Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Class: Biology 113 – Biology for General Education Common Core No.: NMCCN BIOL 1114 Faculty: Larry Powell for Anne Luna and Lana Powell

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 process of scientific inquiry.	Ctudente werk through	In-class student work	We used a minimum of 70%	
Students should:	Students work through			Focus especially on scientific
a. Understand that scientists rely	problems via the Scientific	showed improvement during	for each competency as the	communication as well as
on evidence obtained from	Method and correlate	the course in their in-class	standard that we aspired to	maintaining emphasis on
observations rather than	historical scientific	exercises, problem sets, lab	reach and we exceeded that	scientific inquiry, problem
authority, tradition, doctrine, or intuition.	investigations to important	activities, and current	goal in each of the five	solving, quantitative analysis
b. Students should value science	concepts in Biology– In-class	biology topics.	competencies. All of our	and scientific thinking.
as a way to develop reliable	exercises, quizzes, lecture		competencies were down	
knowledge about the world.	exams	On the exit assessment test,	the year before last – which	
		student results were as	was a concern.	
		follows:	Competencies 1 and 2 had	
			the largest drops. To address	
		Comp. 1 = 95% correct (up	those drops, we emphasized	
		from 88% last year)	scientific inquiry and	
			scientific problem solving	
			this year. As a result,	
			competencies 1 and 2 did	
			see an increase over last two	
			years. Competencies 4 and 5	
			also had an increase this	
			year. Competency 3 was	
			down from last year and has	
			been down the last two	
			years. To turn that around,	
			we will especially emphasize	
			scientific communication	

Core Competencies Assessment 2010 – 2011 — Area III: Laboratory Science

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Common Core No.: NMCCN BIOL 1114

<u>Competencies</u> (Learning Outcomes Being Measured)	Assessment Procedures (Process/Instrument named or described – rubric attached)	Assessment Results	How Results Will Be Used <u>To Make Improvements</u>	(Optional) Recommendations/Goals/ Priorities
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).	The Scientific Method is used by students to solve problems and make observations using tools such as microscopes, electronic scales, Punnett Squares, hypotheses are constructed and tested – Lab reports, problem sets, quizzes, lecture exams	Comp. 2 = 93% correct (up from 74% last year)	next year, while maintaining emphasis on 1, 2, 4, and 5.	Priorities

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Competencies(Learning Outcomes Being Measured)3. Students will communicate scientific information.Students should: Communicate effectively about science (e.g., write lab reports in standard format and explain	Assessment Procedures (Process/Instrument named or described – rubric attached) Students communicate effectively about science – Lab reports, Biology in the News (current events	Assessment Results Comp. 3 = 74% correct (down from 81% last year)	How Results Will Be Used <u>To Make Improvements</u>	(Optional) Recommendations/Goals/ Priorities
basic scientific concepts, procedures, and results using written, oral, and graphic presentation techniques.)	reports), in-class presentations			
 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. 	Students perform calculations involving metrics, plant growth, energy, populations, and genetics – Charts, graphs, lab reports, problem sets, lecture exams	Comp. 4 = 95 % correct (up from 79% last year)		

Clovis Community College Core Competencies Assessment 2010 – 2011 — Area III: Laboratory Science

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5. Students will apply scientific thinking to real world problems. Students should:	Students critically evaluate current developments in	Comp. 5 = 95% correct (up from 89% last year)		
. Critically evaluate scientific eports or accounts presented in he popular media.	Biology, incorporating basic scientific fats to make their			
. Understand the basic scientific acts related to important ontemporary issues (e.g., global	evaluation – Biology in the News, in-class			
varming, stem cell research, osmology), and ask informed uestions about those issues.	presentations, class discussions			
End – Laboratory Science	A final assessment quiz that has questions that			
	specifically ties to each of the five competencies is			
	given at the end of the semester			
aculty Member Completing Ass	essment: Larry Powell	Jun	e 7, 2011 5	75-769-4919
		Name	Date	Phone Number

