Core Competencies Assessment 2010-2011: Area II Courses

LUNA COMMUNITY COLLEGE

MATH180 – College Algebra

Mathematics – Algebra Competencies

NM Common Course Number 1114

State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		<u>To Make Improvements</u>	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
Measured) 1. Students will graph functions Students should: 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.	described – rubric attached)Pre-Post test assessment(pre-test questionsembedded in final exam)Instructor rating of studentcompetencies in corecompetency rating form (1low, 5 hi) F10, 6 sections,n=44Department all-sectionsfinal exam withstandardized scoring: F10 3sections, n=20. SP11: 4sections n= 35See attached appendices forMATH180 Assessment	Fall 2010 –final exam C1 average = 78% of students demonstrated proficiency; Competency Rating Form n=44 C1 = 3.24 avg. FA10 Pre-Post:14% → 73% Avg. 59% improvement n=44 Spring 2011 –final exam C1 average = 59% of students demonstrated proficiency. SP11 Pre-Post:11% → 67% Avg. 56% improvement n= 18	Dept. Math committee working to 1) reduce bias in competency rating forms; 2) increase collaboration in developing all sections final exam, and 3) increase communication among dept math faculty. Committee works to develop strategies to improve assessment tools. Assessment continues to be stressed at department level to improve student learning outcomes. Continue current assessment practices.	Department math faculty meet on a monthly basis to discuss issues and compare progress across MATH180 sections. Math committee works closely with department director to implement active learning strategies. Math faculty regularly present and participate in the LCC Student Learning Outcomes Assessment (SLOA) program.
 2. Students will solve various kinds of equations. Students should: a. Solve quadratic equations using factoring, completing the squares, the square root method, and quadratic formula. b. Solve exponential and logarithmic equations. c. Solve systems of two or three linear equations. 	Reports	 Fall 2010– 3 sections, n=20, final exam C2 average = 59% of students demonstrated proficiency; Competency Rating Form n=44 C2 = 3.25 avg. Spring 2011 – 4 sections, n= 35, final exam C2 average = 39% of students demonstrated proficiency 		
(Continued)				

Core Competencies Assessment 2010-2011: Area II Courses, cont.				
LUNA COMMU	NITY COLLEGE		Mathematics – Algebra Competencies, cont	
MATH180 Co	llege Algebra	NM Common Course Number 1114		
State Competencies	A gaoggmont Drogodurog	Aggoggmont Dogulta	How Desults Will De Lleed To	(Ontional)
<u>State Competencies</u>	Assessment Procedures	Assessment Results	How Results will be Used <u>10</u>	(Optional) Decommon dations/Cools/
(Learning Outcomes Being	(Process/Instrument named or		Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
3. Students will demonstrate		Fall 2010 – 3 sections,		
the use of function notation		n=20, final exam C3		
functions		average = 59% of students		
Students should:		demonstrated proficiency;		
a. Find the value of a function		Competency Rating Form		
for a given domain value		$n = 14$ $C_3 = 3.2$ avg		
b. Add, subtract, multiply, divide		$11-44 C_3 = 5.2 avg.$		
and compose functions.		S		
c. Determine the inverse of a		Spring $2011 - 4$ sections,		
function.		n=35, final exam C3		
d. Compute the difference		average = 47% of students		
quotient for a function.		demonstrated proficiency.		
e. Correctly use function				
notation and vocabulary related				
to functions, i.e. domain, range,				
independent variable, of, even				
A Students will model/solve		E-U 2010 2		
4. Students will model/solve		$\mathbf{Fan 2010-3 sections,}$		
Students should:		n=20, final exam C4		
a. Use and understand slope as a		average = 62% of students		
rate of change.		demonstrated proficiency;		
b. Use equations and systems of		Competency Rating Form		
equations to solve application		n=44 C4 = 2.8 avg.		
problems.				
c. Apply knowledge of functions		Spring 2011 A sections		
to solve specific application		$p_{-}25$ final asom C4		
problems.		II = 55, IIIai exam C4		
d. Solve compound interest		average = 36% of students		
problems.		demonstrated proficiency		
involving maximization or				
minimization of a quadratic				
function				
f. Solve exponential growth and				
decay problems.				
End – Area II - Algebra				

