

Departmental Outcomes Assessment Report



For: Science

I've attached your outcomes assessment report, which contains both Fall and Winter terms. For Winter term, seventeen of the 75-90 (I didn't count them all) of the sub-outcomes were assessed across six different sections. All five of the department's outcomes were assessed Winter term. The number of assessments is impressive – Thank you! Where there were 261 second-year (over 44 credits) students assessed in fall term, there were 265 winter term. The total assessments for both terms is 693. While each outcome is totaled within each term, there is no total across the terms for each outcome and sub-outcome. I will work on this.

The overall assessment shows that 526 assessments for students over 44 credits (2nd year students) were 67% successful, while the 167 under 45 were 66% successful. When compared to the assessment averages, the average of the student over all GPAs shows little consistency, yet a small variance. The numbers demonstrate that there is room for improvement of student learning, but there is some formative assessment that should be factored in. A deeper analysis will need to take place by the department to inform and guide improvement. With that analysis, you can work to improve either the assessment process or the instruction/curriculum.

When looking at each sub-outcome, there still may not be enough of a sample size in a single term to have much confidence in the results. As I said, I'll work to report course outcomes across multiple terms. With the consistency of the success data, you may want to consider selecting a "focus outcome" and develop strategies to improve on that outcome for 2015-16 then after next year, see if the data show improvement. This determination can wait for the spring term results come in, but now is a good time to contemplate how the data can be used.

The second report, "Science Results," - please take a look. Like fall term, the average Science GPA and the Average Assessment Score show no gradual increase with more science courses taken. There are 295 assessments, on 67 students. This, combined with fall term should provide telling results, but it is for the science department faculty to determine solutions to this.

Year and Term: Fall, 2014

SC.1 - Student will think like a scientist.

SC.1.A - Student demonstrates the ability to apply the scientific method to evaluate a problem.

G101.6 - Student will demonstrate proper lab and field protocols

Course Assessed: **G101-01**

Over 44 credits scoring 02 or higher: 2

Students over 44 credits assessed for G101.6: 5	Over 44 credits pass rate: 47%	Avg GPA: 2.76
Students under 45 credits assessed: 2	Under 45 credits pass rate: 50%	Avg GPA: 2.64

Students over 44 credits-earned average: 78

Students over 44 credits assessed for SC.1.A: 5	Over 44 credits pass rate: 47%	Avg GPA: 2.76
Students under 45 credits assessed: 2	Under 45 credits pass rate: 50%	Avg GPA: 2.64

SC.1.C - Student demonstrates the ability to describe the history of science.

SC.1.C - Student demonstrates the ability to describe the history of science.

Course Assessed: **BI101-01/02**

Students over 44 credits-earned average: 80

Students over 44 credits assessed for SC.1.C: 21 Over 44 credits pass rate: 41% Avg GPA: 3.01
Students under 45 credits assessed: 8 Under 45 credits pass rate: 50% Avg GPA: 2.37

SC.1.D - Student demonstrate the ability to design and conduct scientific experiments.

Course Assessed: **BI211-01**

G105.5 - Utilize scientific principles to solve problems

Course Assessed: **G105-06**

Over 44 credits scoring 02 or higher: 1

Students over 44 credits assessed for G105.5: 1 Over 44 credits pass rate: 67% Avg GPA: 2.45
Students under 45 credits assessed: 1 Under 45 credits pass rate: 67% Avg GPA: 1.78

Students over 44 credits-earned average: 73

Students over 44 credits assessed for SC.1.D: 12 Over 44 credits pass rate: 97% Avg GPA: 3.19
Students under 45 credits assessed: 5 Under 45 credits pass rate: 93% Avg GPA: 2.61

Students over 44 credits assessed for outcome SC.1: 38	Over 44 credits pass rate: 60%
Students under 45 credits assessed for outcome SC.1: 15	Under 45 credits pass rate: 64%

SC.2 - Student will work like a scientist.

SC.2.A - Student demonstrates the ability to evaluate relevant data and observations.

