

Department of Science, Math, & Engineering Technology

LUNA COMMUNITY COLLEGE

Alternative and Sustainable Energy Program – Associate of Science

Program Goal: students will be able to pass industry certification, enter the workforce, or continue to four-year institution in electrical engineering

<u>ASEP Competencies</u> (Learning Outcomes Being Measured)	<u>ASEP Courses and Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
<p>1. Students will demonstrate knowledge of the theory and application for alternative energy systems: Students will be able to: 1) properly size a photovoltaic system; 2) design a solar thermal system; 3) design a small scale hydroelectric system; 4) demonstrate an understanding of all applications of alternative energy systems</p>	<p>ASE101-Intro to Renewable Energy ASE202-Solar and Wind Energy ASE205-Hydro, Geothermal, & Biomass Energy Pre/Post tests Lecture Exams Laboratory Exercises Quizzes and homework assignments Lab exercises will provide hands-on learning opportunities Pass coursework/exams with 70% or better</p>	<p>New program with no data collected to date</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	
<p>2. Students will demonstrate an understanding of DC/AC circuitry: Students will be able to: 1) understand the DC circuitry of PV systems; 2) understand the AC circuitry of PV systems; 3) understand the AC component of residential wiring; 4) systematically apply safety regulations</p>	<p>ELEC101 – DC Circuits ELEC102 – AC Circuits BT120 – Basic Residential Electricity Pre/Post tests Lecture Exams Laboratory Exercises Quizzes and homework assignments Pass coursework/exams with 70% or better</p>	<p>New program with no data collected to date</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	
<p>3. Students will</p>	<p>ASE210 – NEC for</p>	<p>New program with no data</p>	<p>Based on student assessment</p>	

<p>demonstrate a mastery of the National Electric Code – Sec. 690 – Alternative Energy Systems : Students will be able to: 1) demonstrate comprehension of safety regulations; 2) demonstrate proper safety procedures in installation of a system</p>	<p>Alternative Energy ASE270 – Alternative Energy Systems Project Lecture Exams Laboratory Exercises Quizzes and homework assignments Pass coursework/exams with 70% or better</p>	<p>collected to date</p>	<p>results curriculum revisions will occur if found to be necessary</p>	
<p>4. Students will demonstrate and apply critical thinking and utilize proper decision making skills for safety during installation of alternative energy systems: Students will be able to: 1) design and install a system based on knowledge gained in previous courses</p>	<p>ASE270 – Alternative Energy Systems Project Capstone course- installation of system: Students will design and install an alternative energy system</p>	<p>New program with no data collected to date</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	
<p>5. Students will complete the capstone course and demonstrate a mastery of the program material: Students will be able to work collaboratively with demonstrated program comprehension</p>	<p>ASE270 – Alternative Energy Systems Project Capstone Project Exit/Final Exam (comprehensive) Exit Interview</p>	<p>New program with no data collected to date</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	

ASEP Assessment completed by _____

Signature

Printed Name

Date

Department of Science, Math, & Engineering Technology

LUNA COMMUNITY COLLEGE

MATHEMATICS – Associate of Science

Program Goal: students will be able to transfer to a four-year program in math, education, computer science, engineering, economics, or related fields

<u>MATH Competencies</u> (Learning Outcomes Measured)	<u>MATH Courses and Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
<p>1. Students will graph functions Students should:</p> <ul style="list-style-type: none"> a. Sketch the graphs of linear, higher-order polynomial, rational, absolute value, exponential, logarithmic, and radical functions. b. Sketch a graph using point plotting and analysis techniques, including basic transformations of functions such as horizontal and vertical shifts, reflections, stretches, and compressions. c. Determine the vertex, axis of symmetry, maximum or minimum, and intercepts of a quadratic equation. 	<p>MATH180-College Algebra</p> <p>Homework assignments Quizzes Chapter exams Final exam MATH180 Exit Exam (piloted SP 2010) Pre-test/post-test comparison</p>	<p>DATA collection and summarization in progress</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	
<p>2. Students will solve various kinds of equations. Students should:</p> <ul style="list-style-type: none"> a. Solve quadratic equations using factoring, completing the squares, the square root method, and quadratic formula. b. Solve exponential and 	<p>MATH180-College Algebra</p> <p>Homework assignments Quizzes Chapter exams Final exam MATH180 Exit Exam (piloted SP 2010) Pre-test/post-test comparison</p>			

