2017-2018 Assessment Cycle COS_Physics MS

Mission (due 12/4/17)

University Mission

The University of Louisiana at Lafayette offers an exceptional education informed by diverse worldviews grounded in tradition, heritage, and culture. We develop leaders and innovators who advance knowledge, cultivate aesthetic sensibility, and improve the human condition.

University Values

We strive to create a community of leaders and innovators in an environment that fosters a desire to advance and disseminate knowledge. We support the mission of the university by actualizing our core values of equity, integrity, intellectual curiosity, creativity, tradition, transparency, respect, collaboration, pluralism, and sustainability.

University Vision

We strive to be included in the top 25% of our peer institutions by 2020, improving our national and international status and recognition.

College / VP and Program / Department Mission

Mission of College or VP-area
Provide the mission for the College or VP-area in the space provided. If none is available, write "None Available in 2017-2018."
Our mission is to serve our students, the citizens of Louisiana, the nation, and the world, through innovative and stimulating educational experiences and compelling research initiatives that create knowledge, deepen our basic understanding of the world around us, further economic development, and enhance quality of life. In support of our mission, The College of Sciences seeks to:

Develop broad-thinking students into mature, ethical professionals, scientists, and researchers with the necessary creativity, critical thinking, and problem solving skills required to make significant contributions to industry, government, and the academic sector.
Recruit and support top-notch teaching and research faculty engaged in scientific endeavors that are recognized nationally for their relevance and impact.
Enrich scientific research and education through on-campus collaborations, multidisciplinary programs, large-scale multi-institution initiatives, as well as partnerships with government and industry.
Foster scientific literacy within the University, the citizens of Louisiana, and the nation by providing stimulating courses for our students and by partnering with educators at the K-12 and community college level.
Provide leadership in the translation and application of research into practical solutions that will benefit our local community, the state of Louisiana, our natural environment, industries of the Gulf Coast region, and society as a whole.

The Ray P. Authement College of Sciences will emerge as a preeminent college of sciences in the Southeast and Gulf Coast region of the United States. The College will be recognized nationally for its innovative education, scholarly research activities addressing our nation's grand challenges, and for its diverse student body with exemplary academic achievements, leadership abilities, and global perspectives.

Mission of Program / Department
Provide the program / department mission in the space provided. The mission statement should concisely define the purpose, functions, and key constituents. If none is available, write "None Available in 2017-2018."
Our program leads to a practical stand-alone MS degree or is an excellent stepping-stone towards a PhD program elsewhere. Students take advanced classes

in small-class settings, which are easier to personalize. Students work on research projects in a very close and direct feedback with their research advisers, work which many times leads to publications. This experience and the students' CV strengthening greatly enhance their skills and chances to get jobs or be accepted in PhD programs, if that is what they seek.

Attachment (optional)
Upload any documents which support the program / department assessment process.

Assessment Plan (due 12/4/17)

Assessment Plan (Goals / Objectives, Assessment Measures and Criteria for Success)

Assessment List

<table>
<tr><td>Goal/Objective</td><td>All candidates in the M.S. program will be able to demonstrate knowledge across the discipline and have a deeper understanding in their area of specialization. General knowledge is assessed though regular evaluation in general classes. Knowledge in their specialized field is assessed through two seminar presentations, proposal defense, and thesis/project defense. Non-thesis track students take an additional written exam.</td></tr>
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<tr><td>Standards/Outcomes</td><td></td></tr>
<tr><td>Assessment Measures</td><td>
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		5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 100% of the students taking this exam pass.	

Goal/Objective	All candidates in the M.S. program will have the skills and knowledge necessary to design and complete a research project under the guidance of a faculty member who is a member of the Graduate Faculty. All candidates in the M.S. program will have the skills necessary to analyze results and disseminate them verbally and in writing, typically associated with presentations and publications, respectively. Students on thesis track write and defend a thesis and present two seminars; students on non-thesis track finalize the project, present two seminars, and write a final report on the findings.
Legends	SLO - Student Learning Outcome/Objective (academic units);
Standards/Outcomes	
Assessment Measures	

Assessment Measure	**Criterion**	**Attachments**
Direct - Academic Direct Measure (Other)	Each candidate's ability to analyze and synthesize data, as well as to present the results of their research, is evaluated by a committee of faculty members through a number of public oral events. For the thesis track the evaluation is done in four rounds: two seminar presentations (PHYS595/596), proposal defense, and thesis defense. For the non-thesis track, the evaluation is done in three rounds: two seminar presentations (PHYS595/596) and a research proposal defense. During all oral events, the committee and the public will ask questions to evaluate the candidate's understanding of the nature of the research, as well as problems associated with the analysis and interpretation of data. In addition, during a thesis defense, questions covering the student's course work can be asked by committee members only. The performance evaluation is done as described in the Targets of this Measure. (1) Proposal defense: Each candidate's ability to design and conduct a research project is evaluated by a faculty committee selected by the student during the Research Proposal Defense. The committee members vote with a final pass/fail evaluation (i.e. more passes than fails). The target is to have all students pass. (2) Thesis defense: For a thesis defense, the committee will vote to give a score from 1-5 for this assessment on the scale: 1=does not meet expectations; 2=approaching expectations; 3=meets expectations; 4=slightly above expectations, 5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 70% of students pass. (3) Seminar presentations: For the seminar presentations, the evaluation is done by an ad-hoc	

		committee comprised of at least three graduate faculty members. The questionnaire contains two sections: scientific content (10 questions) and presentation skills (8 questions). For each question, the following grading scheme is used: 1=unsatisfactory; 2=satisfactory; 3=good; 4=very good; 5=exceptional. An average score above 2.5 (50%) is considered a "pass". An average of the two seminar presentations is considered their final score. The target is to have all students pass.	