G101.3 - Student will classify rocks and minerals

Course Assessed: **G101-01**

Over 44 credits scoring 02 or higher: 5

Students over 44 credits assessed for G101.3: 7 Over 44 credits pass rate: 57% Avg GPA: 2.74
Students under 45 credits assessed: 6 Under 45 credits pass rate: 44% Avg GPA: 2.69

G105.2 - Identify common geologic features in the landscape

Course Assessed: **G105-06**

Over 44 credits scoring 02 or higher: 3

Students over 44 credits assessed for G105.2: 3 Over 44 credits pass rate: 67% Avg GPA: 3.08

Students over 44 credits-earned average: 88

Students over 44 credits assessed for SC.2.A: 10 Over 44 credits pass rate: 60% Avg GPA: 2.84
Students under 45 credits assessed: 6 Under 45 credits pass rate: 44% Avg GPA: 2.69

SC.2.B - Student demonstrates the ability to evaluate relevant data and observations.

SC.2.B - Student demonstrates the ability to evaluate relevant data and observations.

Course Assessed: **BI211-01**

Students over 44 credits-earned average: 73

Students over 44 credits assessed for SC.2.B: 11 Over 44 credits pass rate: 97% Avg GPA: 3.25
Students under 45 credits assessed: 5 Under 45 credits pass rate: 100% Avg GPA: 2.65

SC.2.C - Student demonstrates the ability to understand the use of models to simplify complex concepts.

Course Assessed: **BI234-01**

Course Assessed: **BI234-35**

G105.1 - Classify common rocks based on physical characteristics, mineral content and formative processes

Course Assessed: **G105-06**

Over 44 credits scoring 02 or higher: 7

Students over 44 credits assessed for G105.1: 16 Over 44 credits pass rate: 50% Avg GPA: 3.07
Students under 45 credits assessed: 5 Under 45 credits pass rate: 40% Avg GPA: 3.06

Students over 44 credits-earned average: 91

Students over 44 credits assessed for SC.2.C: 35 Over 44 credits pass rate: 60% Avg GPA: 3.12
Students under 45 credits assessed: 8 Under 45 credits pass rate: 50% Avg GPA: 3.26

Students over 44 credits assessed for outcome SC.2: 56	Over 44 credits pass rate: 67%
Students under 45 credits assessed for outcome SC.2: 19	Under 45 credits pass rate: 61%

SC.3 - Student will communicate like a scientist.

SC.3.A - Student demonstrates the ability to create graphs and data tables.

Course Assessed: **G105-06**

Students over 44 credits-earned average: 92

Students over 44 credits assessed for SC.3.A: 14 Over 44 credits pass rate: 40% Avg GPA: 3.02
Students under 45 credits assessed: 3 Under 45 credits pass rate: 33% Avg GPA: 2.84

SC.3.B - Student demonstrates the ability to use the SI system of measurement.

Course Assessed: **BI234-01**

Course Assessed: **BI234-35**

SC.3.B - Student demonstrates the ability to use the SI system of measurement.

Students over 44 credits-earned average: 86

Students over 44 credits assessed for SC.3.B: 34 Over 44 credits pass rate: 81% Avg GPA: 3.30
Students under 45 credits assessed: 4 Under 45 credits pass rate: 100% Avg GPA: 3.18

SC.3.C - Student demonstrates the ability to communicate scientific information in standard format.

Course Assessed: **BI211-01**

G101.2 - Student will demonstrate knowledge of fundamental concepts in geology

Course Assessed: **G101-01**

Over 44 credits scoring 02 or higher: 6

Students over 44 credits assessed for G101.2: 8 Over 44 credits pass rate: 63% Avg GPA: 2.82
Students under 45 credits assessed: 4 Under 45 credits pass rate: 67% Avg GPA: 3.04

Students under 45 credits assessed: 4 Under 45 credits pass rate: 67% Avg GPA: 3.04

Students over 44 credits-earned average: 76

Students over 44 credits assessed for SC.3.C: 19 Over 44 credits pass rate: 82% Avg GPA: 3.07
Students under 45 credits assessed: 9 Under 45 credits pass rate: 81% Avg GPA: 2.82

SC.3.D - Student demonstrates the ability to articulate concepts in science.