<p>logarithmic equations. c. Solve systems of two or three linear equations.</p>				
<p>3. Students will demonstrate the use of function notation and perform operations on functions. Students should: a. Find the value of a function for a given domain value b. Add, subtract, multiply, divide and compose functions. c. Determine the inverse of a function. d. Compute the difference quotient for a function. e. Correctly use function notation and vocabulary related to functions, i.e. domain, range, independent variable, of, even symmetry, etc.</p>	<p>MATH180-College Algebra Homework assignments Quizzes Chapter exams Final exam MATH180 Exit Exam (piloted SP 2010) Pre-test/post-test comparison</p>			
<p>4. Students will model/solve real-world problems. Students should: a. Use and understand slope as a rate of change. b. Use equations and systems of equations to solve application problems. c. Apply knowledge of functions to solve specific application problems. d. Solve compound interest</p>	<p>MATH180-College Algebra Homework assignments Quizzes Chapter exams Final exam MATH180 Exit Exam (pilot SP 2010) Pre-test/post-test comparison</p>			

<p>problems. e. Solve application problems involving maximization or minimization of a quadratic function. f. Solve exponential growth and decay problems.</p>				
<p>5. Students will demonstrate an understanding of the theoretical, geometrical underpinnings of the calculus. Students should: Algebraically and graphically demonstrate an understanding of: a. Limit b. Tangent line c. Difference quotient d. Fundamental theorem of calculus e. Riemann sums</p>	<p>MATH195-Calculus I MATH212-Calculus II MATH213-Calculus III</p> <p>Homework assignments Quizzes Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>6. Students will use concepts of function, limit, continuity, derivative, and integral. Students should: Apply the theory of calculus through manipulations involving: a. The finding of limits. b. Using differentiation techniques. c. Working with</p>	<p>MATH195-Calculus I MATH212-Calculus II MATH213-Calculus III</p> <p>Homework assignments Quizzes Chapter exams Final exam Pre-test/post-test comparison</p>			

<p>transcendental & trigonometric functions. d. Determining points of discontinuity and intervals of continuity.</p>				
<p>7. Students will apply methods of calculus to optimization, graphing, and approximation. Students should be able to: a. Find extreme points. b. Understand the graphs of a function and its 1st and 2nd derivatives and how they relate. c. Apply Newton's method. d. Use differentials to approximate functions.</p>	<p>MATH195-Calculus I MATH212-Calculus II MATH213-Calculus III</p> <p>Homework assignments Quizzes Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>8. Students will apply differential and integral calculus to problems in geometry, physics, and other fields. Students should: a. Understand that calculus has many uses in science, business, and other fields. b. Students should be able to solve application problems involving rates of change, optimization, related rates, and acceleration/velocity.</p>	<p>MATH195-Calculus I MATH212-Calculus II MATH213-Calculus III</p> <p>Homework assignments Quizzes Chapter exams Final exam Pre-test/post-test comparison</p> <p>MATH202-Discrete Math: research project and presentation to class and faculty – theory and applications</p>			

MATHEMATICS Assessment completed by _____

Signature

Printed Name

Date

**Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE**

GENERAL ENGINEERING– Associate of Science

Program Goal: Upon completion of the General Engineering program the student will be prepared to transfer to a four-year institution and pursue an engineering degree

