



PROGRAM REVIEW – CURRICULUM REVIEW
2015-16

Physics

Courses with CID Designation

Course Name	CID #	CID Name	COR Effective Term
PHYS G120	PHYS 105	Algebra/Trigonometry-Based Physics A	S2012
PHYS G120 + PHYS G125	PHYS 100S	Algebra/Trigonometry-Based Physics: AB	F2009
PHYS G125	PHYS 110	Algebra/Trigonometry-Based Physics B	F2011
PHYS G185	PHYS 205	Calculus-Based Physics for Scientists and Engineers: A	S2012
PHYS G280	PHYS 210	Calculus-Based Physics for Scientists and Engineers: B	F2014
PHYS G285	PHYS 215	Calculus-Based Physics for Scientists and Engineers: C	F2014

Dual Listed Courses

Course Name	Dual Listed
N/A	

List of Active Courses offered or not offered in the last 3 years

Course Name	2012-2013			2013-2014			2014-2015		
	Summer	Fall	Spring	Summer	Fall	Spring	Summer	Fall	Spring
PHYS G110		X	X		X	X		X	X
PHYS G111		X	X		X	X		X	X
PHYS G120		X			X			X	
PHYS G125			X			X			X
PHYS G185		X	X		X	X		X	X
PHYS G280		X			X	X			X
PHYS G285			X			X		X	



PROGRAM REVIEW – SLO ASSESSMENTS 2015-16

Discipline

*Assessment status reflects assessments between Fall 2013 through Summer 2015

Assessment status for courses with active cSLOs

Course Name	# of cSLOs	# of cSLOs Assessed	Status
PHYS G110	4	0	↓
PHYS G111	3	0	↓
PHYS G120	3	0	↓
PHYS G120L	3	0	↓
PHYS G125	4	0	↓
PHYS G185	5	2	↔
PHYS G280	5	3	↔
PHYS G280L	4	0	↓
PHYS G285	9	0	↓
PHYS G285L	4	0	↓

- ↑ Fully assessed
- ↔ Partially assessed
- ↓ No assessment

Courses with cSLOs that still needs to be assessed

Course Name	cSLO #	cSLO
PHYS G110	cSLO 1	Describe the following: the relationship of work and energy, the various types of energy, the application of the conservation of energy to conceptual questions, the postulates of special relativity and the changes in matter that occur as velocity increases, various types of mechanical waves, a standing wave and its application to music, similarities and differences between the electric field and the magnetic field, the three main types of nuclear emissions, and two main areas of research in fusion reactor design.
PHYS G110	cSLO 2	Demonstrate knowledge of Newton's 3 Laws of Motion, electrical generation regarding Faraday's Law, the role of fission in a nuclear bomb and a nuclear reactor, and the role of fusion in a nuclear bomb.
PHYS G110	cSLO 3	Apply the following: momentum laws to answer conceptual questions and Coulomb's Law to answer conceptual questions about electrical force.
PHYS G110	cSLO 4	Explain role of interference in the formation of a standing wave; the role of Fourier analysis in the role of pitch, quality, and digital music; the difference between electrical potential energy and electric potential; the relationship between voltages, resistances, and currents in series and parallel circuits; the relationship between voltages, resistances, and currents in series and parallel circuits; and the theory of operation of an electrical transformer.
PHYS G111	cSLO 1	Describe various phenomena associated with the subject discussed in Physics 110.
PHYS G111	cSLO 2	Generate a written report describing his/her observations.
PHYS G111	cSLO 3	Explain observations based upon current physics theory.
PHYS G120	cSLO 1	Demonstrate problem solving skills involving constant acceleration equations and Newton's Laws.
PHYS G120	cSLO 2	Solve problems involving energy and energy transfer and momentum.
PHYS G120	cSLO 3	Apply algebra to solve problems involving fluid dynamics and thermodynamics.
PHYS G120L	cSLO 1	Demonstrate problem solving skills involving constant acceleration equations and Newton's Laws.
PHYS G120L	cSLO 2	Solve problems involving energy and energy transfer and momentum.
PHYS G120L	cSLO 3	Apply algebra to solve problems involving fluid dynamics and thermodynamics.
PHYS G125	cSLO 1	Solve problems involving electromagnetic theory.
PHYS G125	cSLO 2	Solve problems involving circuit theory.
PHYS G125	cSLO 3	Solve problems involving geometrical optics.
PHYS G125	cSLO 4	Solve problems involving nuclear physics.
PHYS G185	cSLO 2	Solve problems involving Newton's Laws using calculus.
PHYS G185	cSLO 3	Solve problems involving energy and energy transfer using calculus.

