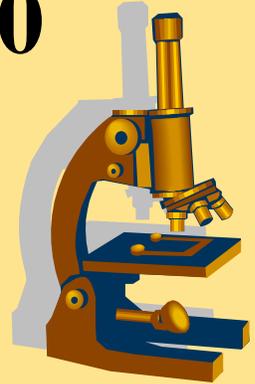


**BIOL 1010**  
**Department Wide**  
**Final Exam Assessment**  
**Spring Semester 2010**



**630 Students**

**21 Lecture Sections (ACS = 30)**

**1 Full-time Faculty Member**

**9 Adjunct Faculty Members**

**30 Lab Sections (ACS =21)**

**11 Part-time Laboratory Instructors**

Salt Lake  
Community  
College



Step Ahead.



## Assessment Results listed by Course Objective

<b>BIOL 1010 Departmental Final Exam Spring 2010</b>			
<b>Question</b>	<b>Objective</b>	<b>St Dev</b>	<b>Proficiency</b>
1	1-2. The characteristics that describe living organisms (life).	5%	89.1%
2	1-3. The hierarchy of biological organization.	10%	78.6%
3	1-7. The method and practice of scientific inquiry.	7%	78.2%
4	1-6. The value and use of science as a process of obtaining knowledge based upon observable evidence.	5%	88.0%
5	2-5. The structure and unique properties of water.	4%	90.6%
6	1-1. That evolution explains why organisms are characterized by diversity and unity.	10%	36.8%
7	2-2. The elements that make up living organisms.	6%	93.2%
8	2-4. That atoms react with one another to form molecules through chemical bonds and attractions.	10%	67.2%
9	2-6. The dissociation of water, the pH scale, and buffers and the harmful effects of acid deposition.	8%	82.3%
10	3-1. The chemical properties of carbon atoms.	13%	43.1%
11	2-4. That atoms react with one another to form molecules through chemical bonds and attractions.	4%	75.4%
12	3-4. The basic structure and function of the four types of biological macromolecules.	7%	90.1%
13	3-2. The diversity of organic molecules makes life diverse (e.g, functional groups, monomers)	8%	68.6%
14	3-3. The synthesis and breakdown of biological polymers.	11%	44.9%
15	3-4. The basic structure and function of the four types of biological macromolecules.	7%	80.7%
16	4-1. That cells are the basic units of life.	6%	91.6%
17	4-2. The different sizes and types of cells and how cells are studied.	12%	55.4%
18	4-3. The basic structures found in prokaryotic and eukaryotic cells.	11%	70.9%
19	5-6. The different types of transport across membranes.	5%	69.6%
20	8-4. That somatic cells have a cell cycle and undergo mitosis and cytokinesis. Mitosis maintains the chromosome number.	15%	62.5%
21	8-6. That meiosis produces cells that become the gametes in animals and spores in other organisms.	14%	60.8%
22	8-1. That cell division ensures the transmission of genetic information.	7%	64.3%
23	8-7. That meiosis halves the number of chromosomes because homologous chromosomes separate during meiosis. Synapsis and crossing-over also occur during meiosis.	11%	35.8%
24	8-8. That meiosis and the importance of genetic variation.	10%	66.8%
25	8-2. That cell division is involved in both asexual and sexual reproduction.	15%	66.4%
26	10-5. The making of a protein requires transcription and translation.	29%	52.4%
27	10-3. The Mechanism of DNA replication and repair.	7%	66.0%
28	10-1. That DNA is the genetic material.	18%	62.6%