Course Assessed: **BI101-01/02**

Course Assessed: **BI211-01**

Course Assessed: **BI234-01**

Course Assessed: **BI234-35**

G101.2 - Student will demonstrate knowledge of fundamental concepts in geology

Course Assessed: **G101-01**

Over 44 credits scoring 02 or higher: 6

Students over 44 credits assessed for G101.2: 8 Over 44 credits pass rate: 63% Avg GPA: 2.82
Students under 45 credits assessed: 4 Under 45 credits pass rate: 67% Avg GPA: 3.04

Students under 45 credits assessed: 4 Under 45 credits pass rate: 67% Avg GPA: 3.04

Students over 44 credits-earned average: 78

Students over 44 credits assessed for SC.3.D: 52 Over 44 credits pass rate: 67% Avg GPA: 3.07
Students under 45 credits assessed: 15 Under 45 credits pass rate: 69% Avg GPA: 2.65

Students over 44 credits assessed for outcome SC.3:	119	Over 44 credits pass rate:	71%
Students under 45 credits assessed for outcome SC.3:	31	Under 45 credits pass rate:	73%

SC.4 - Student will evaluate like a scientist.

SC.4.A - Student demonstrates the ability to evaluate scientific validity.

Course Assessed: **BI211-01**

G105.4 - Utilize different resources to find geologic information

Course Assessed: **G105-06**

Over 44 credits scoring 02 or higher: 11

Students over 44 credits assessed for G105.4: 13 Over 44 credits pass rate: 64% Avg GPA: 3.12
Students under 45 credits assessed: 3 Under 45 credits pass rate: 78% Avg GPA: 2.84

Students over 44 credits-earned average: 91

Students over 44 credits assessed for SC.4.A: 14 Over 44 credits pass rate: 64% Avg GPA: 3.12
Students under 45 credits assessed: 4 Under 45 credits pass rate: 83% Avg GPA: 2.62

SC.4.C - Student demonstrates the ability to understand the role of science in shaping public policy.

G101.7 - Student will relate geologic principles to human society

Course Assessed: **G101-01**

Over 44 credits scoring 02 or higher: 4

Students over 44 credits assessed for G101.7: 5 Over 44 credits pass rate: 67% Avg GPA: 2.76
Students under 45 credits assessed: 2 Under 45 credits pass rate: 67% Avg GPA: 3.44

G105.6 - Evaluate how geologic processes can affect society

Course Assessed: **G105-06**

Over 44 credits scoring 02 or higher: 19

Students over 44 credits assessed for G105.6: 29 Over 44 credits pass rate: 56% Avg GPA: 3.00
Students under 45 credits assessed: 5 Under 45 credits pass rate: 47% Avg GPA: 2.81

Students over 44 credits-earned average: 87

Students over 44 credits assessed for SC.4.C: 34 Over 44 credits pass rate: 58% Avg GPA: 2.97
Students under 45 credits assessed: 8 Under 45 credits pass rate: 58% Avg GPA: 2.87

Students over 44 credits assessed for outcome SC.4:	48	Over 44 credits pass rate:	60%
Students under 45 credits assessed for outcome SC.4:	12	Under 45 credits pass rate:	67%

Year and Term: Winter, 2015

SC.1 - Student will think like a scientist.

SC.1.A - Student demonstrates the ability to apply the scientific method to evaluate a problem.

G102.1 - Student will give examples of how the Scientific Process is used to develop Theory

Course Assessed: **G102-01**

SC.1.A - Student demonstrates the ability to apply the scientific method to evaluate a problem.

Over 44 credits scoring 02 or higher: 5
Students over 44 credits assessed for G102.1: 5 Over 44 credits pass rate: 67% Avg GPA: 2.96
Students under 45 credits assessed: 5 Under 45 credits pass rate: 67% Avg GPA: 3.45

Students over 44 credits-earned average: 90

Students over 44 credits assessed for SC.1.A: 5 Over 44 credits pass rate: 67% Avg GPA: 2.96
Students under 45 credits assessed: 5 Under 45 credits pass rate: 67% Avg GPA: 3.45

SC.1.D - Student demonstrate the ability to design and conduct scientific experiments.

Course Assessed: **BI102-01/02**

Course Assessed: **BI212-01**

Students over 44 credits-earned average: 89

Students over 44 credits assessed for SC.1.D: 31 Over 44 credits pass rate: 77% Avg GPA: 3.12
Students under 45 credits assessed: 7 Under 45 credits pass rate: 71% Avg GPA: 2.92

Students over 44 credits assessed for outcome SC.1:	36	Over 44 credits pass rate:	76%
Students under 45 credits assessed for outcome SC.1:	12	Under 45 credits pass rate:	69%

SC.2 - Student will work like a scientist

SC.2.A - Student demonstrates the ability to collect and record data and observations.

