

## BIOLOGY Core Competencies

**Learning Outcome:**

Critical Thinking: Students will be able to examine, critique and synthesize information in order to arrive at reasoned conclusions.

**Outcome Measure:**

ETS Proficiency Profile Exam

**Criteria for Success (how do you judge if the students have met your standards):**

85% of the students will be marginal or proficient at Level 2 Reading/Critical Thinking.

**Aligned with DQP Learning Areas (circle one or more but not all five):**

1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

**Longitudinal Data:**

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
<b>ETS Proficiency Profile Level 2 Critical Thinking</b>	<b>94.6%</b>	<b>89.9%</b>	<b>91.0%</b>	<b>95.1%</b>	<b>94.3%</b>

**Conclusions Drawn from Data:**

Biology students scored above the criteria for success for critical thinking.

**Changes to be Made Based on Data:**

No changes to the program.

**Rubric Used**

No rubric. We use the ETS Proficiency Profile test results.

**BIOLOGY**  
**Core Competencies**

**Learning Outcome:**

Written: Students will be able to effectively express ideas and information to others through written communication.

**Outcome Measure:**

ETS Proficiency Profile Exam

**Criteria for Success (how do you judge if the students have met your standards):**

85% of the students will be marginal or proficient at Level 2 Writing.

**Aligned with DQP Learning Areas (circle one or more but not all five):**

1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

**Longitudinal Data:**

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
<b>ETS Proficiency Profile Level 2 Writing</b>	<b>94.6%</b>	<b>89.9%</b>	<b>89.7%</b>	<b>96.3%</b>	<b>92.0%</b>

**Conclusions Drawn from Data:**

Biology students scored above the criteria for success for written communication.

**Changes to be Made Based on Data:**

No changes to the program.

**Rubric Used**

No rubric. We use the ETS Proficiency Profile test results.

**BIOLOGY**  
**Core Competencies**

**Learning Outcome:**

Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

**Outcome Measure:**

ETS Proficiency Profile Exam

**Outcome Measure:**

ETS Proficiency Profile Exam

**Criteria for Success (how do you judge if the students have met your standards):**

90% of the students will be marginal or proficient at Level 2 Math.

**Aligned with DQP Learning Areas (circle one or more but not all five):**

1. Specialized Knowledge
2. Broad Integrative Knowledge
3. Intellectual Skills/Core Competencies
4. Applied and Collaborative Learning, and
5. Civic and Global Learning

**Longitudinal Data:**

	Percentage of Students Marginal or Proficient				
	2012-13	2013-14	2014-15	2015-16	2016-17
<b>ETS Proficiency Profile Level 2 Math</b>	<b>100.0%</b>	<b>96.0%</b>	<b>97.4%</b>	<b>95.1%</b>	<b>100.0%</b>

**Conclusions Drawn from Data:**

Biology students scored above the criteria for success for quantitative reasoning.

**Changes to be Made Based on Data:**

No changes to the program.

**Rubric Used**

No rubric. We use the ETS Proficiency Profile test results.

## 2016-2017 Biology Department Assessment of Core Competencies

### Core Competency: Oral Communication

**Outcome Measure:** Senior Seminar (BIO 497) Signature Assignment: Bioethical Issue Presentation

**Criteria for Success:** 80% of students will score at a level of 3 or higher in each skill area.

### **Longitudinal Data:**

Oral Communication Skill	% of students achieving “3” or higher		
	2017, n=46	2016, n=45	2015, n=42
Organization	89%	98%	100%
Language	96%	100%	98%
Delivery	89%	96%	83%
Central message	96%	100%	95%
Explanation of issues	100%	Not assessed	Not assessed

### **Conclusions Drawn from Data:**

Students are performing well in all aspects of oral communication.

**Changes to be Made Based on Data:** No changes are necessary.

**Rubric used:** ACC&U Oral Communication & Critical Thinking Rubrics (see attached).

**Core Competency: Information Literacy**

**Outcome Measure:** Senior Seminar (BIO 497) Signature Assignments: Bioethical Issue Presentation and Science/Faith Position Paper

**Criteria for Success:** 80% of students will score at a level of 3 or higher in each skill area.

**Longitudinal Data:**

<b>Oral Communication Skill</b>	<b>% of students achieving “3” or higher</b>
	<b>2017, n=46</b>
Evidence (Oral assignment, critical thinking rubric)	83%
Evaluate Information (Oral assignment, information literacy rubric)	98%
Use information effectively (Essay assignment, information literacy rubric)	87%