Courses with cSLOs that still needs to be assessed

Course Name	cSLO #	cSLO
PHYS G185	cSLO 4	Solve problems involving momentum using calculus.
PHYS G280	cSLO 3	Solve problems involving magnetic fields using calculus.
PHYS G280	cSLO 5	Solve problems involving Maxwell's equations using calculus.
PHYS G280L	cSLO 1	Demonstrate understanding of the basic concepts involved in estimating experimental uncertainties and performing an error analysis, including propagation of errors for actual experimental data collected in the lab.
PHYS G280L	cSLO 2	Use various electrical meters, including ammeters, voltmeters, ohmmeters, and the oscilloscope to make electrical measurements.
PHYS G280L	cSLO 3	Employ simple wiring techniques to construct electrical circuits using resistors, capacitors, and inductors for both DC and AC circuits from circuit diagrams.
PHYS G280L	cSLO 4	Construct an accurate record of laboratory work in a notebook and extract information from that record that can be used to write a lab report, just as experimental scientists do when reporting results to a journal for publication.
PHYS G285	cSLO 1	Solve problems involving thermodynamics using calculus.
PHYS G285	cSLO 2	Solve problems involving optics using calculus.
PHYS G285	cSLO 3	Solve problems involving quantum mechanics and special relativity.
PHYS G285	cSLO 4	Solve problems involving Newton's Law of gravity using calculus.
PHYS G285	cSLO 5	Solve problems involving fluid mechanics using calculus.
PHYS G285	cSLO 6	Demonstrate understanding of the basic concepts involved in estimating experimental uncertainties and performing an error analysis, including propagation of error for actual experimental data collected in lab.
PHYS G285	cSLO 7	Use various types of equipment for the purpose of making measurements related to temperature and thermodynamics.
PHYS G285	cSLO 8	Employ various types of equipment for the purpose of making measurements related to light and optics, including lasers.
PHYS G285	cSLO 9	Construct an accurate record of laboratory work in a notebook and extract information from that record that can be used to write a lab report, just as experimental scientists do when reporting results to a journal for publication.
PHYS G285L	cSLO 1	Demonstrate understanding of the basic concepts involved in estimating experimental uncertainties and performing an error analysis, including propagation of errors for actual experimental data collected in the lab.
PHYS G285L	cSLO 2	Use various types of equipment for the purpose of making measurements related to temperature and thermodynamics.
PHYS G285L	cSLO 3	Employ various types of equipment for the purpose of making measurements related to light and optics, including lasers.
PHYS G285L	cSLO 4	Construct an accurate record of laboratory work in a notebook and extract information from that record that can be used to write a lab report, just as experimental scientists do when reporting results to a journal for publication.

Courses Assessed and their Action Plans

Course Name	cSLO #	Semester Assessed	Action Plans
PHYS G185	cSLO 1	2013 - 2014 (Spring 2014)	I will change the way I give tests in the future, going from the traditional problem solving (problems similar to the homework) method of examining students to a multiple choice format for exams from a test bank provided by the publisher that is essentially a regurgitation of the textbook since most of my students cannot think creatively or solve traditional problems anyway due to their poor study skills and command of the English language.

Courses Assessed and their Action Plans

Course Name	cSLO #	Semester Assessed	Action Plans
PHYS G185	cSLO 5	2014 - 2015 (Fall 2014)	I will change the way I give tests in the future, going from the traditional problem solving (problems similar to the homework) method of examining students to a multiple choice format for exams from a test bank provided by the publisher that is essentially a regurgitation of the textbook since most of my students cannot think creatively or solve traditional problems anyway due to their poor study skills and command of the English language.
PHYS G185	cSLO 5	2013 - 2014 (Fall 2013)	Enacting "changes in teaching, standards, and/or assessment methods" has NOTHING to do with improving student learning in this course. Students are receiving excellent instruction, they have an excellent text written with great care and precision, and they have a plethora of ancillary materials for help. What they need to improve student learning should have occurred long before their "college" career: the development of a mind that has experienced the process of learning through disciplined study and communication through clear precise writing.
PHYS G280	cSLO 1	2013 - 2014 (Spring 2014)	Enacting "changes in teaching, standards, and/or assessment methods" has NOTHING to do with improving student learning in this course. Students are receiving excellent instruction, they have an excellent text written with great care and precision, and they have a plethora of ancillary materials for help. What they need to improve student learning should have occurred long before their "college" career: the development of a mind that has experienced the process of learning through disciplined study and communication through clear precise writing.
PHYS G280	cSLO 2	2013 - 2014 (Spring 2014)	Enacting "changes in teaching, standards, and/or assessment methods" has NOTHING to do with improving student learning in this course. Students are receiving excellent instruction, they have an excellent text written with great care and precision, and they have a plethora of ancillary materials for help. What they need to improve student learning should have occurred long before their "college" career: the development of a mind that has experienced the process of learning through disciplined study and communication through clear precise writing.
PHYS G280	cSLO 4	2014 - 2015 (Spring 2015)	Instructor Comments include the following: Overall, I was very surprised with the success rate of this SLO assessment. I was pleased with the students' abilities to correctly set up the equations. I put these in a separate portions of the exam, so based on the fact that they had no "indicators" that they should use a particular method, this assessment shows that students have the ability to select the appropriate method. Stress that these problems are typical problems that satisfy the given SLO of the course and show them the common mistakes that may be made. Discussions with the department faculty from other campuses will continue to determine best practices and assessment of more challenging SLO problems. The SLO was well written and due to the importance of the topic, this SLO should be tested on in the future. I am happy with the number of students who completed the assessment. To help the students who did NOT complete the assessment, I will emphasize the importance of the basics. I will also dedicate one full lecture to this section of the textbook, rather than devoting half a lecture.