

## SLO Performance - General Biology

Program: Biology

Date: 09/12/2018

Course Group: Associate in Science in Biology for  
Transfer Degree

Terms: Spring 2018, Fall 2017

**CHEMB1B: General Chemistry and Chemical Analysis**

**1. Upon completion the student will be able to: relate the fundamental importance of chemistry and chemical safety to other disciplines, their future career, current events, and to their everyday life.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**2. Upon completion the student will be able to: relate the observable properties of matter to the fundamental building blocks of matter, how these form larger structures, how they interact, and the role that energy plays in guiding matter's behavior. This includes the application of these chemical concepts to problem solving, and relating properties to atomic and molecular structure, moles and all levels of bonding.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	1	1.25%	33	41.25%	32	40.00%	14	17.50%	80	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	1	1.25%	33	41.25%	32	40.00%	14	17.50%	80	100.00%

**3. Upon completion the student will be able to: make and report accurate observations using the appropriate systems of measurement. They should be able to make reasonably accurate/ precise measurements and be able to use unit conversions and formulas in subsequent mathematical calculations.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	11	13.75%	37	46.25%	19	23.75%	13	16.25%	80	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	11	13.75%	37	46.25%	19	23.75%	13	16.25%	80	100.00%

**4. Upon completion the student will be able to: develop and apply logical thinking processes in learning and problem solving related to chemistry. They should demonstrate the ability to analyze chemical problems, formulate, calculate, and report mathematical manipulations related to those problems. This includes designing and organizing logical problem solving methodologies that link observations with fundamental chemical concepts and conclusions.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**5. Upon completion the student will be able to: identify/characterize several standard chemical systems and behaviors. Example systems are general thermodynamics, kinetics, general equilibria, acid-base equilibrium, pH control via buffers, solubility equilibria, electrochemical processes, and radioactivity.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**6. Upon completion the student will be able to: perform standard, fundamental calculations which quantify/characterize the behaviors of such systems mentioned above. Examples include the mathematical interpretation of kinetics measurements and Le Chatelier's principle regarding stressed equilibria, expected cell EMF's under various conditions, the mathematical calculations showing how certain ions are separable through pH manipulation, and determining the feasibility of a reaction based on thermodynamic principles.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**7. Upon completion the student will be able to: describe the chemistry of various main-group elements and the transition metals, and show an introductory level of understanding of organic chemistry. Recognize the various uses of different elements in materials, manufacturing and other scientific areas (e.g. organic chemistry, biological sciences) related to their careers and community .**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**8. Upon completion the student will be able to: have developed the following skills and abilities primarily from laboratory activities: a. have developed problem solving skills and will be able to restate the problem in his/her own words, will develop problem solving approaches, will be able to evaluate the data used to solve the problem, and will be able to evaluate the solution generated. b. have the ability to manipulate and interpret data and to organize data collected from laboratory into meaningful tables/charts, produce a graph of data and predict an outcome, and to be able to identify data points that are outliers. c. have developed manipulative skills and will demonstrate through proper use of common laboratory equipment such as balances, centrifuges, ovens, burets, pipets, and glassware. Will demonstrate proper use of laboratory instruments such as pH meters, spectrophotometers, computers where required, and other such items. Will demonstrate proper transfer and separation techniques. d. apply scientific reasoning skills, construct a testable hypothesis, use data to make a logical deduction, construct a scientific argument, and derive a generalization from a specific data set. e. understand important course concepts, explain the meaning of pertinent concepts, apply concepts to novel situations and relate and apply concept to life situations.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	12	7.50%	70	43.75%	51	31.87%	27	16.88%	160	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	12	7.50%	70	43.75%	51	31.87%	27	16.88%	160	100.00%