29	5-4. The basic concepts of enzyme function.	12%	47.2%
30	5-3. The structure and cycle of adenosine triphosphate (ATP).	26%	35.2%
31	10-7. That gene mutations are changes in the sequence of DNA bases that affect genetic information and expression.	29%	24.5%
32	6-4. The light reaction absorbs solar energy and converts it into chemical energy.	7%	69.2%
33	6-3. That photosynthesis involves two sets of reactions: The light reactions and the Calvin cycle reactions.	18%	56.2%
34	6-6. That C4 and CAM plants also produce a carbohydrate but under different conditions.	9%	77.1%
35	7-4. The electron transport chain captures much energy.	26%	32.7%
36	7-3. That cellular respiration has four phases. Three phases occur in the mitochondria.	15%	54.7%
37	9-1. That Gregor Mendel deduced the Laws of Inheritance.	7%	82.4%
38	9-5. That monohybrid and dihybrid crosses are used to show Mendel's laws of inheritance.	12%	72.8%
39	9-7. The use of pedigree analysis in human genetics and genetic disorders.	4%	88.7%
40	9-3. That Mendel's law of segregation describes how gametes pass on traits.	16%	63.4%
41	13-2. That Charles Darwin formulated natural selection as a mechanism for evolution.	14%	74.4%
42	14-2. That reproductive barriers maintain genetic differences between species.	23%	81.2%
43	10-5. The making of a protein requires transcription and translation.	13%	30.9%
44	13-6. The process of natural selection and that it can be stabilizing, directional, or disruptive.	9%	40.7%
45	14-3. The basic concept of macroevolution and speciation and that the origin of new species usually requires geographic separation (e.g. allopatric speciation).	11%	58.7%
46	14-1. That species have been defined in more than one way.	8%	60.1%
47	14-2. That reproductive barriers maintain genetic differences between species.	19%	64.3%
48	13-4. That population genetics tells us when microevolution occurs.	7%	48.7%
49	14-4. The other mechanisms of speciation (e.g. sympatric speciation).	21%	36.7%
50	15-3. That organisms are classified into categories and that the Linnaean classification system reflects phylogeny.	7%	78.3%
		<b>TOTAL</b>	<b>64.7%</b>

## Assessment Results listed by Increasing Proficiency

<b>BIOL 1010 Departmental Final Exam Spring 2010</b>			
<b>Question</b>	<b>Objective</b>	<b>St Dev</b>	<b>Proficiency</b>
31	10-7. That gene mutations are changes in the sequence of DNA bases that affect genetic information and expression.	5%	24.5%
43	10-5. The making of a protein requires transcription and translation.	10%	30.9%
35	7-4. The electron transport chain captures much energy.	7%	32.7%
30	5-3. The structure and cycle of adenosine triphosphate (ATP).	5%	35.2%
23	8-7. That meiosis halves the number of chromosomes because homologous chromosomes separate during meiosis. Synapsis and crossing-over also occur during meiosis.	4%	35.8%
49	14-4. The other mechanisms of speciation (e.g. sympatric speciation).	10%	36.7%
6	1-1. That evolution explains why organisms are characterized by diversity and unity.	6%	36.8%
44	13-6. The process of natural selection and that it can be stabilizing, directional, or disruptive.	10%	40.7%
10	3-1. The chemical properties of carbon atoms.	8%	43.1%
14	3-3. The synthesis and breakdown of biological polymers.	13%	44.9%
29	5-4. The basic concepts of enzyme function.	4%	47.2%
48	13-4. That population genetics tells us when microevolution occurs.	7%	48.7%
26	10-5. The making of a protein requires transcription and translation.	8%	52.4%
36	7-3. That cellular respiration has four phases. Three phases occur in the mitochondria.	11%	54.7%
17	4-2. The different sizes and types of cells and how cells are studied.	7%	55.4%
33	6-3. That photosynthesis involves two sets of reactions: The light reactions and the Calvin cycle reactions.	6%	56.2%
45	14-3. The basic concept of macroevolution and speciation and that the origin of new species usually requires geographic separation (e.g. allopatric speciation).	12%	58.7%
46	14-1. That species have been defined in more than one way.	11%	60.1%
21	8-6. That meiosis produces cells that become the gametes in animals and spores in other organisms.	5%	60.8%
20	8-4. That somatic cells have a cell cycle and undergo mitosis and cytokinesis. Mitosis maintains the chromosome number.	15%	62.5%
28	10-1. That DNA is the genetic material.	14%	62.6%
40	9-3. That Mendel's law of segregation describes how gametes pass on traits.	7%	63.4%
47	14-2. That reproductive barriers maintain genetic differences between species.	11%	64.3%
22	8-1. That cell division ensures the transmission of genetic information.	10%	64.3%
27	10-3. The Mechanism of DNA replication and repair.	15%	66.0%
25	8-2. That cell division is involved in both asexual and sexual reproduction.	29%	66.4%
24	8-8. That meiosis and the importance of genetic variation.	7%	66.8%
8	2-4. That atoms react with one another to form molecules though chemical bonds and attractions.	18%	67.2%