<u>General Engineering Competencies</u> (Learning Outcomes Measured)	<u>General Engineering Courses and Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
1. Students will demonstrate an understanding of the engineering design process: Students will be able to employ the EDP and communicate the process	SMET101 – Intro to SMET SMET117-Intro to Engineering Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
2. Students will use concepts of statics and dynamics in the engineering field: Students will gain an understanding of the physical properties and principles underlying materials and Newtonian Mechanics	SMET117-Intro to Engineering MATH161/162 Calculus Physics I & II Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Pre-test/post-test comparison			
3. Students will demonstrate knowledge of theory and application of mathematics and physics as applied in the	SMET117-Intro to Engineering MATH161/162 Calculus Physics I & II			

<p>engineering field: Students will be able to: 1) solve kinematics problems; 2) solve rheology related problems; 3) comprehend material properties</p>	<p>Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Research Paper/Presentation Pre-test/post-test comparison</p>			
<p>4. Students will apply differential and integral calculus to problems in geometry, physics, and other fields: Students will be able to solve application problems involving rates of change, optimization, related rates, acceleration, and velocity.</p>	<p>MATH 195-Calc. I MATH212-Calc. II MATH213-Calc. III MATH161/162 Calculus Physics I & II Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Research Paper/Presentation Pre-test/post-test comparison</p>			
<p>5. Students will demonstrate a mastery of course content as delivered in the general engineering program</p>	<p>ALL required program coursework Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Pre-test/post-test comparison Research Paper/Presentation Must pass classes with a “C” or better</p>			

General Engineering Assessment completed by _____

Signature

Printed Name

Date

Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE
LIFE SCIENCE– Associate of Science

Program Goal: Upon completion of the Life Science program the student will be prepared to transfer to a four-year institution with freshman and sophomore requirements achieved

<u>Life Science Competencies</u> (Learning Outcomes Being Measured)	<u>Life Science Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
<p>1. Students will describe the process of scientific inquiry. Students should:</p> <ul style="list-style-type: none"> a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition, doctrine, or intuition. b. Students should value science as a way to develop reliable knowledge about the world. 	GEOL101 ENVS102 BIO110 BIO111 BIO127 – Botany BIO142 – Zoology CHEM111 CHEM112 SMET101 Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
<p>2. Students will solve problems scientifically. Students should:</p> <ul style="list-style-type: none"> a. Be able to construct and test hypotheses using modern lab equipment (such as microscopes, scales, computer technology) and appropriate quantitative methods. b. Be able to evaluate 	GEOL101 ENVS102 BIO110 BIO111 BIO127 – Botany BIO142 – Zoology CHEM111 CHEM112 SMET101 Homework assignments Lab Assignments			

<p>isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories).</p>	<p>Lab Reports Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>3. Students will communicate scientific information. Students should: Communicate effectively about science (e.g., write lab reports in standard format and explain basic scientific concepts, procedures, and results using written, oral, and graphic presentation techniques.)</p>	<p>GEOL101 ENVS102 BIO110 BIO111 BIO127 – Botany BIO142 – Zoology CHEM111 CHEM112 SMET101</p> <p>Homework assignments Lab Assignments Research Paper/Presentation required for each course</p>			
<p>4. Students will apply quantitative analysis to scientific problems. Students should: a. Select and perform appropriate quantitative analyses of scientific observations. b. Show familiarity with the metric system, use a calculator to perform appropriate mathematical operations, and present</p>	<p>GEOL101 ENVS102 BIO110 BIO111 BIO127 – Botany BIO142 – Zoology CHEM111 CHEM112 SMET101</p> <p>Homework assignments Lab Assignments Lab Reports</p>			

results in tables and graphs.	Chapter exams Final exam Pre-test/post-test comparison			
5. Students will apply scientific thinking to real world problems. Students should: a. Critically evaluate scientific reports or accounts presented in the popular media. b. Understand the basic scientific facts related to important contemporary issues (e.g., global warming, stem cell research, cosmology), and ask informed questions about those issues.	GEOL101 ENVS102 BIO110 BIO111 BIO127 – Botany BIO142 – Zoology CHEM111 CHEM112 SMET101 Homework assignments In-class discussions Research paper/Presentation Chapter exams Final exam Pre-test/post-test comparison			