**MATHB6A: Analytic Geometry/Calculus I**

Upon completion student will be able to: Translate application problems, such as related rates, optimization, and velocity-displacement. Solve and interpret solutions using calculus.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Apply appropriate algorithms to evaluate limits, derivatives, and integrals to formulate solutions.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Demonstrate the concepts of calculus by communicating in written, verbal and graphical form.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	13	12.62%	28	27.18%	33	32.04%	29	28.16%	103	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	13	12.62%	28	27.18%	33	32.04%	29	28.16%	103	100.00%

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	13	12.62%	28	27.18%	33	32.04%	29	28.16%	103	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	13	12.62%	28	27.18%	33	32.04%	29	28.16%	103	100.00%

**MATHB6B: Analytic Geometry/Calculus II**

Upon completion the student will be able to: 1. Calculate derivatives of exponential and logarithmic functions, inverse trigonometric functions, hyperbolic functions, and inverse hyperbolic functions. Identify when to use logarithmic differentiation. Solve problems involving exponential and logarithm functions.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**2. Integrate exponential and logarithmic functions, and hyperbolic functions. Identify integrands that are derivatives of inverse trigonometric functions or inverse hyperbolic functions. Determine when to use u-substitution or complete the square.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	5.13%	25	64.10%	6	15.38%	6	15.38%	39	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	5.13%	25	64.10%	6	15.38%	6	15.38%	39	100.00%

**3. Determine an appropriate method of integration and apply that method. Choose partial fractions (may first require long division), integration by parts, trigonometric substitution (use a triangle or an identity) or a combination of methods. Use numerical methods such as the trapezoidal rule or Simpson's Rule to evaluate a definite integral.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	3	3.70%	2	2.47%	40	49.38%	36	44.44%	81	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	3	3.70%	2	2.47%	40	49.38%	36	44.44%	81	100.00%

**4. Evaluate improper integrals, as well as use L'Hopital's Rule to evaluate limits of indeterminate form and ranking of functions according to their growth rates.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**5. Know properties of sequences. Recognize monotonic sequences and know when they converge. Test whether a sequence converges or diverges by using a limit or the Sandwich Theorem.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**6. Be familiar with geometric series, telescoping series, and p-series. Test whether a series converges (absolutely or conditionally) or diverges. Be able to apply the nth-term test for divergence, the integral test, the direct comparison test, the limit comparison test, the ratio test, and the nth-root test. Determine radius and interval of convergence.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**7. Additional applications such as work, volumes, arc length, area of a surface of revolution, moments and centers of mass, separable differential equations, growth and decay.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%



**8. Build the Taylor series, Taylor polynomial of order n, or Maclaurin series of a function. Know the form of the binomial series. Estimate the error in truncating a series. Differentiate and integrate power series.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**9. Translate rectangular coordinates to polar coordinates and polar to rectangular. Graph, calculate slope, area, or shared area of polar curves.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	5	4.17%	27	22.50%	46	38.33%	42	35.00%	120	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	5	4.17%	27	22.50%	46	38.33%	42	35.00%	120	100.00%

**PHYSB2A: General Physics-Mechanics and Heat**

**Upon completion of the course, the student will be able to:**

**Understand and apply the properties of matter, basic principles and laws of mechanics and heat, including Newton's laws of motion and conservation of energy.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	5	20.00%	11	44.00%	9	36.00%	25	100.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>5</b>	<b>20.00%</b>	<b>11</b>	<b>44.00%</b>	<b>9</b>	<b>36.00%</b>	<b>25</b>	<b>100.00%</b>

**2. Upon successful completion of this course, the student will be able to compute practical physics quantities in physics problems, using the theories and laws of mechanics, heat and wave motions.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Upon completion the student will be able to: Use basic algebra and trigonometry in various computations in physics problems.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**4. Upon successful completion of this course, the student will be able to recognize significant information in physics problems, analyze the information, and apply appropriate solutions to the physics problems.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	5	8.93%	9	16.07%	27	48.21%	15	26.79%	56	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	5	8.93%	9	16.07%	27	48.21%	15	26.79%	56	100.00%