Area II-Algebra Assessment Contact Person Dr. Andrew Feldman

Core Competencies Assessment 2010-2011: Area II Courses, cont.					
Luna Community College			Mathematics - Calculus I Comp	oetencies	
MATH195 Calculus I			NM Common Course # MATH	1614	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)	
(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/	
Measured)	described – rubric attached)			Priorities	
an understanding of the theoretical, geometrical	(pre-test questions embedded in final exam)	Final Exame: FA10 n=13	teaches Calculus I. Need		
underpinnings of the calculus. Students should:	Instructor rating of student	class average = 74% ; SP11 p=8 class average = $77%$	assessment frequency,		
demonstrate an understanding of:	competencies in core	11-6, class average $-77%$	Tendency to overrate the		
 b. Tangent line c. Difference quotient d. Fundamental theorem of calculus e. Riemann sums 	poor, 5 excellent) F10, 1 section, n=13; SP11 1 section, n= 8	Competency rating form (1 = poor, 5 = excellent) FA10 C1 = 4.2 class average, n=13;	practice through pre-testing of students and developing assessment tools to measure		
	Final exam F10 1 section, n=13 SP11: 1 section $n=8$	SP11 C1= 3.9 class average	competencies throughout course. Final exam needs to address specific competencies		
 2. 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 transcendental & trigonometric functions. d. Determining points of discontinuity and intervals of continuity. 	Instructor rating of student competencies in core competency rating form F10, 1 section, n=13; SP11 1 section, n= 8	Competency rating form (1= poor, 5= excellent) FA10 C2 = 3.7 class avg. SP11 C2 = 3.9 class avg.			
(Continued)					

Core Competencies Assessment 2010-2011: Area II Courses, cont.

Mathematics - Calculus I Competencies Luna Community College **MATH195** Calculus I NM Common Course # MATH1614 (Optional) **State Competencies** How Results Will Be Used **Assessment Procedures Assessment Results** (Learning Outcomes Being (Process/Instrument named or Recommendations/Goals/ **To Make Improvements** Measured) described – rubric attached) Priorities 3. Students will apply methods Instructor rating of student Competency rating form One section of CALC I: of calculus to optimization, competencies in core (1 = poor, 5 = excellent)Need further work on graphing, and approximation. FA10 C3 = 3.4, class competency rating form improving assessment Students should be able to: F10, 1 section, n=13; SP11 frequency, methods, and average; a. Find extreme points. SP11 C3 = 3.6 classreducing bias. b. Understand the graphs of a 1 section, n=8function and its 1^{st} and 2^{nd} average derivatives and how they relate. c. Apply Newton's method. d. Use differentials to approximate functions. 4. Students will apply Instructor rating of student Competency rating form differential and integral competencies in core (1 = poor, 5 = excellent)calculus to problems in FA10 C4 = 3.8competency rating form (1 geometry, physics, and other low, 5 hi) F10, 1 section. fields. n=13; SP11 1 section, n= 8 SP11 C4 = 3.9Students 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. End Area II – Calculus I

Area II-Calculus I Assessment Contact Person	Dr. Andrew Feldman	Oct 29, 2011	Phone number	505-454-5306
Name		Date		

Core Competencies Assessment 2010-2011: Area III Courses

Laboratory	Science	Competencies	
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Luna Community College		Laboratory Science Competencies		
PHYS111 Intro to Physic	s, PHYS115 General Physics	I (Algebra)	Algebra Physics PHYS115 = PHYS1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		<u>To Make Improvements</u>	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
 Students will describe the process of scientific inquiry. Students should: a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition, doctrine, or intuition. 	All Lab sciences administer pre- post tests, competency rating form and final grade reporting. FALL2010: PHYS115 General Physics n=6, SP11: PHYS111 Intro to Physics	PHYS115 C1 = 3.2 SP11 competency rating form PHYS111 C1 = 3.3	FA10 Instructor for PHYS115 did not complete pre-post and grade summary; required for further coursework. SP11 PHYS111 instructor did not complete pre-post test assessment and grade summary. Lack of assessment for physics	Full assessment reporting by department faculty
b. Students should value science as a way to develop reliable knowledge about the world.	n=6		courses resulting in instructors required to present findings in Student Learning Outcomes Assessment committee presentations and required to submit department assessment reports	
2. Students will solve	FALL2010: PHYS115 General	FA10 competency rating form		
 problems scientifically. Students should: 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 isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories). 3. Students will communicate	Physics n=6, SP11 : PHYS111 Intro to Physics n=6 FALL2010: PHYS115 General	PHYS115 C2 = 3.0 SP11 competency rating form PHYS111 C2 = 3.1 FA10 competency rating form	All science courses now requiring	
scientific information. Students should:	Physics n=6, SP11 : PHYS111 Intro to Physics n=6	PHYS115 C3 = 2.8 SP11 competency rating form PHYS111 C3 = 3.3	students to present term paper to rate Comp 3 beginning Fall 2011	
(Continued)				
	Core Competencies	Assessment 2010-2011:	Area III Courses, cont.	