Life Science Assessment completed by _____

Signature

Printed Name

Date

Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE
PHYSICAL SCIENCE– Associate of Science

Program Goal: Upon completion of the Physical Science program the student will be prepared to transfer to a four-year institution in the physical sciences and closely related fields with freshman and sophomore requirements achieved

<u>Physical Science Competencies</u> (Learning Outcomes Being Measured)	<u>Physical Science Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
<p>1. Students will describe the process of scientific inquiry. Students should:</p> <ul style="list-style-type: none"> a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition, doctrine, or intuition. b. Students should value science as a way to develop reliable knowledge about the world. 	GEOL101 GEOL202 CHEM111 CHEM112 MATH195 MATH212 PHYS115 PHYS116 SMET101 Homework assignments Quizzes / Lab Assignments Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
<p>2. Students will solve problems scientifically. Students should:</p> <ul style="list-style-type: none"> a. Be able to construct and test hypotheses using modern lab equipment (such as microscopes, scales, computer technology) and appropriate quantitative methods. 	GEOL101 GEOL202 CHEM111 CHEM112 MATH195 MATH212 PHYS115 PHYS116 SMET101 Homework assignments			

<p>b. Be able to evaluate isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories).</p>	<p>Lab Assignments Lab Reports Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>3. Students will communicate scientific information. Students should: Communicate effectively about science (e.g., write lab reports in standard format and explain basic scientific concepts, procedures, and results using written, oral, and graphic presentation techniques.)</p>	<p>GEOL101 GEOL202 CHEM111 CHEM112 MATH195 MATH212 PHYS115 PHYS116 SMET101</p> <p>Homework assignments Lab Assignments Research Paper/Presentation required for each course</p>			
<p>4. Students will apply quantitative analysis to scientific problems. Students should: a. Select and perform appropriate quantitative analyses of scientific observations. b. Show familiarity with the metric system, use a calculator to perform appropriate mathematical operations, and present</p>	<p>GEOL101 GEOL202 CHEM111 CHEM112 MATH195 MATH212 PHYS115 PHYS116 SMET101</p> <p>Homework assignments Lab Assignments Lab Reports</p>			

results in tables and graphs.	Chapter exams Final exam Pre-test/post-test comparison			
5. Students will apply scientific thinking to real world problems. Students should: a. Critically evaluate scientific reports or accounts presented in the popular media. b. Understand the basic scientific facts related to important contemporary issues (e.g., global warming, stem cell research, cosmology), and ask informed questions about those issues.	GEOL101 GEOL202 CHEM111 CHEM112 MATH195 MATH212 PHYS115 PHYS116 SMET101 Homework assignments In-class discussions Research paper/Presentation Chapter exams Final exam Pre-test/post-test comparison			

Physical Science Assessment completed by _____

Signature

Printed Name

Date

**Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE**

COMPUTER SCIENCE– Associate of Applied Science

Program Goal: Upon completion of the Computer Science program the student will be prepared to enter the workforce as an entry-level programmer or transfer to a four-year institution computer science program

<u>Computer Science Competencies</u> (Learning Outcomes Measured)	<u>Computer Science Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
<p>1. Students will be exposed to, use, and master basic CS topics:</p> <p>1) Basic Syntax and semantics of computer languages; 2) Variables, types, expressions, and assignment; 3) Simple I/O functions; 4) conditional and iterative control structures; 5) functions and parameter passing; 6) structured decomposition</p>	<p>CS121 – Intro Programming CS140 – Computer Science I CS240–Computer Science II</p> <p>Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison</p>	<p>DATA collection and summarization in progress</p>	<p>Based on student assessment results curriculum revisions will occur if found to be necessary</p>	
<p>2. Students will meet the following learning objectives:</p> <p>1) analyze and explain programs; 2) modify and expand short programs; 3) design, implement, test, and debug complete program; 4) choose appropriate programming constructs for specific tasks; 5) apply techniques of structural decomposition; 6) describe mechanics of parameter passing</p>	<p>CS121 – Intro Programming CS140 – Computer Science I CS215 Adv. Java Program CS240–Computer Science II</p> <p>Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison</p>			