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Class: Biology 115 – Human Biology Common Core No.: NMCCN BIOL 1124

Faculty: Larry Powell and Lana Powell

Competencies (Learning Outcomes Being Measured)Assessment Procedures (Process/Instrument named or described – rubric attached)Assessment ResultsHow Results Will Be Used To Make Improvements(Optional) Recommendations/Goals/ Priorities1. Students will describe the process of scientific inquiry. Students should: a. Understand that scientists rely on evidence obtained from outhority, tradition, doctrine, or intuition.Students will investigate many examples in which scientists have developed reliable knowledge about the human body– In-class exercises, quizzes, lecture exams, labsStudent work showed satisfactory results for in- class exercises, problem sets, indicated by all competencies meeting our desired minimum score of 70%.A minimum of 70% correct for each competency was used as the standard that we aspired to reach. This year, all five competencies exceeded that mark. However, all competencies were down from last year except one (4, dealing with quantitative analysis) that areas as well as competency was down last year – it was up slightly this year. Because of these results, all competencies will beHow Results Will Be Used To Make Improvements(Optional) Recommendations/Goals/ Priorities			1	1	1
Measured)described – rubric attached)Priorities1. 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.Students will investigate many examples in which scientists have developed reliable knowledge about the human body– In-class exercises, quizzes, lecture exams, labsStudent work showed satisfactory results for in- class exercises, problem sets, lab activities, and discussions of current events in human anatomy and physiology as indicated by all competencies meeting our desired minimum score of 70%.A minimum of 70% correct for each competency was used as the standard that we aspired to reach. This year, all five competencies exceeded that mark. However, all competencies were down from last year except one (4, dealing with quantitative analysis) that was down last year – it was up slightly this year. Because of these results, allA minimum of 70% correct for each competency was used as the standard that we aspired to reach. This year, all five competencies exceeded that mark. However, all competencies were down from last year eras as well as competency areas as well as competency 4.	Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
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.Students will investigate many examples in which scientists have developed reliable knowledge about the human body- In-class exercises, quizzes, lecture as a way to develop reliable knowledge about the world.Students will investigate many examples in which scientists have developed reliable knowledge about the human body- In-class exercises, quizzes, lecture as a way to develop reliable knowledge about the world.Student swill investigate many examples in which scientists have developed reliable knowledge about the human body- In-class exercises, quizzes, lecture as a way to develop reliable knowledge about the world.Student swill investigate many examples in which scientists have developed reliable knowledge about the human body- In-class exercises, quizzes, lecture exams, labsStudent work showed satisfactory results for in- class exercises, problem sets, indicated by all competencies meeting our desired minimum score of 70%.A minimum of 70% correct for each competency was used as the standard that we aspired to reach. This year, all five competencies were down from last year except one (4, dealing with quantitative analysis) that was down last year - it was up slightly this year. Because of these results, allAll competencies above our 70% minimum. That's good, but we saw a fall in four out of five competencies were down from last year used as the standard that we all five competencies were down from last year - it was up slightly this year. Because of these results, all <td>(Learning Outcomes Being</td> <td>(Process/Instrument named or</td> <td></td> <td>To Make Improvements</td> <td>Recommendations/Goals/</td>	(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/
process of scientific inquiry. Students should: a. Understand that scientists rely on evidence obtained from observations rather than authority, tradition. b. Students should value science as a way to develop reliable knowledge about the world.Students will investigate many examples in which scientists have developed reliable knowledge about the human body– In-class exercises, quizzes, lecture exams, labsStudent work showed satisfactory results for in- class exercises, problem sets, lab activities, and discussions of current events in human anatomy and physiology as indicated by all competencies meeting our desired minimum score of 70%.A minimum of 70% correct for each competency was used as the standard that we aspired to reach. This year, all five competencies exceeded that mark.All competencies were in the r2 – 89 percent range – above our 70% minimum.b. Students should value science as a way to develop reliable knowledge about the world.Student should value science as a way to develop reliable knowledge about the world.Student should value science as a way to develop reliable knowledge about the world.A minimum of 70% correct for each competencies aspired to reach. This year, all five competencies exceeded that mark. However, all competencies were down from last year except one (4, dealing with quantitative analysis) that was down last year – it was up slightly this year. Because of these results, allAll competencies to more efforts in those four areas as well as competency 4.	Measured)	described – rubric attached)			Priorities
stressed an extra amount inComp. 1 = 72% correctthe coming year.(down from 85% last year)the coming year.	 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 science as a way to develop reliable 	Students will investigate many examples in which scientists have developed reliable knowledge about the human body– In-class exercises, quizzes, lecture	satisfactory results for in- class exercises, problem sets, lab activities, and discussions of current events in human anatomy and physiology as indicated by all competencies meeting our desired minimum score of 70%. On the exit assessment test, student results were as follows: Comp. 1 = 72% correct	for each competency was used as the standard that we aspired to reach. This year, all five competencies exceeded that mark. However, all competencies were down from last year except one (4, dealing with quantitative analysis) that was down last year – it was up slightly this year. Because of these results, all competencies will be stressed an extra amount in	All competencies were in the 72 – 89 percent range – above our 70% minimum. That's good, but we saw a fall in four out of five competencies this year from last year – which is discouraging, but will spur us to more efforts in those four areas as well as competency