Luna Community College PHYS111 Intro to Physics, PHYS115 General Physics I		es I	Laboratory Science Competencies Algebra Physics PHYS115 = PHYS1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used To	(Ontional)
(Learning Outcomes Being	(Process/Instrument named or	Assessment Results	Maka Improvements	Recommendations/Goals/
(Learning Outcomes Deing Mongurad)	(110cess/instrument named of describedbrie attached)		wake improvements	Driorition
Communicate affectively shout	described – rubric attached)			FiloIntes
science (e.g., write lab reports in				
standard format and explain				
basic scientific concepts				
procedures, and results using				
written, oral, and graphic				
presentation techniques.)				
4. Students will apply	FALL2010: PHYS115 General	FA10 competency rating form	Design and add math emphasis to all	Students under-prepared in
quantitative analysis to scientific	Physics n=6,	PHYS115 C4 = 2.3	labs – do better assessment of student	mathematics for most basic
problems.			math preparedness	science courses. All Science
Students should:	SP11 : PHYS111 Intro to Physics	SP11 competency rating form		labs will focus on
a. Select and perform appropriate	n=6	PHYS111 C4 = 3.1		introducing dimensional
quantitative analyses of scientific				analysis, metric system, and
b Show familiarity with the matric				also addressing basic math
system use a calculator to perform				skills
appropriate mathematical				SKIIIS.
operations, and present results in				
tables and graphs.				
5. Students will apply scientific	FALL2010: PHYS115 General	FA10 competency rating form		
thinking to real world problems.	Physics n=6,	PHYS115 C5 = 2.4		
Students should:				
a. Critically evaluate scientific	SP11 : PHYS111 Intro to Physics	SP11 competency rating form		
reports or accounts presented in	n=6	PHYS111 C5 = 3.5		
the popular media.				
facts related to important				
contemporary issues (e.g. global				
warming, stem cell research.				
cosmology), and ask informed				
questions about those issues.				
End – Laboratory Science				
Area III Assessment Contact Person	Dr. Andrew Feldman	<u> </u>	Uct 28, 2011 Phone number 505-45	4-5306
	Coro Compotoncia	Assassment 2010 201		
Core Competencies Assessment 2010-2011: Area III Courses				