13	3-2. The diversity of organic molecules makes life diverse (e.g, functional groups, monomers)	12%	68.6%
32	6-4. The light reaction absorbs solar energy and converts it into chemical energy.	26%	69.2%
19	5-6. The different types of transport across membranes.	29%	69.6%
18	4-3. The basic structures found in prokaryotic and eukaryotic cells.	7%	70.9%
38	9-5. That monohybrid and dihybrid crosses are used to show Mendel's laws of inheritance.	18%	72.8%
41	13-2. That Charles Darwin formulated natural selection as a mechanism for evolution.	9%	74.4%
11	2-4. That atoms react with one another to form molecules though chemical bonds and attractions.	26%	75.4%
34	6-6. That C4 and CAM plants also produce a carbohydrate but under different conditions.	15%	77.1%
3	1-7. The method and practice of scientific inquiry.	7%	78.2%
50	15-3. That organisms are classified into categories and that the Linnaean classification system reflects phylogeny.	12%	78.3%
2	1-3. The hierarchy of biological organization.	4%	78.6%
15	3-4. The basic structure and function of the four types of biological macromolecules.	16%	80.7%
42	14-2. That reproductive barriers maintain genetic differences between species.	14%	81.2%
9	2-6. The dissociation of water, the pH scale, and buffers and the harmful effects of acid deposition.	23%	82.3%
37	9-1. That Gregor Mendel deduced the Laws of Inheritance.	13%	82.4%
4	1-6. The value and use of science as a process of obtaining knowledge based upon observable evidence.	9%	88.0%
39	9-7. The use of pedigree analysis in human genetics and genetic disorders.	11%	88.7%
1	1-2. The characteristics that describe living organisms (life).	8%	89.1%
12	3-4. The basic structure and function of the four types of biological macromolecules.	19%	90.1%
5	2-5. The structure and unique properties of water.	7%	90.6%
16	4-1. That cells are the basic units of life.	21%	91.6%
7	2-2. The elements that make up living organisms.	7%	93.2%
		<b>TOTAL</b>	<b>64.7%</b>