Course Assessed: **BI102-01/02**

G102.4 - Student will make scientific measurements

Course Assessed: **G102-01**

Over 44 credits scoring 02 or higher: 8
Students over 44 credits assessed for G102.4: 9 Over 44 credits pass rate: 67% Avg GPA: 3.02
Students under 45 credits assessed: 9 Under 45 credits pass rate: 44% Avg GPA: 3.49

PHY202-212.1 - Student can compute solutions to correct sig figs

Course Assessed: **PHY202/PHY212**

Over 44 credits scoring 02 or higher: 6
Students over 44 credits assessed for PHY202-212.1: 6 Over 44 credits pass rate: 94% Avg GPA: 3.47
Students under 45 credits assessed: 1 Under 45 credits pass rate: 100% Avg GPA: 3.64

Students over 44 credits-earned average: 90

Students over 44 credits assessed for SC.2.A: 36 Over 44 credits pass rate: 71% Avg GPA: 3.16
Students under 45 credits assessed: 15 Under 45 credits pass rate: 56% Avg GPA: 3.18

SC.2.C - Student demonstrates the ability to understand the use of models to simplify complex concepts.

Course Assessed: **BI234-35**

Students over 44 credits-earned average: 74

Students over 44 credits assessed for SC.2.C: 20 Over 44 credits pass rate: 67% Avg GPA: 3.22
Students under 45 credits assessed: 10 Under 45 credits pass rate: 67% Avg GPA: 3.12

Students over 44 credits assessed for outcome SC.2: 56	Over 44 credits pass rate: 70%
Students under 45 credits assessed for outcome SC.2: 25	Under 45 credits pass rate: 60%

SC.3 - Student will communicate like a scientist.

SC.3.B - Student demonstrates the ability to use the SI system of measurement.

Course Assessed: **BI234-35**

Students over 44 credits-earned average: 74

Students over 44 credits assessed for SC.3.B: 10 Over 44 credits pass rate: 57% Avg GPA: 3.22
Students under 45 credits assessed: 5 Under 45 credits pass rate: 87% Avg GPA: 3.12

SC.3.C - Student demonstrates the ability to communicate scientific information in standard format.

Course Assessed: **BI102-01/02**

Students over 44 credits-earned average: 91

Students over 44 credits assessed for SC.3.C: 20 Over 44 credits pass rate: 70% Avg GPA: 3.15
Students under 45 credits assessed: 5 Under 45 credits pass rate: 67% Avg GPA: 2.53

SC.3.D - Student demonstrates the ability to articulate concepts in science.

Course Assessed: **BI102-01/02**

Course Assessed: **BI234-35**

G102.2 - Student will demonstrate knowledge of fundamental concepts in geology

Course Assessed: **G102-01**

Over 44 credits scoring 02 or higher: 7
Students over 44 credits assessed for G102.2: 10 Over 44 credits pass rate: 60% Avg GPA: 2.93
Students under 45 credits assessed: 8 Under 45 credits pass rate: 50% Avg GPA: 3.39

PHY101.ADV.03 - Student can relate an objects velocity and acceleration to is change in position

Course Assessed: **PHY101**

Over 44 credits scoring 02 or higher: 1
Students over 44 credits assessed for PHY101.ADV.03: 1 Over 44 credits pass rate: 100% Avg GPA: 3.75

SC.3.D - Student demonstrates the ability to articulate concepts in science.

Students over 44 credits-earned average: 86

Students over 44 credits assessed for SC.3.D: 77 Over 44 credits pass rate: 61% Avg GPA: 3.09
Students under 45 credits assessed: 25 Under 45 credits pass rate: 57% Avg GPA: 3.13

Students over 44 credits assessed for outcome SC.3:	107	Over 44 credits pass rate:	62%
Students under 45 credits assessed for outcome SC.3:	35	Under 45 credits pass rate:	63%

SC.4 - Student will evaluate like a scientist.

SC.4.A - Student demonstrates the ability to evaluate scientific validity.