Luna Community College			Laboratory Science C	Competencies
GEOL101 Survey	of Earth Science		GEOL1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
1. Students will describe the	All Lab sciences administer pre-	FA10 – course competency	Continue current assessment	
process of scientific inquiry.	post tests, competency rating	form $C1 = 3.1$	methods, add term paper to be	
Students should:	form and final grade reporting.	Pre-test avg. 43%	presented orally	
a. Understand that scientists		Post-test avg. 77.2%		
rely on evidence obtained	FALL2010: GEOL101 Survey	Avg. 34.2% increase:		
from observations rather	of Earth Science n=18, One	5.5%A, 33.3%B, 11.1%C,		
than authority, tradition,	section offered	11.1%D, 1.67%F,		
doctrine, or intuition.		12/18 completed course		
b. Students should value	SP2011: GEOL101 Survey of	0011		
science as a way to develop	Earth Science $n=17$, one section	SPI1 – course competency		
reliable knowledge about	offered	form		
the world.		C1 = 3.3		
2. Students will solve		FA10 – course competency		
problems scientifically.		form $C2 = 3.25$		
Students should:				
a. Be able to construct and				
test hypotheses using		SP11 – course competency		
modern lab equipment		form		
(such as microscopes,		C2 = 3.2		
scales, computer		Pre-test avg. 41%		
technology) and appropriate		Post-test avg. 75.3%		
quantitative methods.		Avg. 34.4% increase		
b. Be able to evaluate isolated		12.5%A, 31.25%B, 43.75%C,		
observations about the		12.5%F		
physical universe and relate		14/17 completed course		
them to hierarchically				
organized explanatory				
frameworks (theories).				
3. Students will communicate		FA10 – course competency	Orally presented term paper required	
scientific information.		form $C3 = 3.1$	starting Fall 2011	
Students should:				
		SP11 – course competency		
		form		
		$C_{3} = 3.1$		
		0.5 - 5.1		
(Continued)				
	Core Competencies	Assessment 2010-2011:	Area III Courses. cont.	
Luna Commun	ity College		Laboratory Science Com	petencies, cont.
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GEOL 101 Survey of	f Earth Science		GEOL1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used <u>To</u>	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
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.)				
4. Students will apply		FA10 – course competency	Design and add math emphasis to all	Students under-prepared in
quantitative analysis to scientific		form $C4 = 3.2$	labs – do better assessment of student	mathematics for most basic
problems.			math preparedness	science courses. All Science
Students should:		0011		labs will focus on
a. Select and perform appropriate		form		analysis metric system and
observations.		C4 = 3.0		scientific notation while
b. Show familiarity with the metric				also addressing basic math
system, use a calculator to perform				skills.
appropriate mathematical				
operations, and present results in tables and graphs				
tables and graphs.				
5. Students will apply scientific		FA10 – course competency		
thinking to real world problems.		form C5 = 3.3		
Students should:				
a. Critically evaluate scientific		SP11 – course competency		
the popular media.		form $C5 = 3.2$		
b. Understand the basic scientific				
facts related to important				
contemporary issues (e.g., global				
cosmology) and ask informed				
questions about those issues.				
Area III Assessment Contact Person	Dr Andrew Feldman		Oct 28 2011 Phone number 505-45	4-5306
Area III Assessment Contact I CISON	Name		Date Those number 505-4	

Core Competencies Assessment 2010-2011: Area III Courses				
Luna Community College BIO105 Biology for Non-Majors			Laboratory Science Competencies BIO1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Ontional)
(Learning Outcomes Being	(Process/Instrument nemod or	<u>Assessment Results</u>	To Moleo Improvementa	Pacommondations/Goals/
(Learning Outcomes Denig	(1 locess/ instrument named of		10 Make Improvements	Drionitica
Measured)	All Lab asianasa a dministra nua	EA10 common commonten ere	Continue comment accomment	Filonities
1. Students will describe the	All Lab sciences administer pre-	FA10 = course competency	matheda add arally presented term	
Students should:	form and final grade reporting	101111 C1 = 4.8	methods, add orany presented term	
Students should:	form and final grade reporting.	Pre-test avg. 55.75%	paper to address Comp 3	
a. Understand that scientists	EALL 2010 DIO105 D'11	Post-test avg. 81.9%		
rely on evidence obtained	FALL2010: BIO105 Biology for	Avg. 48% increase:	Course offered in	
from observations rather	Non-Majors n=14, One section	50%A, 7%B, 21%C, 21%F,	Spring 2011 but instructor failed to	
than authority, tradition,	offered	11/16 completed course	submit reports	
doctrine, or intuition.				
b. Students should value	SP2011: Course offered but no			
science as a way to develop	reporting			
reliable knowledge about				
the world.				
		EA10 course competency		
2. Students will solve		FATO = course competency		
Students should:		$101111 C_2 = 5.8$		
a Pa abla to construct and				
a. Be able to construct and				
modern lob aguinment				
(such as microscopes				
(such as microscopes,				
technology) and appropriate				
quantitativa mathada				
h Pa abla to avaluate isolated				
b. Be able to evaluate isolated				
observations about the				
them to biomerships lies				
them to merarchically				
organized explanatory				
frameworks (theories).				
3. Students will communicate		FA10 – course competency	Require oral presentation of term	
scientific information.		form $C3 = 3.8$	paper to address Comp 3	
Students should:			r r · r · · · · · · · · · · · · · · · ·	
(Continued)				