<p>3. Students will demonstrate comprehension of the following topics: 1) Object oriented design; 2) Encapsulation and information hiding; 3) separation of behavior and implementation; 4) classes and subclasses; 5) inheritance; 6) polymorphism</p>	<p>CS140 – Computer Science I CS215 Adv. Java Program CS240–Computer Science II</p> <p>Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>4. Students will apply the knowledge base of Computer Science to identify, describe, explain, and critically evaluate: 1) design of basic functional GUI's; 2) Model-view-controller pattern; 3) Component model of GUI toolkits; 4) event-driven programming</p>	<p>CS215 – Adv. Java CS240- CS II</p> <p>Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>5. Students will apply the knowledge base of Computer Science to identify, describe, explain, and critically evaluate: 1) resource and memory management; 2) Operating systems and the model of the machine; 3) tools and skills used in CS programming.</p>	<p>CS105 – Intro to CS CS112 – Intro Op/Sys CS140 – Computer Science I CS215 Adv. Java Program CS240–Computer Science II</p> <p>Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison</p>			

Computer Science Assessment completed by _____

Signature

Printed Name

Date

**Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE**

DRAFTING TECHNOLOGY– Associate of Applied Science

Program Goal: Upon completion of the Drafting Technology program the student will be prepared to enter the workforce as an entry-level architectural drafting assistant or transfer to a four-year institution architecture program

<u>Drafting Technology Competencies</u> (Learning Outcomes Measured)	<u>Drafting Technology Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
1. Students will gain an understanding of the AutoCAD software and its basic commands	DTEC101 Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
2. Students will master the concepts of import/export of data; attribute data; database links; 3-d design; rendering and imaging; toolbar customization	DTEC107 Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison			
3. Students will apply the concepts learned in previous courses to architectural drafting: Students will: 1) floor plans; 2) footings and foundations: elevation plans; 3) wall sections; 4) roof plans; 5) detail views	DTEC109 Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison			
4. Students will apply concepts learned to: 1) site plot plans; 2) HVAC systems	DTEC130 Homework assignments Lab Assignments Course projects			

	Chapter exams Final exam Pre-test/post-test comparison			
5. Students will comprehend and apply concepts of plane surveying techniques. Students will: 1) error propagation; 2) linear measurements; 3) angle measurements; 4) area determination; 5) differential and trigonometric leveling; 6) topographic mapping	DTEC208 Homework assignments Lab Assignments Course projects Chapter exams Final exam Pre-test/post-test comparison			
6. Students will demonstrate mastery of all program requirements in the capstone course. Students will: 1) complete a final project in drafting; 2) understand drafting and planning theory	DTEC220 The course will have a final project as part of the capstone requirements measuring hands-on skills and overall competency			

Drafting Technology Assessment completed by _____
Signature

_____ *Printed Name*

_____ *Date*

**Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE**

ELECTRICAL ENGINEERING TECHNOLOGY– Associate of Applied Science

Program Goal: Upon completion of the Electrical Engineering Technology program the student will be prepared to enter the workforce as an entry-level electronics technician or transfer to a four-year institution in an electronics engineering program

<u>Drafting Technology Competencies</u> (Learning Outcomes Measured)	<u>Drafting Technology Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
1. Students will gain an understanding DC circuitry: students will use analytical methods to investigate the behavior of DC circuits; use of multimeters and electronic bench equipment	ELEC101 Homework assignments Lab Assignments Course project Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
2. Students will gain an understanding of AC circuits: students will: 1) understand electromagnetic induction; 2) inductive and capacitive resistance; 3) series and parallel resonance; 4) perform AC circuit analysis	ELEC102 Homework assignments Lab Assignments Course project Chapter exams Final exam Pre-test/post-test comparison			
3. Students will apply the concepts learned in previous courses to solid state and active devices: Students will: investigate system design, analysis and testing using appropriate lab bench testing equipment	ELEC196 Homework assignments Lab Assignments Course project Chapter exams Final exam Pre-test/post-test comparison			
4. Students will understand the basic principles of	ELEC204 Homework assignments			

