

Course Student Learning Outcomes Assessment

PHYS 150B Introductory Physics II

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General Information (Course Student Learning Outcomes Assessment)

Standing Requirements

📖 Course Description

A trigonometry-based physics course. Topics include: light electricity magnetism and modern physics. Students that have successfully completed Physics 211 or Physics 289 may not enroll in Physics 150B.

📖 Course Student Learning Outcomes

PHYS 150B Introductory Physics II Outcome Set

Outcome	
Outcome	Mapping
Outcome 1 Analyze and solve problems using the concepts and mathematical equations of electricity and magnetism, light, special relativity, and quantum mechanics.	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 150B Introductory Physics II Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of electricity and magnetism, light, special relativity, and quantum mechanics.

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

Description of Measurement Tool: Students were given a 45 questions comprehensive exam.

Criteria for Success: Individual & Collective Student Criterion: Students must score 70% or higher to be successful.

A course is successful if 70% of students reach the success level.

Cycle of Assessment: The course is assessed each spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions and giving the assessment. The department chair is responsible for entering the results.

Outcome 2

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

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

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. .

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

A course is successful if 70% of students reach the success level.

Cycle of Assessment: This course is assessed every spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for the assessment. The department chair is enters the results into Taskstream.

Findings

Finding per Measure

PHYS 150B Introductory Physics II Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of electricity and magnetism, light, special

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

Description of Measurement Tool: Students were given a 45 questions comprehensive exam.

relativity, and quantum mechanics.

Criteria for Success: Individual & Collective Student Criterion: Students must score 70% or higher to be successful.

A course is successful if 70% of students reach the success level.

Cycle of Assessment: The course is assessed each spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions and giving the assessment. The department chair is responsible for entering the results.

Findings for Physics 150B - SLO 1

Summary of Findings: 13 out of 18 students or 72% of the class scored above 70%. The average score was 71%

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: These results indicate that when students are given a variety of problems covering a wide range of topics, the students are correctly able to apply the problems solving steps they have learned.

Recommendations: The outcome continues to be met, so no changes are needed at this time.

Outcome 2

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

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

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. .

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

A course is successful if 70% of students reach the success level.

Cycle of Assessment: This course is assessed every spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for the assessment. The department chair is enters the results into Taskstream.

Findings for Physics 150B - SLO 2

Summary of Findings: 100% (18 out of 18) of the students were able to turn in at least one lab report that was complete—no errors—during the semester.

18 out of 18 students, 100%, 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 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 consistent with the quality of lab report indicates diligence.

Recommendations: Students in second semester usually do better in lab than they did in the first. These results are consistent with the expected performance and no changes are needed at this time.

Overall Recommendations

Both outcomes were achieved for a second straight year and no changes are planned at this time.

 **Plans of Action**

 **Status Reports**

2013-2014 Assessment Cycle

Measurements

Outcomes and Measures

PHYS 150B Introductory Physics II Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of electricity and magnetism, light, special relativity, and quantum mechanics.

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

Description of Measurement Tool: Students were given a 45 questions comprehensive exam.

Criteria for Success: Individual & Collective Student Criterion: Students must score 70% or higher to be successful.

A course is successful if 70% of students reach the success level.

Cycle of Assessment: The course is assessed each spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions and giving the assessment. The department chair is responsible for entering the results.

Outcome 2

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

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

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. .

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

A course is successful if 70% of students reach the success level.

Cycle of Assessment: This course is assessed every spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for the assessment. The department chair is enters the results into Taskstream.

Findings

Finding per Measure

PHYS 150B Introductory Physics II Outcome Set

Outcome

Outcome 1

Analyze and solve problems using the concepts and mathematical equations of electricity and magnetism, light, special

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

Description of Measurement Tool: Students were given a 45 questions comprehensive exam.

relativity, and quantum mechanics.

Criteria for Success: Individual & Collective Student Criterion: Students must score 70% or higher to be successful.

A course is successful if 70% of students reach the success level.

Cycle of Assessment: The course is assessed each spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for choosing the questions and giving the assessment. The department chair is responsible for entering the results.

Findings for Physics 150B - SLO 1

Summary of Findings: 12 out of 15 students or 80% of the class scored above 70%. The average score was 75%

Results: Criteria for Success Achievement Status: Met

Analysis of Findings: These results indicate that when students are given a variety of problems covering a wide range of topics, the students are correctly able to apply the problems solving steps they have learned.

Recommendations:

Outcome 2

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

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

Description of Measurement Tool: Students are required to turn in a written lab report with each experiment. .

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

A course is successful if 70% of students reach the success level.

Cycle of Assessment: This course is assessed every spring semester.

Who is Responsible for Assessment Activity?: The instructor of record is responsible for the assessment. The department chair is enters the results into Taskstream.

Findings for Physics 150B - 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.

14 out of 15 students, 93%, 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 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 consistent with the quality of lab report indicates diligence.

Recommendations:

Overall Recommendations

This first offering of Physics 150B was successful. We will continue to assess the course each year to ensure the success levels are maintained or increased.

 **Plans of Action**

 **Status Reports**

2012-2013 Assessment Cycle

 **Measurements**

 **Findings**

 **Plans of Action**

 **Status Reports**