

Course Student Learning Outcomes Assessment

PHYS 150A Introductory Physics I

**Created on: 10/22/2013 12:55:00 PM PST
Last Modified: 03/13/2015 09:32:16 AM PST**

Table of Contents

General Information	1
Standing Requirements	2
Course Description.....	2
Course Student Learning Outcomes.....	2
2014-2015 Assessment Cycle	3
Measurements.....	3
Findings.....	3
Plans of Action.....	5
Status Reports.....	5
2013-2014 Assessment Cycle	6
Measurements.....	6
Findings.....	6
Plans of Action.....	8
Status Reports.....	8
2012-2013 Assessment Cycle	9
Measurements.....	9
Findings.....	9
Plans of Action.....	9
Status Reports.....	9

General Information (Course Student Learning Outcomes Assessment)

Standing Requirements

📖 Course Description

A trigonometry-based physics course. Topics include: mechanics thermodynamics fluids oscillatory motion and sound. Students that have successfully completed Physics 210 or Physics 279 may not enroll in Physics 150A.

📖 Course Student Learning Outcomes

PHYS 150A Introductory Physics I Outcome Set

Outcome	
Outcome	Mapping
Outcome 1 Analyze and solve problems using the concepts and mathematical equations of mechanics, fluids, waves, and thermodynamics.	Institutional Student Learning Outcomes: Communicate 1, Communicate 2, Communicate 3, Learn 1, Learn 2, Think 1, Think 2
Outcome 2 Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.	Institutional Student Learning Outcomes: Act 1, Act 2, Communicate 1, Communicate 2, Communicate 3, Learn 1, Learn 2, Learn 3, Think 1, Think 2

2014-2015 Assessment Cycle

Measurements

Outcomes and Measures

PHYS 150A Introductory Physics I Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of mechanics, fluids, waves, and thermodynamics.

▼ **Measure:** Physics 150A - SLO 1
Course level; Direct - Exam

Description of Measurement Tool: A comprehensive final exam consisting of 30 multiple choice questions.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they answer 70% of the 30 questions correctly.

The class is successful when 70% of the students are successful in meeting the outcome.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions, scoring the assessment, and collecting the assessment data.

Outcome 2

Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.

▼ **Measure:** Physics 150A - SLO 2
Course level; Direct - Student Artifact

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. Nine lab reports were assigned to twenty-one students.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they submit at least one laboratory report that has no errors.

A class is successful if at least 70% of the laboratory reports have no significant errors.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for administering this assessment and compiling the assessment data.

Findings

Finding per Measure

PHYS 150A Introductory Physics I Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical

▼ **Measure:** Physics 150A - SLO 1
Course level; Direct - Exam

equations of mechanics, fluids, waves, and thermodynamics.

Description of Measurement Tool: A comprehensive final exam consisting of 30 multiple choice questions.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they answer 70% of the 30 questions correctly.

The class is successful when 70% of the students are successful in meeting the outcome.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions, scoring the assessment, and collecting the assessment data.

Findings for Physics 150A - SLO 1

Summary of Findings: 17 out of 24 students or 71% of the class scored above 70%. The average score was 75.00%

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: These results indicate that when students are given a large number of problems, they are correctly able to identify which problem solving technique should be applied.

Recommendations:

Outcome 2

Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.

▼ Measure: Physics 150A - SLO 2 Course level; Direct - Student Artifact

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. Nine lab reports were assigned to twenty-one students.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they submit at least one laboratory report that has no errors.

A class is successful if at least 70% of the laboratory reports have no significant errors.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for administering this assessment and compiling the assessment data.

Findings for Physics 150A - SLO 2

Summary of Findings: 24 students turned in lab report.

11 Students lab report contained no errors.

10 Students missed one of the 4 areas assessed.

3 Students missed two of the 4 areas assessed.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: Since 21 out of 24 students made one or less errors on their lab reports, it indicates that the students have met the objective.

Recommendations:

Overall Recommendations

Students continue to be successful on both outcomes in Physics 150A. No changes are needed at this time.

 **Plans of Action**

 **Status Reports**

2013-2014 Assessment Cycle

Measurements

Outcomes and Measures

PHYS 150A Introductory Physics I Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of mechanics, fluids, waves, and thermodynamics.

▼ **Measure:** Physics 150A - SLO 1
Course level; Direct - Exam

Description of Measurement Tool: A comprehensive final exam consisting of 30 multiple choice questions.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they answer 70% of the 30 questions correctly.

The class is successful when 70% of the students are successful in meeting the outcome.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions, scoring the assessment, and collecting the assessment data.

Outcome 2

Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.

▼ **Measure:** Physics 150A - SLO 2
Course level; Direct - Student Artifact

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. Nine lab reports were assigned to twenty-one students.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they submit at least one laboratory report that has no errors.

A class is successful if at least 70% of the laboratory reports have no significant errors.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for administering this assessment and compiling the assessment data.

Findings

Finding per Measure

PHYS 150A Introductory Physics I Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical

▼ **Measure:** Physics 150A - SLO 1
Course level; Direct - Exam

equations of mechanics, fluids, waves, and thermodynamics.

Description of Measurement Tool: A comprehensive final exam consisting of 30 multiple choice questions.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they answer 70% of the 30 questions correctly.

The class is successful when 70% of the students are successful in meeting the outcome.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions, scoring the assessment, and collecting the assessment data.

Findings for Physics 150A - SLO 1

Summary of Findings: 18 out of 25 students or 72% of the class scored above 70%. The average score was 75.33%

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: These results indicate that when students are given a large number of problems, they are correctly able to identify which problem solving technique should be applied.

Recommendations: These results are very promising since this is the first time that this course was ever offered. This method of assessment should be used again during Fall 2014 to determine if the results will be similar.

Outcome 2

Investigate physical phenomena using appropriate equipment and methods, make valid comparisons with theoretical predictions, and communicate those results.

▼ Measure: Physics 150A - SLO 2 Course level; Direct - Student Artifact

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. Nine lab reports were assigned to twenty-one students.

Criteria for Success: Individual & Collective Student Criterion: A student is successful if they submit at least one laboratory report that has no errors.

A class is successful if at least 70% of the laboratory reports have no significant errors.

Cycle of Assessment: The outcome is assessed every fall semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for administering this assessment and compiling the assessment data.

Findings for Physics 150A - SLO 2

Summary of Findings: 100% of the students were able to turn in at least one lab report that was complete—no errors—during the semester.

73% of the students were able to turn in lab reports with minimal errors consistently throughout the semester.

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: The fact that almost all of the students were able to turn in a lab report without errors indicates that the students understand what is expected of them in a lab report. The fact that students are not consistent with their lab reports indicates a lack of diligence.

Recommendations: Use the same assessment method in Fall 2014 to confirm that these results will be consistent.

Overall Recommendations

The initial assessment results were very good. The data set is not large enough to know yet if this class was unique. The assessments will need to be carried out in Fall 2014 and then the results should be compared to Fall 2013.

 **Plans of Action**

 **Status Reports**

2012-2013 Assessment Cycle

 **Measurements**

 **Findings**

 **Plans of Action**

 **Status Reports**