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

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Common Core No.: NMCCN 1124

Compotonsios	According to Brocodings	Accorement Recults	How Results Will Be Used	(Ontional)
Competencies	Assessment Procedures	Assessment Results		(Optional) Recommendations/Goals/
(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	
Measured)	described – rubric attached)			Priorities
 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). 	Students will use current information to evaluate theories of anatomy and physiology in humans – Lab reports, problem sets, quizzes, lecture exams	Comp. 2 = 77% correct (down from 92% last year)		
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.)	Students will submit lab reports and discuss topics in current anatomy and physiology information and news– Lab reports, threaded discussions	Comp. 3 = 88% correct (down from 95% last year)		

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Page 3 of 4 Course: Biol 115 – Human Biology

Common Core No.: NMCCN 1124

Competencies (Learning Outcomes Being Measured)	Assessment Procedures (Process/Instrument named or described – rubric attached)	Assessment Results	How Results Will Be Used <u>To Make Improvements</u>	(Optional) Recommendations/Goals/ Priorities
 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. 	Students will perform calculations involving heart rate, nerve receptors, and reflexes – Charts, graphs, lab reports, problem sets, lecture exams	Comp. 4 = 89% correct (up from 88% last year)		

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Page 4 of 4 Course: Biol 115 – Human Biology

Common Core No.: NMCCN 1124

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Faculty Member Completing Assessment:

Name

Date

Phone Number

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Class: Chemistry 113 – Chemistry for General Education Common Core No.: NMCCN CHEM 1114 Faculty: Larry Powell for Don Clark, Carrie Phipps, Larry Powell

<u>Competencies</u>	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
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 science as a way to develop reliable knowledge about the world.	described – rubric attached) Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Chemistry (ex.: atomic models, stoichiometry, metrics) – In-class exercises,	Chemistry 113 classes did meet the 70% minimum success rate we want our students to reach. On the exit assessment test, student results were as follows:	We used a minimum of 70% correct for each competency as the standard that we aspired to reach. All competencies did reach that mark, and only competency 1 (process of scientific inquiry) was down from last year and that was by just one	Priorities We will reemphasize the importance of the process of scientific inquiry (competency 1) in our Chem. 113 classes next year. Our overall scores for competencies 2,3,4, and 5 showed improvement this year over last year so we will
	quizzes, lecture exams, labs	Comp. 1 = 81% correct (down from 82% last year)	point. To address that drop, we will stress scientific inquiry more in Chem. 113 next year. Additionally, we will continue to devote significant time to the mathematical aspects of chemistry throughout the semester – although there were good increases in those competencies, they are always areas of concern.	continue our successful teaching methods in those areas.