Core Competencies Assessment 2010-2011: Area III Courses, cont.				
Luna Commu	unity College		Laboratory Science Competencies	
	BIO105 Biology for Non-	Majors	BIO1114	
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used <u>To</u>	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
Communicate effectively about				
science (e.g., write lab reports in standard format and avalatin				
basic scientific concepts				
procedures, and results using				
written, oral, and graphic				
presentation techniques.)				
A Studente will cooler		EA10 course course to a	Design and add math surplusis to 11	Studente under anno 1 '
4. Students will apply quantitative analysis to scientific		FA10 - course competency	Lesign and add math emphasis to all $labs = do better assessment of student$	mathematics for most basic
problems.		101111 C4 = 5.9	math preparedness	science courses All Science
Students should:			num propulciness	labs will focus on
a. Select and perform appropriate				introducing dimensional
quantitative analyses of scientific				analysis, metric system, and
observations.				scientific notation while
b. Show familiarity with the metric				also addressing basic math
system, use a calculator to perform				skills.
operations and present results in				
tables and graphs.				
5. Students will apply scientific		FA10 – course competency		
thinking to real world problems.		form $C5 = 4.2$		
Students should:				
a. Critically evaluate scientific				
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.				
End – Laboratory Science				
Area III Assessment Contact Person	Dr. Andrew Feldman	·	Oct 28, 2011 Phone number 505-4	54-5306
	Name		Date	

Core Competencies Assessment 2010-2011: Area III Courses				
Luna Comm	unity College		Laboratory Science Competencies	
BIO110 General Bio I, BIO111 General Bio II		neral Bio II	BIO1214, BI	01224
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
 Students will describe the process of scientific inquiry. Students should: 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 	All Lab sciences administer pre- post tests, competency rating form and final grade reporting. FALL2010 : BIO110 General Biology 1 n=17 SP2011: BIO111 General Biology II n=6 One section offered of each	FA10 – BIO110 course competency form C1 = 3.9 Pre-test avg. 66% Post-test avg. 83% Avg. increase 17% 17% A, 35% B, 17% C, 31% F 12/17 completed course SP11 – BIO111 course competency form C1 = 3.3	Instructor bias and leniency affecting assessment reporting – instructor training in assessment required to accurately gauge student learning outcomes. Continue current assessment methods, but promote instructor training to better assess student learning outcomes.	Goal: to improve assessment practices in BIO110/111. Priority: hire more qualified faculty to deliver course.
the world.	course			
 2. Students will solve problems scientifically. Students should: 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 isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories). 		FA10 – BIO110 course competency form C2 = 3.5 SP11 – BIO111 course competency form C2 = 3.3 Pre-test avg. 41% Post-test avg. 74% Avg. increase 33% 50% A, 33.3% B, 16.6% D 5/6 completed course		
3. Students will communicate scientific information. Students should: (Continued)		FA10 – BIO110 course competency form C3 = 3.6 SP11 – BIO111 course competency form C3 = 3.2		