<p>digital electronic circuits: students will 1) understand binary and other number systems; 2) understand logic gates; 3) understand Boolean algebra; 4) understand memory devices</p>	<p>Lab Assignments Course project Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>5. Students will comprehend and apply concepts of microprocessor design and interfacing in this capstone course. Students will understand and apply: 1) microprocessor concepts; 2) troubleshooting; 3) assembly and machine language; 4) I/O; 5) interfacing</p>	<p>ELEC209 Homework assignments Lab Assignments Capstone Course project Chapter exams Final exam Pre-test/post-test comparison</p>			

Electronic Engineering Technology Assessment completed by _____
Signature

Printed Name

Date

**Department of Science, Math, & Engineering Technology
LUNA COMMUNITY COLLEGE**

VIDEO GAME DESIGN AND DEVELOPMENT– Associate of Applied Science

Program Goal: Upon completion of the VGDD program the student will be prepared to enter the workforce as an entry-level programmer or transfer to a four-year institution computer science program

<u>Computer Science Competencies</u> (Learning Outcomes Measured)	<u>Computer Science Assessment Procedures</u>	<u>Assessment Results</u>	<u>How Results Will Be Used To Make Improvements</u>	<u>(Optional)</u> Recommendations/Goals/ Priorities
1. Students will be exposed to, use, and master basic game script writing: Students will comprehend: 1) basic storytelling; 2) creative writing; 3) basic production of visual materials; 4) and create a story board for game to be developed in capstone course	VGD106 – Script Writing Class/ Homework assignments Course project- to portfolio Chapter exams Final exam Pre-test/post-test comparison	DATA collection and summarization in progress	Based on student assessment results curriculum revisions will occur if found to be necessary	
2. Students will be exposed to, use, and master basic game development: Students will understand: 1) basic game programming 2) C++ programming language; 3) how to develop a 2-D game	VGD128 – Intro VGD Class/ Homework assignments Lab Assignments Course project- to portfolio Chapter exams Final exam Pre-test/post-test comparison			
3. Students will be exposed to, use, and master basic art and animation techniques: Students will understand 1) the physics of movement; 2) how to draw 2 and 3-D characters; 3) the use of motion capture and industry imaging software	VGD130- Art & Animation Class/ Homework assignments Lab Assignments Course project – to portfolio Chapter exams Final exam Pre-test/post-test comparison			
4. Students will analyze and	VGD147-Game Analysis and			

<p>critically evaluate theory of game design: Students will assess and critique: 1) game structure 2) a specific game to explore game design and functionality</p>	<p>Critique Class and Homework assignments Lab Assignments Final exam Pre-test/post-test comparison</p>			
<p>5. Students will apply themselves in the role of programmer: Students will: 1) translate game design from concept development to program; 2) develop artistic specifications; 3) use programming languages of C# and C++ on the Microsoft XNA platform; 4) employ object oriented programming; 5) develop the GUI; 6) create lifelike 2-D and 3-D graphics</p>	<p>VGD228-Intermediate VGD Class/Homework assignments Lab Assignments Course project- to portfolio Chapter exams Final exam Pre-test/post-test comparison</p>			
<p>6) Students will develop a fully functional video game to be presented to peers and faculty. Students will: 1) develop a game platform; 2) use tools and modeling to develop a game engine; 3) edit for sound; 4) develop software; 5) make a final (oral) public presentation of their game; 6) submit a portfolio including all relevant work that went into final game presentation</p>	<p>VGD240-VG Design I VGD245-VG Design II VGD260-Video Game Project (Capstone) Class/Homework assignments Lab Assignments Course project- to portfolio Chapter exams Final exam Pre-test/post-test comparison</p>			

Video Game Design and Development Assessment completed by _____
Signature

Printed Name

Date