Core Competencies Assessment 2010 – 2011 — Area III: Laboratory Science

Page 2 of 4 Course: Chemistry 113

Common Core No.: Chem 1114

<u>Competencies</u>	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
 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). 	The Scientific Method will be used to solve problems and problems will be solved in the following areas: density, metrics, formula mass, per cent composition, balancing equations, stoichiometry – Lab reports, problem sets, quizzes, lecture exams	Comp. 2 = 97% (up from 90% last year)		
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.)	Students will submit lab reports and discuss current topics in Chemistry – Lab reports, Chemistry in the News reports and presentations	Comp. 3 = 92% (up from 70% last year)		

Core Competencies Assessment 2010 – 2011 — Area III: Laboratory Science

Page 3 of 4 Course: Chemistry 113

Common Core No.: Chem 1114

Competencies (Learning Outcomes Being	Assessment Procedures (Process/Instrument named or	Assessment Results	How Results Will Be Used To Make Improvements	(Optional) Recommendations/Goals/
Measured)	described – rubric attached)		<u> </u>	Priorities
 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. 	Students will perform Calculations throughout the course in areas listed above – Lab reports, problem sets, lecture exams	Comp. 4 = 93% (up from 84% last year)		

Core Competencies Assessment 2010 – 2011 — Area III: Laboratory Science

Page 4 of 4 Course: Chemistry 113

Common Core No.: Chem 1114

 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. 	Chemistry in the News reports and presentations A final assessment quiz that has questions that correlate to each of the five competencies is given at the end of the semester	Comp. 5 = 95% (up from 76% last year)	
End – Laboratory Science			

Name

Date

Phone Number

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Class: Geol 113 – Physical Geology Common Core No.: NMCCN GEOL 1114