Luna Community College BIO110 General Bio 1, BIO111 General Bio II Laboratory Science Competencies BIO1214, BIO1224 State Competencies (I carring Outcomes Breing (Process/Instrument named or described – rubric attached) Assessment Results How Results Will Be Used To Make Improvements Recommendations/Goals Priorities Communicate effectively about science (e.g., write lab reports in sundard forma and explain basis scientific concepts, procedures, and results sting writer, one], and graphic presentation techniques.) FA10 – BIO110 course competency form C4 = 3.5 SP11 – PIO111 course competency form C4 = 3.3 Design and add math emphasis to all labs – do better assessment of studen mathematics for most basic science courses, All Science base values scientific problems. Students will apply science addition to proper the science course addition to empetency form C4 = 3.3 Besign and add math emphasis to all labs – do better assessment of studen mathematics for most basic science courses, All Science labs will focus on science courses, All Science labs will focus on science courses, All Science labs values scientific proper advector by college competency form C5 = 3.4 Students will apply science advector by college advector by	Core Competencies Assessment 2010-2011: Area III Courses, cont.					
BIO110 General Bio I, BIO111 General Bio I BIO1214, BIO1224 State Competencies (Learning Outcomes Being Measured) Assessment Procedures (Process/Instrument named or described - rubric attached) Assessment Results How Results Will Be Used To Make Improvements (Optional) Recommendations/Goals Priorities Communicate effectively about science (e.g., write lab reports in standard formal negative science (e.g., write lab reports) FA10 - BIO110 course competency form C4 = 3.5 Besign and add math emphasis to all labs - do better assessment of student mathematics for most basic science courses. All Science labs - do better assessment of student mathematical observations. Should: a Scientific problems. Students will apply equatitative analysis of scientific problems. Students outper propriate quantitative analysis of scientific problems. Students outper propriate quantitative analysis of scientific problems. Students will apply competency form C4 = 3.5 SP11 - BIO111 course competency form C4 = 3.3 Students will apply scientific notation while also adhressing basic math skills. S. Students will apply scientific tinking to real vorid problems. Students should: a Critically evaluate scientific reports or accounts presented in the popular medu. b. Understand the basis scientific reports or accounts presented in tracks scientific science courses, science courses, counts presented in the popular medu. b. Understand the basis scientific reports or accounts presented in the popular medu. b. Understand the basis scientific reports or accounts presented in the popular medu. b. Understand the basis scientific reports or accounts presented in the popular medu. b. Understand the basis scientific reports or accounts present (erg., global warming, stem cell research, cosmology), and	Luna Community College		Laboratory Science Competencies			
State Competencies (Learning Outcomes Being Measured) Assessment Procedures (Process/instrument named or described - rubric attached) Assessment Results How Results Will Be Used To Make Improvements (Optional) Recommendations/Goals Priorities Communicate effectively about science (e.g., write lab reports in standard format and explain hasic scientific presentation techniques.) FA10 - BI0110 course competency form C4 = 3.5 Design and add math emphasis to all labs - do better assessment of student and prophenes Students under-prepared in mathematics to all labs - do better assessment of student and preparedness Students under-prepared in mathematics for most basic competency form C4 = 3.5 Design and add math emphasis to all labs - do better assessment of student and preparedness Students under-prepared in mathematics for most basic competency form C4 = 3.3 S. Show familiarity with the metric system, use a calculator to perform appropriate mathematical operations, and greath cubest should: b. Show familiarity with the metric system, use a calculator to perform appropriate mathematical operations, and present results in tables and greats. FA10 - BI0110 course competency form C5 = 3.4 SP11 - BI0110 course competency form C5 = 3.4 SP11 - BI0110 course competency form C5 = 3.3 SP11 - BI0110 course competency form C5 = 3.4 SP11 - BI0110 course competency form C5 = 3.	BIO110	O General Bio I, BIO111 General	ral Bio II	BIO1214, BIO1224		
Image: constraint of the second se	State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used To	(Optional)	
Measured) described – rubric attached) Priorities Communicate effectively about science (ce.g., write lab reports in standard format and explain basic scientific concepts, procedures, and results using written, ordl, and graphic presentation techniques.) Priorities Priorities 4. Students will apply quantitative analysis to scientific problems. FA10 – BIO110 course competency form C4 = 3.5 Design and add math emphasis to all labs – do better assessment of student mathematics for more basic competency form C4 = 3.3 Students under-prepared in mathematics for more basic competency form C4 = 3.3 Students should: a. Select and perform appropriate quantitative analyses of scientific observations, students should: a failed for an ord problems. FA10 – BIO111 course competency form C4 = 3.3 Design and add math emphasis to all labs – do better assessment of student math preparedness 5. Students will apply scientific thicking to real world problems. Students would: a Critically evaluate scientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis estientific reports or accounts presented in the popular media. b. Understand the basis informed questions about those in	(Learning Outcomes Being	(Process/Instrument named or		Make Improvements	Recommendations/Goals/	
Communicate effectively about Students write lab reports in standard format and explain basic scientific concepts, procedures, and results using written, oral, and graphic presentation techniques.) EA10 – BIO110 course competency form C4 = 3.5 4. Students will apply quantitative analysis to scientific problems. Students will apply competency form C4 = 3.5 Design and add math emphasis to all labs – do better assessment of student mathematics for most basic science courses. All Science labs will focus on instructional dimensional analysis, metric system, and scientific dimensional analysis of scientific thinking to real world problems. Students will apply scientific thinking to real world problems. 5. Students will apply scientific thicking to real world problems. EA10 – BIO110 course competency form C4 = 3.3 Design and add math emphasis to all labs – do better assessment of student mathematical operations. And present results in tables and graphs. Students will apply scientific thinking to real world problems. Students will apply scientific thinking to real world problems. FA10 – BIO110 course competency form C5 = 3.4 Students will apply scientific date related to important contemporary issues (e.g., global warming, stem cell research, cosmology), and ask informed questions about those issues. FA10 – BIO110 course competency form C5 = 3.3 Phone number _505-54545396	Measured)	described – rubric attached)			Priorities	
4. Students will apply quantitative analysis to scientific problems. FAI0 - BIO110 course competency form C4 = 3.5 Design and add math emphasis to all labs - do better assessment of student mathematics for most basic science courses. All Science labs will preparedness 9. Students will apply quantitative analyses of scientific observations. Students note: note: a Select and perform appropriate quantitative analyses of scientific observations. Students under-prepared in mathematics for most basic science courses. All Science labs will preparedness b. Show familiarity with the metric system, use a calculator to perform appropriate mathematical operations, and present results in tables and graphs. FAI0 - BIO110 course competency form C4 = 3.3 5. Students will apply scientific thinking to real world problems. Students should: a. Critically evaluate scientific reports or accounts presented in the opoular media. FAI0 - BIO110 course competency form C5 = 3.4 b. Understand the basic scientific facts related to important contemporary issues (e.g., global warming, stem cell research, cosmolegy), and ask informed questions about those issues. Spr1 - BIO111 course competency form C5 = 3.3 End - Laboratory Science Dr. Andrew Feldman Oct 28, 2011 Phone number _505-454-5306	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					
5. Students will apply scientific thinking to real world problems. Students should: FA10 – BIO110 course competency form C5= 3.4 Students should: Sudents should: a. Critically evaluate scientific reports or accounts presented in the popular media. SP11 – BIO111 course competency form C5 = 3.3 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. End – Laboratory Science Area III Assessment Contact Person Dr. Andrew Feldman Oct 28, 2011 Phone number _505-454-5306	 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 results in tables and graphs. 		FA10 – BIO110 course competency form C4 = 3.5 SP11 – BIO111 course competency form C4 = 3.3	Design and add math emphasis to all labs – do better assessment of student math preparedness	Students under-prepared in mathematics for most basic science courses. All Science labs will focus on introducing dimensional analysis, metric system, and scientific notation while also addressing basic math skills.	
Area III Assessment Contact Feison D1. Andrew Feidman Oct 26, 2011 Filone number 505-454-5500	 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. End – Laboratory Science 	Dr. Androy Feldman	FA10 – BIO110 course competency form C5= 3.4 SP11 – BIO111 course competency form C5 = 3.3	Oct 28, 2011 Phone number 505 4	4 5306	
Name Data	Area III Assessment Contact Person	Dr. Andrew Feldman		<u>Uct 28, 2011</u> Phone number <u>505-43</u>	54-5306	

