

**A Review of General Education Student Outcomes
Connors State College
Updated October 2009**

CSC Current General Education Student Outcomes		
Subject Area	Description	Assessment Measures
Mathematics	<p>Competencies measured by the ACT CAAP:</p> <ul style="list-style-type: none"> • Intermediate Algebra. Items in this category assess students' understanding of exponents, rational expressions, and systems of linear equations. Other concepts such as the quadratic formula and absolute value inequalities may also be tested. • Coordinate Geometry. Knowledge and skills assessed in this category may include graphing in the standard coordinate plane or the real number line, graphing conics, linear equations in two variables, graphing systems of equations, and similar types of skills. • College Algebra. Items in this category are based on advanced algebra concepts including rational exponents, exponential and logarithmic functions, complex numbers, matrices, inverses of functions, and domains and ranges. <p>Competencies measured by final test in College Algebra:</p> <ul style="list-style-type: none"> • Apply properties of real numbers. • Simplify integral exponents. • Add, subtract, multiply, and divide polynomials. • Factor polynomials that are perfect squares trinomials, difference of two squares, difference of two cubes, sum of two cubes, and trinomials of the form $ax^2 + bx + c$, where $a = 1$ and a is different from 1. • Simplify rational expressions. • Convert exponential expressions to rational expressions and rational expressions to exponential expressions. • Rationalize numerators and denominators. • Find the unknown side of a right triangle using the Pythagorean Theorem. • Use the distance formula to calculate distances between given points. • Solve linear equations and transfer to real life applications. • Solve quadratic equations using factoring, extracting the roots, and completing the square, and the quadratic formula. • Solve equations involving radicals, exponents, or absolute value. • Plot points on the rectangular coordinate graph and find distance between the points. • Using the midpoint formula, calculate the coordinates of the midpoint. • Graph linear equations. • Find the slope and intercepts of linear equations. • Find the equation of a line, using point-slope form and the slope-intercept form of an equation of a line. • Find an equation of a line that is parallel and an equation of a line that is perpendicular to a given line. • Graph a circle, using the center and the radius. • Find the equation of a circle, given the center and the radius. • Solve application problems, using direct, inverse, and joint variation. • Find the domain and range of a relation. • Using the definition of function, determine whether a given relation is a function. • Add, subtract, multiply, and divide complex numbers. • Use synthetic division to find the real roots of a polynomial. • Solve and graph logarithmic equations. • Solve and graph exponential equations. • Solve application problems involving logarithmic and exponential equations. • Solve a system of two linear equations in two variables by graphing. • Solve a system of two linear equations using the substitution and elimination methods. • Use systems of linear equations to solve applied problems. <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of mathematics. • Student ratings of instruction in the area of mathematics. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • ACT CAAP for graduating students; used as a benchmark and aspirational measure • Final tests in College Algebra, the college level mathematics course taken by the majority of students in transfer programs • Indirect evidence from CSC Alumni Survey and other program level surveys

<p>Reading</p>	<p>Competencies measured by the ACT CAAP:</p> <ul style="list-style-type: none"> • Referring Skills. Test items that focus on referring skills require the student to derive meaning from text by identifying and interpreting specific information that is explicitly stated. Typical items of this type require students to recognize main ideas of paragraphs and passages, to identify important factual information, and to identify relationships among different components of textual information. • Reasoning Skills. Test items that focus on reasoning skills require students to determine implicit meanings and to go beyond the information that is explicitly presented. Typical items in this category assess students' ability to determine meaning from context, to infer main ideas and relationships, to generalize and apply information beyond the immediate context, to draw appropriate conclusions, and to make appropriate comparisons <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of reading. • Student ratings of instruction in the area of reading. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • ACT CAAP for graduating students; used as a benchmark and aspirational measure • Indirect evidence from CSC Alumni Survey and other program level surveys
<p>Writing</p>	<p>Competencies measured by the ACT CAAP:</p> <p>Usage/Mechanics:</p> <ul style="list-style-type: none"> • Punctuation. Use and placement of commas, colons, semicolons, dashes, parentheses, apostrophes, and quotation, question, and exclamation marks. • Grammar. Adjectives and adverbs, conjunctions, and agreement between subject and verb and between pronouns and their antecedents. • Sentence structure. Relationships between/among clauses, placement of modifiers, and shifts in construction. • Organization. Organization of ideas and relevance of statements in context (order, coherence, unity). <p>Essay:</p> <ul style="list-style-type: none"> • Formulating an assertion about a given issue • Supporting that assertion with evidence appropriate to the issue, position taken, and a given audience • Organizing and connecting major ideas • Expressing those ideas in clear, effective language <p>Competencies measured by the rubric at end of English Composition II:</p> <ul style="list-style-type: none"> • Identify through testing and writing the following literary elements: Plot, character, theme, point of view, symbolism, irony, allegory, connotation and denotation, imagery, metaphor, simile, personification, paradox, hyperbole, allusion. • Exhibit through testing and writing an understanding of the characteristics and importance of literature that deals significantly with life rather than literature based on escapism. • Analyze and interpret literature in writing. • Write paragraphs and essays using compound and complex sentences. • Write essays with introductory, supporting detail, and concluding paragraphs. • Write essays with a stated thesis and specific supporting information. • Use transitions effectively to tie together the parts of an essay or paragraph. • Apply the rules of sentence structure and mechanics properly in all written assignments. • Integrate quotes smoothly. • Use appropriate documentation style for source citations. <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of writing. • Student ratings of instruction in the area of writing. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • ACT CAAP for graduating students; used as a benchmark and aspirational measure • Final essays in English Composition II, scored by a rubric designed by English faculty • Indirect evidence from CSC Alumni Survey and other program level surveys