**5. Upon successful completion of this course, the student will be able to perform unit conversions required in various calculations with physical quantities.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	5	8.93%	9	16.07%	27	48.21%	15	26.79%	56	100.00%
Fall 2017	0	0.00%	5	20.00%	11	44.00%	9	36.00%	25	100.00%
Totals	5	6.17%	14	17.28%	38	46.91%	24	29.63%	81	100.00%

**PHYSB2B: General Physics - Sound, Light, Electricity, Magnetism, Modern Physics**

Upon completion the student will be able to: demonstrate the ability to employ the principles and conservation laws encountered in this physics course to solve conceptual problems in electricity, magnetism, and modern physics. The student will demonstrate the ability to build on the principles and conservation laws encountered in the previous physics course in the sequence (Newtonian mechanics) to solve conceptual problems.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: continue to perfect the critical reading skills that are necessary in assimilating the type of technical material encountered in a physics course in electricity, magnetism, and modern physics. These reading skills are crucial in learning to apply physics principles to conceptual and quantitative problem solving and also to understand problem-solving methodology as is guided by sample problems within the textbook.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: develop an effective methodological approach to quantitative problem solving in electricity, magnetism, and modern physics. The student will show evidence of seeking and using "conceptual keys" (principles and conservation laws) to build on in quantitative problem solving. The student will become skilled in the organization and documentation of work done in quantitative problem-solving exercises.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to:perform a multifunction regression analysis on paired data and (1) fit the data with a regression equation, and (2) use the regression equation as a tool in making estimations. The student will be able to use the coefficient of determination from a regression analysis to evaluate the goodness-of-fit of the regression equation.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to:become proficient in the type of problem solving typical in an introductory physics course in electricity, magnetism, and modern physics. In this sense, “problem solving” is meant to include (1) the critical reading of the problem, (2) the recognition of principles involved in the problem, (3) the identification of the information given and the quantity requested, (4) the feasibility of a solution, (5) the identification a group of relevant formulae essential to obtain a solution, and (6) the successful employment of mathematical operations used to obtain the solution.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to:effectively employ the math skills of algebra and trigonometry, and the interpretive tools of some useful statistical methods as would be used in analyzing experimental data. This would include finding various “measures of central tendency” and other relevant parameters associated with data. The student will be able to correctly use/interpret such experimental quantities as uncertainties, units, measurement precision, and measurement accuracy.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: continue to perfect the laboratory skills of (1) being able to use laboratory apparatus properly, (2) following safe laboratory practices, (3) following written and verbal directions, (4) making measurements with appropriate precision, and (5) evaluating the accuracy of measurements. The student will also be able to configure laboratory apparatus given a schematic diagram to work with.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

#### Totals for CSLOs

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

#### PHYSB4A: Mechanics and Wave Motion

1. Upon successful completion of this course, the student will be able to perform unit conversions required in various computations of physical quantities.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**2. Upon successful completion of this course, the student will be able to apply significant information of physics problems, analyze the information, and apply appropriate solutions to the problems.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Upon completion the student will be able to: Use basic calculus, algebra and trigonometry in computation for physics problems.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**4. Upon successful completion of this course, the student will be able to understand the concepts of the fundamental theories, principles and laws of physics.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Upon completion the student will be able to: Set up physics apparatus or equipment, conduct the experiments, collect the data, and analyze the the results according to the instructions in the lab manual.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**6. Upon successful completion of this course, the student will be able to apply fundamental physics theories and laws to explain various physical phenomena.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Upon completion the student will be able to: Handle laboratory materials, tools and equipment in a safe manner in the lab.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**PHYSB4B: Heat, Electricity, Magnetism**