**Conclusions Drawn from Data:** The Biology Department majors are performing well for information literacy.

**Changes to be Made Based on Data:** No changes to program.

**Rubric used:** See attached portions of AAC&U rubrics.

## Bioethical Issue Oral Presentation Rubric (Selected portions of ACC&U rubrics)

Oral Communication	Capstone 4	Milestones		Benchmark 1
		3	2	
<b>Organization</b>	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.
<b>Language</b>	Language choices are imaginative, memorable, and compelling, and enhance the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are thoughtful and generally support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation. Language in presentation is appropriate to audience.	Language choices are unclear and minimally support the effectiveness of the presentation. Language in presentation is not appropriate to audience.
<b>Delivery</b>	<p>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.</p> <p>Speaker expands on the content of the slides – unscripted / spontaneous.</p> <p>Presentation was 6-8 min.</p>	<p>Delivery techniques (posture, gesture, eye contact, &amp; vocal expressiveness) make the presentation interesting, and speaker appears comfortable.</p> <p>Speaker barely expands on the content of the slides.</p> <p>Presentation was 5-6 min. or 8-9 min.</p>	<p>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.</p> <p>Speaker reads directly from note cards. Presentation was under 5 min. or over 9 minutes.</p>	<p>Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.</p> <p>Presentation too long or too short to be effective. Speaker reads directly from slides.</p>
<b>Central Message</b>	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.)	Central message is clear and consistent with the supporting material.	Central message is basically understandable but is not often repeated and is not memorable.	Central message can be deduced, but is not explicitly stated in the presentation.

Continued...

<b>Critical Thinking</b>	<b>Milestones</b>			<b>Benchmark</b>
	<b>Capstone</b> 4	3	2	1
<b>Explanation of issues</b>	Issue/problem to be considered critically is stated clearly and described comprehensively, delivering all relevant information necessary for full understanding.	Issue/problem to be considered critically is stated, described, and clarified so that understanding is not seriously impeded by omissions.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
<b>Evidence</b> <i>Selecting and using information to investigate a point of view or conclusion</i>	Information is taken from source(s) with enough interpretation/evaluation to develop a comprehensive analysis or synthesis. Viewpoints of experts are questioned thoroughly.  Sources for the information are easy to find on the slides and referred to by the speaker.	Information is taken from source(s) with enough interpretation/evaluation to develop a coherent analysis or synthesis. Viewpoints of experts are subject to questioning.  Sources for the information are on the slides but never referred to by the speaker.	Information is taken from source(s) with some interpretation/evaluation, but not enough to develop a coherent analysis or synthesis. Viewpoints of experts are taken as mostly fact, with little questioning.  Sources for the information are not on the slides but are referred to by the speaker.	Information is taken from source(s) without any interpretation/evaluation. Viewpoints of experts are taken as fact, without question.  Sources for the information are not on the slides and are referred to by the speaker.

<b>Information Literacy</b>	<b>Milestones</b>			<b>Benchmark</b>
	<b>Capstone</b> 4	3	2	1
<b>Evaluate Information and its Sources Critically*</b>	Chooses a variety of information sources appropriate to the scope and discipline of the research question. Selects sources after considering the importance (to the researched topic) of the multiple criteria used (such as relevance to the research question, currency, authority, audience, and bias or point of view.)	Chooses a variety of information sources appropriate to the scope and discipline of the research question. Selects sources using multiple criteria (such as relevance to the research question, currency, and authority.)	Chooses a variety of information sources.  Selects sources using basic criteria (such as relevance to the research question and currency.)	Chooses a few information sources. Selects sources using limited criteria (such as relevance to the research question.)

<p><b>Information Literacy</b></p> <p><b>0 – 20 points</b></p>	<ul style="list-style-type: none"> <li>• Includes 5 or more appropriate sources. Includes sources from more than one type (websites, books, articles, etc.). Multiple journal and/or book sources.</li> <li>• Includes substantial references in the text that enhance the essay and support the author’s argument.</li> <li>• Paraphrasing is done well, and quotes are used correctly, but not overly frequently.</li> <li>• Annotated bibliography includes 1 – 2 sentences appropriately describing why each reference was chosen and how it was used.</li> </ul>	<p>Includes 3-4 appropriate sources. Includes some references in the text that are incorporated into the essay well. Some of the references may not be appropriate for the topic or may not be used appropriately.</p>	<p>Includes 1 – 2 appropriate sources. In-text references show little connection to the essay. Quotes are overly used or long. No indication as to how / why the references were used.</p>	<p>Includes no appropriate sources. No in-text references. Or most sources were inappropriate or used for incorrect purposes.</p>
--	---	--	--	---