## Assessment Results listed by decreasing Standard Deviation

<b>BIOL 1010 Departmental Final Exam Spring 2010</b>			
Question	Objective	St Dev	Proficiency
25	8-2. That cell division is involved in both asexual and sexual reproduction.	29%	66.4%
19	5-6. The different types of transport across membranes.	29%	69.6%
11	2-4. That atoms react with one another to form molecules though chemical bonds and attractions.	26%	75.4%
32	6-4. The light reaction absorbs solar energy and converts it into chemical energy.	26%	69.2%
9	2-6. The dissociation of water, the pH scale, and buffers and the harmful effects of acid deposition.	23%	82.3%
16	4-1. That cells are the basic units of life.	21%	91.6%
12	3-4. The basic structure and function of the four types of biological macromolecules.	19%	90.1%
38	9-5. That monohybrid and dihybrid crosses are used to show Mendel's laws of inheritance.	18%	72.8%
8	2-4. That atoms react with one another to form molecules though chemical bonds and attractions.	18%	67.2%
15	3-4. The basic structure and function of the four types of biological macromolecules.	16%	80.7%
20	8-4. That somatic cells have a cell cycle and undergo mitosis and cytokinesis. Mitosis maintains the chromosome number.	15%	62.5%
34	6-6. That C4 and CAM plants also produce a carbohydrate but under different conditions.	15%	77.1%
27	10-3. The Mechanism of DNA replication and repair.	15%	66.0%
28	10-1. That DNA is the genetic material.	14%	62.6%
42	14-2. That reproductive barriers maintain genetic differences between species.	14%	81.2%
37	9-1. That Gregor Mendel deduced the Laws of Inheritance.	13%	82.4%
14	3-3. The synthesis and breakdown of biological polymers.	13%	44.9%
13	3-2. The diversity of organic molecules makes life diverse (e.g, functional groups, monomers)	12%	68.6%
50	15-3. That organisms are classified into categories and that the Linnaean classification system reflects phylogeny.	12%	78.3%
45	14-3. The basic concept of macroevolution and speciation and that the origin of new species usually requires geographic separation (e.g. allopatric speciation).	12%	58.7%
36	7-3. That cellular respiration has four phases. Three phases occur in the mitochondria.	11%	54.7%
46	14-1. That species have been defined in more than one way.	11%	60.1%
47	14-2. That reproductive barriers maintain genetic differences between species.	11%	64.3%
39	9-7. The use of pedigree analysis in human genetics and genetic disorders.	11%	88.7%
43	10-5. The making of a protein requires transcription and translation.	10%	30.9%
22	8-1. That cell division ensures the transmission of genetic information.	10%	64.3%
49	14-4. The other mechanisms of speciation (e.g. sympatric speciation).	10%	36.7%
44	13-6. The process of natural selection and that it can be stabilizing, directional, or disruptive.	10%	40.7%
41	13-2. That Charles Darwin formulated natural selection as a mechanism for evolution.	9%	74.4%

4	1-6. The value and use of science as a process of obtaining knowledge based upon observable evidence.	9%	88.0%
26	10-5. The making of a protein requires transcription and translation.	8%	52.4%
10	3-1. The chemical properties of carbon atoms.	8%	43.1%
1	1-2. The characteristics that describe living organisms (life).	8%	89.1%
3	1-7. The method and practice of scientific inquiry.	7%	78.2%
17	4-2. The different sizes and types of cells and how cells are studied.	7%	55.4%
7	2-2. The elements that make up living organisms.	7%	93.2%
24	8-8. That meiosis and the importance of genetic variation.	7%	66.8%
40	9-3. That Mendel's law of segregation describes how gametes pass on traits.	7%	63.4%
35	7-4. The electron transport chain captures much energy.	7%	32.7%
5	2-5. The structure and unique properties of water.	7%	90.6%
18	4-3. The basic structures found in prokaryotic and eukaryotic cells.	7%	70.9%
48	13-4. That population genetics tells us when microevolution occurs.	7%	48.7%
6	1-1. That evolution explains why organisms are characterized by diversity and unity.	6%	36.8%
33	6-3. That photosynthesis involves two sets of reactions: The light reactions and the Calvin cycle reactions.	6%	56.2%
30	5-3. The structure and cycle of adenosine triphosphate (ATP).	5%	35.2%
31	10-7. That gene mutations are changes in the sequence of DNA bases that affect genetic information and expression.	5%	24.5%
21	8-6. That meiosis produces cells that become the gametes in animals and spores in other organisms.	5%	60.8%
29	5-4. The basic concepts of enzyme function.	4%	47.2%
2	1-3. The hierarchy of biological organization.	4%	78.6%
23	8-7. That meiosis halves the number of chromosomes because homologous chromosomes separate during meiosis. Synapsis and crossing-over also occur during meiosis.	4%	35.8%
		<b>TOTAL</b>	<b>64.7%</b>