Upon completion the student will be able to: demonstrate the ability to employ the principles and conservation laws encountered in this physics course to solve conceptual problems in thermodynamics, electricity, and magnetism. The student will demonstrate the ability to build on the principles and conservation laws encountered in the previous physic course in the sequence (Newtonian mechnaics) to solve conceptual.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: continue to perfect the critical reading skills that are necessary in assimilating the type of technical material encountered in a physics course in thermodynamics, electricity, and magnetism. These reading skills are crucial in learning to apply physics principles to conceptual and quantitative problem solving and also to understand problem-solving methodology as is guided by sample problems within the textbook.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: continue to develop an effective methodological approach to quantitative problem solving in physics. The student will show evidence of seeking and using "conceptual keys" (principles and conservation laws) to build on in quantitative problem solving. The student will become skilled in the organization and documentation of work done in quantitative problem-solving exercises.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: be able to perform a multifunction regression analysis on paired data and (1) fit the data with a regression equation, (2) use the regression equation as a tool in making estimations, and (3) employing integral and differential calculus techniques in obtaining quantities related to regression equations. The student will be able to use the coefficient of determination from a regression analysis to evaluate the goodness-of-fit of the regression equation.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: become proficient in the type of problem solving typical in an introductory physics course in thermodynamics, electricity, and magnetism. In this sense, “problem solving” is meant to include (1) the critical reading of the problem, (2) the recognition of principles involved in the problem, (3) the identification of the information given and the quantity requested, (4) the feasibility of a solution, (5) the identification a group of relevant formulae essential to obtain a solution, and (6) the successful employment of mathematical operations used to obtain the solution.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: effectively employ the math skills and interpretive tools of some useful statistical methods as would be used in analyzing experimental data. This would include finding various “measures of central tendency” and other relevant parameters associated with data, and to be able to work with both discrete and continuous distributions. The student will be able to correctly use/interpret such experimental quantities as uncertainties, units, measurement precision, and measurement accuracy.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: continue to perfect the laboratory skills of (1) being able to use laboratory apparatus properly, (2) following safe laboratory practices, (3) following written and verbal directions, (4) making measurements with appropriate precision, and (5) evaluating the accuracy of measurements. The student will also be able to configure laboratory apparatus given a schematic diagram to work with.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

#### Totals for CSLOs

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

#### BIOLB3A: General Biology I

Upon completion of the course, students will be able to: demonstrate knowledge about the essential elements of life, major hypothesis for life's history, and mechanisms for the diversification of life.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Students**

**will compare and contrast the development , life cycles, anatomical and physiological characteristics of major taxa of organisms.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Students will evaluate the relationships of organisms to each other and their environments.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	30	31.58%	12	12.63%	22	23.16%	31	32.63%	95	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>30</b>	<b>31.58%</b>	<b>12</b>	<b>12.63%</b>	<b>22</b>	<b>23.16%</b>	<b>31</b>	<b>32.63%</b>	<b>95</b>	<b>100.00%</b>

**Students will describe and identify key characteristics and classify representative specimens down to representative phyla.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Students will apply the processes of scientific inquiry and phylogenetic analysis to the diversity of organisms.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>	<b>0</b>	<b>0.00%</b>

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	30	31.58%	12	12.63%	22	23.16%	31	32.63%	95	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>30</b>	<b>31.58%</b>	<b>12</b>	<b>12.63%</b>	<b>22</b>	<b>23.16%</b>	<b>31</b>	<b>32.63%</b>	<b>95</b>	<b>100.00%</b>

### **BIOLB3B: General Biology II**

**Upon completion of this course, the student will be able to research a topic relevant to course material, design experiments, synthesize and evaluate their data and communicate their findings both orally and in a written format.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	41	83.67%	6	12.24%	0	0.00%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	<b>2</b>	<b>4.08%</b>	<b>41</b>	<b>83.67%</b>	<b>6</b>	<b>12.24%</b>	<b>0</b>	<b>0.00%</b>	<b>49</b>	<b>100.00%</b>