<p>Science</p>	<p>Competencies measured by the ACT CAAP:</p> <ul style="list-style-type: none"> • Data Representation. This format presents students with graphic and tabular material similar to that found in science journals and texts. The items associated with this format measure skills such as graph reading, interpretation of scatterplots, and interpretation of information presented in tables, diagrams, and figures. • Research Summaries. This format provides students with descriptions of one experiment or of several related experiments. The items focus on the design of experiments and the interpretation of experimental results. The stimulus and items are written expressly for the Science Test, and all relevant information is completely presented in the text of the stimulus or in the test questions. <p>Competencies measured by final test in General Biology:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of the nature of science. • Explain the scientific method. • Recount the history of science. • Explain the scientific system for classifying and naming organisms. • Name and describe the three domains. • Outline the 5 kingdom taxonomic system. • Demonstrate an understanding of the chemical processes which underlie biological systems. • Describe chemical systems in general terms. • Demonstrate recognition of some of the most important biological molecules and chemical groups. • Demonstrate an understanding of the significance of polar and nonpolar molecules in biological structure and function. • Explain the principle of polymerization and its importance in the synthesis of macromolecules. • Describe the four major classes of biological macromolecules and the nature of the chemical bonds that are involved in each. • Distinguish between the two primary cell types: prokaryotic and eukaryotic cells. • Describe the structure and function of organelles. • Explain the structural organization of biological membranes. • Distinguish between active and passive transport as well as the variations of each. • Explain the relevance of chemical energy to biology. • Discuss the role of ATP in biological processes. • Demonstrate an understanding of the different types of chemical reactions. • Explain the fundamental importance of energy-producing pathways in biological systems. • Describe fermentation process as an energy producing process. • Describe the process of photosynthesis. • Distinguish between the light dependent and light independent reactions of photosynthesis. • Demonstrate an understanding of the processes of replication, transcription, and translation. • Describe the process of binary fission. • Describe the phases in the life cycle of the cell. • Outline the phases of mitosis and the phases of meiosis. • Apply basic Mendelian genetics to the breeding of plants and animals. • Describe special problems, diseases, and disorders caused by defective genes. • Identify the primary tissue types, subtypes, and locations. • Relate the basic anatomy and physiology of animal systems and human systems. • Relate the basic form and function of plants. • Describe Darwin's theory of evolution by natural selection. • Define <i>adaptation</i>, <i>selection</i>, and <i>fitness</i> in genetic terms. • Describe the way natural selection can affect heritable characteristics in a population. • Describe the interdependence of organisms with each other and with their environments. • Demonstrate an understanding of the adaptive processes and interactions among biotic and abiotic factors within communities and biomes. • Describe the term <i>reproductive isolation</i>, and explain how populations of a species may be reproductively isolated from one another. • Differentiate between the theories of gradualism and punctuated equilibrium. • Describe the characteristics of the kingdoms Monera and Protista and the viruses. • Describe the characteristics of the kingdoms Fungi and Plantae. • Describe the characteristics of the kingdom Animalia. • Name the major phyla of the five kingdoms; give characteristics and examples. 	<ul style="list-style-type: none"> • ACT CAAP for graduating students; used as a benchmark and aspirational measure • Final test in General Biology, the science course taken by the majority of students in transfer programs • Indirect evidence from CSC Alumni Survey and other program level surveys
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	<p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of science. • Student ratings of instruction in the area of science. • Student ratings of preparation for transfer courses. 	
<p>Computer Literacy</p>	<p>Competencies measured by the computer skills rubric:</p> <ul style="list-style-type: none"> • Demonstrate basic operating system functions including file management. • Access and Navigate the Internet. • Demonstrate email skills. • Prepare professional documents using a Word Processing application. • Create professional spreadsheets using a Spreadsheet application. • Create and maintain a database utilizing a database application. • Create a Presentation using a Presentation application. <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of computer literacy. • Student ratings of instruction in the area of computer literacy. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • Measurement is through a computer skills rubric scored at the end of the Fundamentals of Computers class, the introductory class required of all students in transfer programs. • Indirect evidence from CSC Alumni Survey and other program level surveys
<p>Critical Thinking</p>	<p>After completion of this project, students will be able to demonstrate at least one of the following skills:</p> <ul style="list-style-type: none"> • Comprehend complex ideas, data, concepts, judgments, beliefs, rules, procedures, or complex forms of visual and graphic representation; • Make inferences based on careful observation; • Make judgments based on specific and appropriate criteria; • Solve problems utilizing specific processes and techniques; • Recognize relationships between the arts, culture, and society; • Develop new ideas by synthesizing related and/or fragmented information; • Apply knowledge and understanding to different contexts, situations, and/or specific endeavors; • Deduce the meaning of data, statements, principles, beliefs, concepts, questions, or judgments; • Recognize the need to acquire new information; and, • State the results of one's reasoning. <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of critical thinking. • Student ratings of instruction in the area of critical thinking. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • Embedded assessment within specified general education classes— could be a group discussion activity, a research paper, an essay, questions on an essay test, participation in an activity • Indirect evidence from CSC Alumni Survey and other program level surveys
<p>Global Awareness</p>	<p>After completion of this project, students will be able to demonstrate at least one of the following skills:</p> <ul style="list-style-type: none"> • Knowledge of geography, history, culture, values, and/or language of another country • Knowledge of the impact of economic, political, health, environmental, and/or technological changes on people around the world • Knowledge of how the American culture has been impacted by other cultures • Knowledge of contributions made by other cultures to the scientific world, to medicine, to the arts and humanities, to education, to business, and other areas of study • Participation in some activity that has the potential to increase awareness of another culture <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of global awareness. • Student ratings of instruction in the area of global awareness. 	<ul style="list-style-type: none"> • Embedded assessment within specified general education classes— could be a group discussion activity, a research paper, an essay, questions on an essay test, participation in an activity • Indirect evidence from CSC Alumni Survey and other program level surveys