Faculty: Larry Powell for Harry Pomeroy

Competencies (Learning Outcomes Being Measured)Assessment Procedures (Process/Instrument named or described – rubric attached)Assessment ResultsHow Results Will Be Used To Make Improvements(Optional) Recommendations/Goals/ Priorities1. 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.Students will work through problems using the Scientific method, specific historical examples will also be investigated that correlate to important concepts in Geology (ex.: theories of geologic phenomenon, origin of the Earth) – In-class exercises, quizzes, lecture exams, labsIn-class student work showed improvement during the course in their in-class activities, and discussions of indicated by every one of the competencies meeting our desired minimum score of 70%.All competencies were at or above the 70% mark – one just so – and all of the competencies were down from last year. To address this, all competencies were down from last year. To address this, all competencies were down from last year – just one point insource scores full on science classes) with quantitative operations – and that is a handicap in our courses. More time an effort woll need to take to make up for skills that frankly should have been learned in 12 years of public school.					
Measured)described – rubric attached)Priorities1. Students will describe the process of scientific inquiry. Students should: a. Understand that scientists rely on evidence obtained from authority, tradition, doctrine, or intuition.Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Geology (ex.: theories of geologic phenomenon, origin of the Earth) – In-class exercises, quizzes, lecture exams, labsIn-class student work showed improvement during the course in their in-class exercises, problem sets, lab activities, and discussions of current events in Geology as indicated by every one of the competencies meeting our origin of the Earth) – In-class exercises, quizzes, lecture exams, labsIn-class student work showed improvement during the course in their in-class exercises, problem sets, labAll competencies were at or above the 70% mark – one just so – and all of the competencies were down from last year. To address this, all competencies will be stressed more next year. Only one competencies meeting our desired minimum score of 70%.We used at minimum of 70% correct for each competency as the sand as last year – just one point lower. Students see not have problems (not just in this course, but across the board in science classes) with quantitative operations – and that is a handicap in our courses. More time an effort will need to be taken to make up for skills hat frankly should have been learned in 12 years of publicAll competencies were at or above the 70% standard that we sought this year. However, there were declines in all competencies were down from last year – one justs on and all of the c	Competencies	Assessment Procedures	Assessment Results	How Results Will Be Used	(Optional)
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. Students should value science as a way to develop reliable knowledge about the world. Students should value science as a way to develop reliable knowledge about the world. Students should value science as a way to develop reliable knowledge about the world. Students should value science as a way to develop reliable knowledge about the world. Students should value science as a way to develop reliable knowledge about the world. Method, specific historical examples will abs In-class student work should walue science as a way to develop reliable knowledge about the world. All competencies were at or above the course in their in-class exercises, problem sets, lab and idscussions of geology (ex.: theories of geology (ex.: theories of geology (ex.: theories of geology, exams, labs Method, specific historical examples will abs All competencies were down from last were as indicated by every one of the same as last year - out the same as last year - out the same as last year - just one point lower. Students seem that we sought the same as last year - just one point lower. Students seem to have problems (not just in this course, but across the boat in science af ollows: All competencies were at or above the course in their in-class student results were as follows: 0 The text assessment test, student results were as follows: Comp. 1 = 82% correct (down from 93% last year) Students trankly should have been learned in 12 years of public <td>(Learning Outcomes Being</td> <td>(Process/Instrument named or</td> <td></td> <td>To Make Improvements</td> <td>Recommendations/Goals/</td>	(Learning Outcomes Being	(Process/Instrument named or		To Make Improvements	Recommendations/Goals/
process of scientific inquiry. Students should:Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Geology (ex.: theories of geologic phenomenon, origin of the Earth) – In-class exercises, quizzes, lecture exams, labsIn-class student work showed improvement during the course in their in-class exercises, problem sets, lab activities, and discussions of current events in Geology as indicated by every one of the competencies meeting our desired minimum score of 70%.We used at minimum of 70% correct for each competencies at least hat we aspired to reach. All competencies were down from last year. To address this, all competencies meeting our origin of the Earth) – In-class exercises, quizzes, lecture exams, labsIn-class student work showed improvement during the course in their in-class exercises, problem sets, lab activities, and discussions of rom last year. To address this, all competencies meeting our origin of the Earth) – In-class exercises, quizzes, lecture exams, labsWe used at minimum of 70% correct for each competencies area correct for each competencies area the 70% mark – one just so – and all of the competencies were down from last year. To address this, all competencies meeting our orgin of the Earth) – In-class exercises, quizzes, lecture exams, labsMe used at minimum of 70% correct for each competency as the standard that we aspired to reach. All competencies were down form last year. To address this, all competencies were ho have problems (not just in this course, but across the board in science classes) with quantitative operations – and that is a handicap in our courses. More time an effort will ne	Measured)	described – rubric attached)			Priorities
	 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 science as a way to develop reliable 	Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Geology (ex.: theories of geologic phenomenon, origin of the Earth) – In-class exercises, quizzes, lecture	showed improvement during the course in their in-class exercises, problem sets, lab activities, and discussions of current events in Geology as indicated by every one of the competencies meeting our desired minimum score of 70%. On the exit assessment test, student results were as follows: Comp. 1 = 82% correct	correct for each competency as the standard that we aspired to reach. All competencies reached at least the 70% mark – one just so – and all of the competencies were down from last year. To address this, all competencies will be stressed more next year. Only one competency (3) was almost the same as last year – just one point lower. Students seem to have problems (not just in this course, but across the board in science classes) with quantitative operations – and that is a handicap in our courses. More time an effort will need to be taken to make up for skills that frankly should have been learned in 12 years of public	All competencies were at or above the 70% standard that we sought this year. However, there were declines in all competencies this

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Page 2 of 4 Course: Geol 113 – Physical Geology