**Illustrate the mechanism of evolution by natural selection and consider how this process is the unifying theme in Biology.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	28	57.14%	16	32.65%	3	6.12%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	4.08%	28	57.14%	16	32.65%	3	6.12%	49	100.00%

**Identify, describe and compare the functions of prokaryotic and eukaryotic cells structures and biological macromolecules.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	32	65.31%	12	24.49%	3	6.12%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	4.08%	32	65.31%	12	24.49%	3	6.12%	49	100.00%

**Compare and contrast catabolic and anabolic metabolic pathways, cellular communication and cellular division of prokaryotic and eukaryotic cells. .**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	31	63.27%	15	30.61%	1	2.04%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	4.08%	31	63.27%	15	30.61%	1	2.04%	49	100.00%

**Illustrate and describe the structure and replication of DNA, transcription of DNA and translation of mRNA into proteins.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	24	48.98%	22	44.90%	1	2.04%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	4.08%	24	48.98%	22	44.90%	1	2.04%	49	100.00%

**Solve genetic problems by employing the fundamentals of Mendelian genetics.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	2	4.08%	41	83.67%	6	12.24%	0	0.00%	49	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	2	4.08%	41	83.67%	6	12.24%	0	0.00%	49	100.00%

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	12	4.08%	197	67.01%	77	26.19%	8	2.72%	294	100.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	12	4.08%	197	67.01%	77	26.19%	8	2.72%	294	100.00%

**CHEMB1A: General Chemistry I**

Upon completion the student will be able to: Practice safe and effective general laboratory skills, including the ability to: a. Recognize the limitations of physical measurements and application of appropriate rules for significant figures. b. Complete measurements in an accurate and precise manner. c. Effectively work with peers in a collegial environment.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: Demonstrate proficiency in solving mathematical problems that require identifying key data (from lists, tables, experimental data, or graphs) and constructing correct formulas for unit conversions, ratios, and stoichiometry.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

Upon completion the student will be able to: Use the atomic and kinetic theories of matter to explain macroscopic chemical and physical behavior.

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	45	58.44%	19	24.68%	13	16.88%	77	100.00%
Totals	0	0.00%	45	58.44%	19	24.68%	13	16.88%	77	100.00%



**Upon completion the student will be able to: Compare and contrast the details of ionic, covalent, and intermolecular bonding, and describe how energy changes are related to temperature, motion at the atomic level, and changes in chemical bonding.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Totals	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%

**Upon completion the student will be able to: Describe how energy changes are related to motion at the atomic level and the reorganization of matter found in chemical and physical changes.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	3	1.73%	56	32.37%	36	20.81%	78	45.09%	173	100.00%
Totals	3	1.73%	56	32.37%	36	20.81%	78	45.09%	173	100.00%

**Upon completion the student will be able to: Design experiments and interpret data according to the scientific method. This includes the ability to: a. Define and follow the general scientific method. b. Formulate questions in order to evaluate a hypothesis. c. Design and conduct experiments to answer questions. d. Record, manipulate and evaluate the experimental data to reach conclusions. e. Correlate experimental results with appropriate theory.**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	1	4.35%	12	52.17%	3	13.04%	7	30.43%	23	100.00%
Totals	1	4.35%	12	52.17%	3	13.04%	7	30.43%	23	100.00%

**Totals for CSLOs**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Fall 2017	4	1.47%	113	41.39%	58	21.25%	98	35.90%	273	100.00%
Totals	4	1.47%	113	41.39%	58	21.25%	98	35.90%	273	100.00%

**Report Totals:**

	N/A		Exceeds expectations		Meets expectations		Does not meet expectations		Total	
Spring 2018	77	9.30%	343	41.43%	256	30.92%	152	18.36%	828	100.00%
Fall 2017	4	1.34%	118	39.60%	69	23.15%	107	35.91%	298	100.00%
Totals	81	7.19%	461	40.94%	325	28.86%	259	23.00%	1126	100.00%