PHY202-212.3 - Student can evaluate uncertainty

Course Assessed: **PHY202/PHY212**

Over 44 credits scoring 02 or higher: 5

Students over 44 credits assessed for PHY202-212.3: 7 Over 44 credits pass rate: 57% Avg GPA: 3.46
Students under 45 credits assessed: 1 Under 45 credits pass rate: 67% Avg GPA: 3.64

Students over 44 credits-earned average: 83

Students over 44 credits assessed for SC.4.A: 7 Over 44 credits pass rate: 57% Avg GPA: 3.46
Students under 45 credits assessed: 1 Under 45 credits pass rate: 67% Avg GPA: 3.64

SC.4.B - Student demonstrates the ability to recognize sources of bias.

Course Assessed: **G102-01**

Students over 44 credits-earned average: 97

Students over 44 credits assessed for SC.4.B: 8 Over 44 credits pass rate: 75% Avg GPA: 2.87
Students under 45 credits assessed: 5 Under 45 credits pass rate: 80% Avg GPA: 3.45

SC.4.C - Student demonstrates the ability to understand the role of science in shaping public policy.

G102.7 - Student will address how geologic problems may affect human society

Course Assessed: **G102-01**

Over 44 credits scoring 02 or higher: 10

Students over 44 credits assessed for G102.7: 11 Over 44 credits pass rate: 79% Avg GPA: 3.00
Students under 45 credits assessed: 6 Under 45 credits pass rate: 61% Avg GPA: 3.45

Students over 44 credits-earned average: 91

Students over 44 credits assessed for SC.4.C: 11 Over 44 credits pass rate: 79% Avg GPA: 3.00
Students under 45 credits assessed: 6 Under 45 credits pass rate: 61% Avg GPA: 3.45

Students over 44 credits assessed for outcome SC.4:	26	Over 44 credits pass rate:	72%
Students under 45 credits assessed for outcome SC.4:	12	Under 45 credits pass rate:	69%

SC.5 - Student can identify and solve a problem.

SC.5.A - SC 5.A Student can use data and/or theory to propose solutions.

PHY202-212.8 - Student can apply concepts in physics to everyday phenomena

Course Assessed: PHY202/PHY212

Over 44 credits scoring 02 or higher: 11

Students over 44 credits assessed for PHY202-212.8:	15	Over 44 credits pass rate:	69%	Avg GPA:	3.40
Students under 45 credits assessed:	3	Under 45 credits pass rate:	56%	Avg GPA:	3.64

Students over 44 credits-earned average: 86

Students over 44 credits assessed for SC.5.A:	15	Over 44 credits pass rate:	69%	Avg GPA:	3.40
Students under 45 credits assessed:	3	Under 45 credits pass rate:	56%	Avg GPA:	3.64

SC.5.B - Student solves scientific problems using mathematical relationships.

PHY202-212.5 - Student can develop mathematical relations to explain data

Course Assessed: PHY202/PHY212

Over 44 credits scoring 02 or higher: 10

Students over 44 credits assessed for PHY202-212.5:	14	Over 44 credits pass rate:	67%	Avg GPA:	3.43
Students under 45 credits assessed:	2	Under 45 credits pass rate:	83%	Avg GPA:	3.64

PHY202-212.9 - Student can solve physics problems using mathematical relationships

Course Assessed: PHY202/PHY212

Over 44 credits scoring 02 or higher: 9

Students over 44 credits assessed for PHY202-212.9:	11	Over 44 credits pass rate:	76%	Avg GPA:	3.40
Students under 45 credits assessed:	1	Under 45 credits pass rate:	100%	Avg GPA:	3.64

Students over 44 credits-earned average: 84

Students over 44 credits assessed for SC.5.B:	25	Over 44 credits pass rate:	71%	Avg GPA:	3.42
Students under 45 credits assessed:	3	Under 45 credits pass rate:	89%	Avg GPA:	3.64

Students over 44 credits assessed for outcome SC.5:	40	Over 44 credits pass rate:	70%
Students under 45 credits assessed for outcome SC.5:	6	Under 45 credits pass rate:	72%

Total students over 44 credits assessed:	526	Over 44 credits overall pass rate:	67%
Total students under 45 credits assessed:	167	Under 45 credits overall pass rate:	66%