Core Competencies Assessment 2010-2011: Area III Courses				
Luna Community College			Laboratory Science Competencies	
CHEN	M105/106 Intro to Chemistry 1	& 2	CHEM1114, CHE	M1224
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/
Measured)	described – rubric attached)			Priorities
 Students will describe the process of scientific inquiry. Students should: a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition, doctrine, or intuition. b. Students should value 	All Lab sciences administer pre- post tests, competency rating form and final grade reporting. FALL2010 : Intro Chem I n= 18, SP2011 : Intro Chem II n=5 One section of each course	FA10 – CHEM105 course competency form C1 = 2.72 Pre-test avg. 62% Post-test avg. 58.8% Avg. increase (-3,2%) 11%A, 33%B, 16%C, 16%D,11%F 11/18 completed course	Assessments not gauging actual student knowledge based on evaluation of assessment tools. Will continue current assessment practices, but train instructor to eliminate bias and increase rigor of assessment.	Assessment of CHEM 111 & 112 now being taught by different instructor to evaluate readiness of students who completed CHEM105 prior to CHEM111. Goal: to improve assessment practices in CHEM105.
science as a way to develop reliable knowledge about the world.		SP11 – BIO111 course competency form C1 = 3.25		Priority: hire more qualified faculty to deliver course.
 2. Students will solve problems scientifically. Students should: 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 isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories). 		FA10 – CHEM105 course competency form C2 = 2.5 SP11– CHEM106 course competency form C2 = 3.5 Pre-test avg. 48.25% Post-test avg. 82.75% Avg. increase 34.5% 40% A, 20% B, 20% C, 20% W 4/5 completed course		
3. Students will communicate scientific information. Students should: (Continued)		FA10 – CHEM105 course competency form C3 = 2.5 SP11– CHEM106 course competency form C3 = 3.25	Adding oral presentation of term paper to all lab science courses	