Common Core No.: NMCCN GEOL 1114

<u>Competencies</u>	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
 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). 	The Scientific Method will be used to solve problems and problems will be solved in the following areas: "present is the key to the past exercises, geologic structure formation – Lab reports, problem sets, quizzes, lecture exams	Comp. 2 = 79% correct (down from 87% last year)		
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.)	Students will submit lab reports and discuss current topics in Geology – reports and presentations on geological topics such as local topography, hydrology, volcano formation, tsunamis	Comp. 3 = 89% correct (down from 90% last year)		

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

Page 3 of 4 Course: Geol 113 – Physical Geology

Common Core No.: NMCCN GEOL 1114

Competencies (Learning Outcomes Being	Assessment Procedures (Process/Instrument named or	Assessment Results	How Results Will Be Used To Make Improvements	(Optional) Recommendations/Goals/
Measured)	described – rubric attached)		<u></u>	Priorities
 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. 	Students will perform calculations throughout the course in areas including earthquake intensity, isotope half-life, radiocarbon dating	Comp. 4 = 76% correct (down from 80% last year)		

Core Competencies Assessment 2010 - 2011—Area III: Laboratory Science

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Common Core No.: NMCCN GEOL 1114

 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. 	Current topics in Geology – through lecture and student discussions A final assessment quiz that has questions that correlate to each of the five competencies is given at the end of the semester	Comp. 5 = 70% correct (down from 80% last year)		
End – Laboratory Science Faculty Member Completing Ass	essment: Larry Powell	lun	e 7, 2011 57	5-769-4919

 Faculty Member Completing Assessment:
 Larry Powell
 June 7, 2011
 575-769-4919

 Name
 Date
 Phone Number

Core Competencies Assessment 2020-2011 — Area III: Laboratory Science

Class: Physics 113 – Physics for General Education

Faculty: Larry Powell for Carl Armstrong

Common Core No.: NMCCN General Education Elective Area III

<u>Competencies</u>	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) 1. Students will describe the	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 reliable knowledge about the world. 	Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Physics (ex.: velocity, acceleration, mass, force, momentum, temperature, frequency, light, electricity) – In-class exercises, quizzes, lecture exams, labs	In-class student work (in- class exercises, problem sets, lab activities, and discussions of current events in Physics) indicated that all but two of the competencies met our desired minimum score of 70%. On the exit assessment test, student results were as follows: Comp. 1 = 50% correct, down from 75% correct last year	We used at minimum of 70% correct for each competency as the standard that we aspired to reach. All but two of the competencies met that minimum. The results will be used to address these problem areas: - Some difficulty using equations More time will be spent emphasizing how to perform the calculations. Students made mistakes based on "common sense". They failed to appreciate the subtle differences between what one would expect to be the case versus what actually happens in the physical world,	One of the most significant problems faced by students in Physics 113 is that they are not comfortable using math. More emphasis will be placed on calculations (especially in the lab setting) next year. In addition, Mr. Armstrong will continue to point out and emphasize the reality of when, where, and how one would expect to occur conflicts with what actually occurs in the physical world.
 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 Bevised: 03/02/09 	The Scientific Method will be used to solve problems and problems will be solved in the following areas: masses, temperature, specific heat in lab reports, problem sets, quizzes,	Comp. 2 = 80% correct, up from 70% correct last year		

Revised: 03/02/09

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Page 2 of 3 Course: Physics 113 – Physics for General Ed

Common Core No.: NMCCN Gen Ed Elective Area III

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
observations about the physical universe and relate them to hierarchically organized explanatory frameworks (theories).	lecture exams			
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.)	Students will submit lab reports and discuss current topics in Physics – reports and presentations on topics such as ohms, resistors, series circuits, voltage, DC power	Comp. 3 = 77% correct, down from 88% correct last year		
 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. 	Students will perform calculations throughout course in areas dealing with light and index of refraction and Snell's Law	Comp. 4 = 64% correct, down from 70% correct last year		

All class assessment forms are due to your division chair by July 1.