<p>Citizenship</p>	<p>After completion of this project, students will be able to demonstrate at least one of the following skills:</p> <p>Democratic Values</p> <ul style="list-style-type: none"> • Prepared citizens are knowledgeable about and are committed to the values inherent in the US Constitution and Bill of Rights: justice, freedom, equality, diversity, authority, privacy, due process, property, participation, truth, patriotism, human rights, rule of law, tolerance, mutual assistance, personal and civic responsibility, self-restraint and self-respect. <p>The Common Good</p> <ul style="list-style-type: none"> • Citizens, in order to be effective, need to act from knowledge of the common good; that is, they need to be willing to deliberate about the nature of the public good and how to achieve it. They also need to possess compassion, ethical commitment, social responsibility, and a sense of interdependence among people and between people and their environment. They need to express this commitment to the common good through voting, volunteerism, serving on juries, petitioning the government for change, etc. <p>Knowledge</p> <ul style="list-style-type: none"> • Effective civic education results in knowledge and comprehension of our nation's founding documents, the structure of government, the political process, and the global context in which the US functions. <p>Thinking Skills</p> <ul style="list-style-type: none"> • Competent citizens require skills in higher-level thinking processes – critical reasoning, problem solving, decision making, perspective-taking, divergent thinking – constructing hypotheses, and evaluating evidence. <p>Social Process Skills</p> <ul style="list-style-type: none"> • Social skills identified as critical for high-functioning citizens include communication, conflict management, consensus building, and working in cooperative endeavors. <p>Student Attitudes</p> <ul style="list-style-type: none"> • Effective civic education influences students in such a way that they demonstrate their belief in the efficacy of civic participation. <p>Indirect measures from alumni survey, student surveys, etc.:</p> <ul style="list-style-type: none"> • Student ratings of competency in the area of citizenship. • Student ratings of instruction in the area of citizenship. • Student ratings of preparation for transfer courses. 	<ul style="list-style-type: none"> • Embedded assessment within specified general education classes – could be a group discussion activity, a research paper, an essay, questions on an essay test, participation in an activity • Indirect evidence from CSC Alumni Survey and other program level surveys
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