</u>			
Teach tolerance/respect for different beliefs		82.5	
Enhance students' knowledge of and appreciation for other racial/ethnic groups	57.6	75.2	17.6
Engage students in civil discourse around controversial issues		72.4	
Enhance students' self-understanding	58.4	71.8	13.4
Develop moral character	57.1	70.2	13.1
Help students develop personal values	50.8	66.1	15.3
Instill a commitment to community service	36.4	55.5	19.1
Provide for students' emotional development	35.2	48.1	12.9
<u>Integrative and Applied Learning</u>			
Prepare students for employment	70.2	81.5	11.3
Prepare students for grad school	63.4	75.5	12.1
Encourage students to become agents of change		57.8	

(done triennially since 1989-90; 22,562 full-time college faculty—all disciplines—at 372 4-year colleges and universities)

ANONYMOUS COLLEGE DEPARTMENT OF HISTORY

(major requirement – 36 credit hours)

All students are required to maintain a history portfolio. Each portfolio will include three items from the 100-200 level, three from the 300-400 level, and the required senior research paper. This ensures that all students develop essential historical skills, whatever sequence of courses they take.

Course Sequence	Portfolio Requirements
<p><i>100 Level</i> World History U.S. History to 1865 Western Civilization to 1660</p>	<p>Historical Essay Documentary Analysis Abstract of document or article</p>
<p><i>200 Level</i> U.S. History since 1865- or Western Civilization Since 1660 or a 200-Level Elective Global Field Survey-Level Course (e.g., African history) Historical Methods and Materials</p>	<p>Documentary analysis using multiple genres of source materials Numerical Analysis (Assessment of data, charts, and tables) Graphic Analysis (Assessment of artifacts, maps, and blueprints)</p>
<p><i>300 Level</i> Proseminar in Historical Research Global Field Upper-Level Course Free Elective</p>	<p>Historical Abstract of a Journal Article Research Proposal Library/Online Research Exercises Bibliographic Essays/Literature Review Scholarly Book Review Peer Evaluation</p>
<p><i>400 Level</i> Free Elective Free Elective Capstone Seminar</p>	<p>Historical Fiction Periodic and Literature Review Video Research paper in field related to history Capstone Seminar Research Paper (Required)</p>

Source: *Handbook of the Undergraduate Curriculum: A Comprehensive Guide to Purposes, Structures, Practices, and Change*, Jerry G. Gaff, James L. Ratcliff and associates (Association of American Colleges & Universities, 1996)

Undergraduate biochemistry

Inspired by the article cited below, your department has developed the goals listed below for the biochemistry major.

Which of the General Education Institute Team's recommended goals for learning are already being addressed in this department? Which are not addressed? Whose responsibility is it to address the missing goals? The general education program – and if so, how? The department – and if so, how? Both together? How?

Departmental goals:

Biochemistry students should have the following skills when they have finished their undergraduate courses:

- an understanding of the fundamentals for chemistry and biology, and the key principles of biochemistry and molecular biology
- an awareness of the major issues at the forefront of the discipline
- the ability to assess primary papers critically
- good 'quantitative' skills, such as the ability to prepare reagents accurately and reproducibly for experiments
- the ability to dissect a problem into its key features
- the ability to design experiments and understand what the experimental approach can and cannot tell you
- the ability to interpret experimental data and identify consistent and inconsistent components
- the ability to design follow-up experiments
- the ability to work safely and effectively in a laboratory
- the awareness of the available resources and how to use them, including the ability to collaborate with other researchers
- the ability to think in an integrated manner and look at problems from different perspectives.

- *Perspectives: Nature Reviews/Molecular Cell Biology— Ellis Bell*
- *Information provided to AAC&U by Project Kaleidoscope*

Comparing the AAC&U LEAP Outcomes with the American Society for Biochemistry and Molecular Biology (ASBMB) Learning Outcomes

LEAP	ASBMB
Knowledge of Human Culture and the Physical and Natural World	
<ul style="list-style-type: none"> • Study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts 	<ul style="list-style-type: none"> • Understanding of the fundamentals of chemistry and biology and the key principles of biochemistry and molecular biology
Intellectual and Practical Skills	
<ul style="list-style-type: none"> • Inquiry and analysis • Critical and creative thinking • Written and oral communication • Quantitative literacy • Information literacy • Teamwork and problem solving 	<ul style="list-style-type: none"> • Ability to assess primary papers critically • Good quantitative skills • Ability to design experiments and understand the limitations of the experimental approach • Ability to interpret experimental data • Ability to design follow-up experiments • Ability to work safely and effectively in a laboratory • Awareness of the available resources and how to use them • Ability to use computers as information and research tools • Ability to collaborate with other researchers • Ability to use oral, written, and visual presentations to present their work to both a science-literate and a science-non-literate audience
Personal and Social Responsibility	
<ul style="list-style-type: none"> • Civic knowledge and engagement - local and global • Intercultural knowledge and competence • Ethical reasoning and action • Foundations and skills for lifelong learning 	<ul style="list-style-type: none"> • Awareness of the major issues at the forefront of the discipline • Awareness of the ethical issues in the molecular life sciences
Integrative Learning	
<ul style="list-style-type: none"> • Synthesis and advanced accomplishment across general and specialized fields 	<ul style="list-style-type: none"> • Ability to dissect a problem into its key features • Ability to think in an integrated manner and look at problems from different perspectives

From Biochemistry/Molecular Biology and Liberal Education: A Report to the Teagle Foundation
(American Society for Biochemistry and Molecular Biology, 2008)