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Page 3 of 3 Course: Physics 113 – Physics for General Ed

Common Core No.: NMCCN Gen Ed Elective Area III

 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. 	Current topics in Physics – through lecture and student discussions A final assessment quiz that has questions that correlate to each of the five competencies is given at the end of the semester	Comp. 5 = 80% correct, down from 88% correct last year	
End – Laboratory Science			

Name

Date

Phone Number

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Class: Physics 151 and 152 General Physics I and II and Lab Common Core No.: NMCCN Phys 1114 and Phys 1124 Faculty: Larry Powell for Carl Armstrong

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 reliable knowledge about the world. 	Students will work through problems using the Scientific Method, specific historical examples will also be investigated that correlate to important concepts in Physics (ex.: electrical circuits, moles, magnetic fields, lenses) – In-class exercises, quizzes, lecture exams, labs	In-class student work (in- class exercises, problem sets, lab activities, and discussions of current events in Physics) indicated that all of the competencies met our desired minimum score of 70%. On the exit assessment test, student results were as follows: Comp. 1 = 75% correct, down from 92% correct last year	We used at minimum of 70% correct for each competency as the standard that we aspired to reach. All results were above that minimum, although all were down from last year's results. The results will be used to address these areas: - Dealing with thermodynamics - Charged particles being accelerated by a potential difference and then moving in a magnetic field.	All outcomes were positive and above the 70% mark we were shooting for – there were some lower scores than last year and some higher. Emphasis will continue on quantitative problems next year.
 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 	The Scientific Method will be used to solve problems and problems will be solved in the following areas: DC circuit, resistance, ohms in lab reports, problem sets, quizzes, lecture exams	Comp. 2 = 80% correct, down from 81% correct last year		

Revised: 03/02/09

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Page 2 of 4 Course: Physics 151 and 152

Common Core No.: NMCCN Phys 1114 and 1124

<u>Competencies</u>	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) physical universe and relate	described – rubric attached)			Priorities
them to hierarchically				
organized explanatory				
frameworks (theories).				
3. Students will communicate				
scientific information.	Students will submit lab	Comp. 3 = 91% correct, up		
Students should: Communicate effectively about	reports and discuss current	from 87% correct last year		
science (e.g., write lab reports in	topics in Physics – reports			
standard format and explain	and presentations on topics			
basic scientific concepts, procedures, and results using	such as ions, charges,			
written, oral, and graphic	potential differences,			
presentation techniques.)	velocity vectors, and			
	magnetic fields			
4. Students will apply				
quantitative analysis to scientific problems.	Students will perform	Comp. 4 = 71% correct, down		
Students should:	calculations throughout	from 78% correct last year		
a. Select and perform appropriate	course in areas dealing with			
quantitative analyses of scientific	converging lenses,			
observations.	inverted and upright			
 b. Show familiarity with the metric system, use a calculator to perform 	images, virtual and			
appropriate mathematical	real images, overall			
operations, and present results in	magnification, images			
tables and graphs.	created by mirrors,			

All class assessment forms are due to your division chair by July 1.

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Page 3 of 4 Course: Physics 151 and 152

Common Core No.: NMCCN Phys 1114 and 1124

<u>Competencies</u> (Learning Outcomes Being Measured)	Assessment Procedures (Process/Instrument named or described – rubric attached)	Assessment Results	How Results Will Be Used <u>To Make Improvements</u>	(Optional) Recommendations/Goals/ Priorities
Wiedsuredy	convex mirrors			inonites

Core Competencies Assessment 2010-2011—Area III: Laboratory Science

Page 4 of 4 Course: Physics 151 and 152

Common Core No.: NMCCN Phys 1114 and 1124

 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. 	Current topics in Physics – through lecture and student discussions A final assessment quiz that has questions that correlate to each of the five competencies is given at the end of the semester	Comp. 5 = 98% correct, up from 91% correct last year	
End – Laboratory Science			

Faculty Member Completing Assessment:	Larry Powell	June 7, 2011	<u>575-769-4919</u>
	Name	Date	Phone Number