Core Competencies Assessment 2010-2011: Area III Courses					
Luna Community College			Laboratory Science Competencies		
CHEM1	05/106 Intro to Chemistry 1 &	2	CHEM1114, CHEM1224		
State Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used To	(Optional)	
(Learning Outcomes Being	(Process/Instrument named or		Make Improvements	Recommendations/Goals/	
Measured)	described – rubric attached)		wake improvements	Priorities	
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.)					
 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 results in tables and graphs. 		FA10 – CHEM105 course competency form C4 = 2.6 SP11– CHEM106 course competency form C4 = 3.5	Design and add math emphasis to all labs – do better assessment of student math preparedness	Students under-prepared in mathematics for most basic science courses. All Science labs will focus on introducing dimensional analysis, metric system, and scientific notation while also addressing basic math skills.	
 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. 		FA10 – CHEM105 course competency form C5 = 2.5 SP11– CHEM106 course competency form C5 = 3.25			
End – Laboratory Science					
Area III Assessment Contact Person <u>Dr. Andrew Feldman</u> <u>Name</u>			<u>Oct 28, 2011</u> Phone number <u>505-45</u> Date	04-5306	

Core Competencies Assessment 2010-2011: Area III Courses				
Luna Community College ENVS102 Environmental Science		Laboratory Science Competencies ENVS1114		Competencies
State Competencies(Learning Outcomes Being Measured)1. Students will describe the process of scientific inquiry.Students should:a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition, doctrine, or intuition.b. Students should value 	Assessment Procedures (Process/Instrument named or described – rubric attached) All Lab sciences administer pre- post tests, competency rating form and final grade reporting. FALL2010: ENVS102 Environmental Science n=8 SP2011: ENVS102 Sec01 n= 19 ENVS102 Sec02 n= 12	Assessment Results FA10 – ENVS102 course competency form C1 = 2.72 Pre-test avg. 66% Post-test avg. 71% Avg. increase 5% 25% A, 37% B, 2.5% C, 25% W 6/8 completed course SP11 – ENVS102-01 course competency form C1 = 2.9 SP11 – ENVS102-02 course	How Results Will Be Used <u>To Make Improvements</u> Pre-test lacks rigor; train instructor on preparing more inclusive pre-test for baseline of student knowledge coming into course. Continue current assessment practices.	(Optional) Recommendations/Goals/ Priorities Goal: to improve assessment practices in ENVS102 Priority: hire more qualified faculty to deliver course.
 2. Students will solve problems scientifically. Students should: 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 isolated observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories). 		competency form C1 = 3.7 Sp2011 – ENVS102-01 course competency form C1 = 2.72 Pre-test avg. 19.5% Post-test avg. 91.7% Avg. increase 72.2% 16% A, 37% B, 42% C, 5% D 18/19 completed course SP11 – ENVS102-01 course competency form C2 = 2.89 SP11 – ENVS102-02 course competency form C2 = 4.0	SP2011 - Section 01; Pre-post test scores inflated on post test; after evaluation of assessment instrument, instructor assessment noted to as insufficient at gauging student learning. Same instructor competency rating does not match with assigned grades- continue to work with instructor to develop fair and unbiased assessment practices for both objective and subjective measures.	
<i>5.</i> Students will communicate scientific information. Students should: (Continued)				

Core Competencies Assessment 2010-2011: Area III Courses				
Luna Community College ENVS102 Environmental Science		Laboratory Science Competencies ENVS1114		
State Competencies (Learning Outcomes Being Measured)	Assessment Procedures (Process/Instrument named or described – rubric attached)	Assessment Results	How Results Will Be Used ToMake Improvements	(Optional) Recommendations/Goals/ Priorities
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.)		SP11 – ENVS102-01 course competency form C3 = 3.05 SP11 – ENVS102-02 course competency form C3 = 3.9		
 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 results in tables and graphs. 		SP11 – ENVS102-01 course competency form C4 = 3.0 SP11 – ENVS102-02 course competency form C4 = 3.9 Sp2011 – ENVS102-02 Pre-test avg. 78% Post-test avg. 78% Post-test avg. 89% Avg. increase 11% 25% A, 50% B, 8% F, 16% W 9/12 completed course	Design and add math emphasis to all labs – do better assessment of student math preparedness	Students under-prepared in mathematics for most basic science courses. All Science labs will focus on introducing dimensional analysis, metric system, and scientific notation while also addressing basic math skills.
 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. 		SP11 – ENVS102-01 course competency form C5 = 3.0 SP11 – ENVS102-02 course competency form C5 = 3.9		
Area III Assessment Contact Person	Dr. Andrew Feldman		Oct 28, 2011 Phone number 505-4	54-5306