Program / Department Assessment Narrative

The primary purpose of assessment is to use data to inform decisions and improve programs (student learning) and departments (operations); this is an on-going process of defining goals and expectations, collecting results, analyzing data, comparing current and past results and initiatives, and making decisions based on these reflections. In the space below, describe the program's or department's overall plan for improving student learning and/or operations (the "assessment plan"). Consider the following:
1) What strategies exist to assess the outcomes?
2) What does the program/department expect to achieve with the goals and objectives identified above?
3) How might prior or current initiatives (improvements) influence the anticipated outcomes this year?
4) What is the plan for using data to improve student learning and/or operations?
5) How will data be shared within the Program/Department (and, where appropriate, the College/VP-area)?

Assessment Process

1) statistics are kept based on data recorded;
2) a steady rate of production of quality graduates;
3) organizational measures that keep students informed, on track, aware of resources; academic training adjustments based on statistics of integration of graduates into the work force or continuing graduate education;
4) specific cases observed and documented (very successful and very unsuccessful) are discussed further with the department for future decisions or changes in policy.
5) at the faculty meetings, where all faculty is present;

Results & Improvements (due 9/15/18)

Results and Improvement Narratives

Assessment List Findings for the Assessment Measure level for All candidates in the M.S. program will be able to demonstrate knowledge across the discipline and have a deeper understanding in their area of specialization. General knowledge is assessed though regular evaluation in general classes. Knowledge in their specialized field is assessed through two seminar presentations, proposal defense, and thesis/project defense. Non-thesis track students take an additional written exam.

Goal/Objective	All candidates in the M.S. program will be able to demonstrate knowledge across the discipline and have a deeper understanding in their area of specialization. General knowledge is assessed though regular evaluation in general classes. Knowledge in their specialized field is assessed through two seminar presentations, proposal defense, and thesis/project defense. Non-thesis track students take an additional written exam.
Legends	SLO - Student Learning Outcome/Objective (academic units);

Standards/Outcomes

Assessment Measures

Assessment Measure	Criterion
Direct - Academic Direct Measure (Other)	All candidates in the M.S. program are evaluated throughout the program through examinations that evaluate their level of preparation in the different academic subjects they are trained. The department maintains the same standards as those of the Graduate School: a minimum GPA of 3.0, no more than 2 grades of C, no grades of D, no grades of F. For a non-thesis track candidate, the total requirement is completed with the passing of a written 3-hours comprehensive examination covering the student's course work, research work, and basic topics in advanced mechanics and electromagnetism, before graduation. The thesis track students are having their comprehensive examination in oral form, during the time of their thesis defense. The performance evaluation is done as described in the Targets of this Measure. (1) Regular classes: Each candidate's proficiency in the specific subject of a class is evaluated through a final grade. The target is to have all students pass with a grade of B. (2) Comprehensive exam: for the non thesis track, the written exam is considered passed if the candidate obtains a minimum of 50% in each of the tested areas. The target is to have all students taking the exam pass. (3) Comprehensive exam: for the thesis track, the committee will vote to give a score from 1-5 for this assessment on the scale: 1=does not meet expectations; 2=approaching expectations; 3=meets expectations; 4=slightly above expectations, 5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 100% of the students taking this exam pass.

Assessment Findings

Assessment Measure	Criterion	Summary	Attachments of the Assessments	Improvement Narratives
Direct - Academic Direct Measure (Other)	Has the criterion All candidates in the M.S. program are evaluated throughout the program through examinations that evaluate their level of preparation in the different academic subjects they are trained. The department maintains the same standards as those of the Graduate School: a minimum	All three criteria were met. Therefore, the target was met. During the 2017-2018 academic year, fifteen students were enrolled in their Master Degree in Physics, each taking an average of three classes per semester, plus seminar. Target (1): All		- Assessment Process: Continuous monitoring: We will continue the process, to evaluate its success with a different group students. Data accumulation will allow for statistics.

			GPA of 3.0, no more than 2 grades of C, no grades of D, no grades of F. For a non-thesis track candidate, the total requirement is completed with the passing of a written 3-hours comprehensive examination covering the student's course work, research work, and basic topics in advanced mechanics and electromagnetism, before graduation. The thesis track students are having their comprehensive examination in oral form, during the time of their thesis defense. The performance evaluation is done as described in the Targets of this Measure. (1) Regular classes: Each candidate's proficiency in the specific subject of a class is evaluated through a final grade. The target is to have all students pass with a grade of B. (2) Comprehensive exam: for the non thesis track, the written exam is considered passed if the candidate obtains a minimum of 50% in each of the tested areas. The target is to have all students taking the exam pass. (3) Comprehensive exam: for the thesis	obtained grades of A or B. This target was met. Target (2): There were no students on non-thesis track. This target was met. Target (3): Six students on thesis track passed the comprehensive exam and defended their theses. Their average scores ranged from 3-5 and therefore passed. This target was met.		

		track, the committee will vote to give a score from 1-5 for this assessment on the scale: 1=does not meet expectations; 2=approaching expectations; 3=meets expectations; 4=slightly above expectations, 5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 100% of the students taking this exam pass. been met yet? Met			

Assessment List Findings for the Assessment Measure level for All candidates in the M.S. program will have the skills and knowledge necessary to design and complete a research project under the guidance of a faculty member who is a member of the Graduate Faculty. All candidates in the M.S. program will have the skills necessary to analyze results and disseminate them verbally and in writing, typically associated with presentations and publications, respectively. Students on thesis track write and defend a thesis and present two seminars; students on non-thesis track finalize the project, present two seminars, and write a final report on the findings.

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Legends	SLO - Student Learning Outcome/Objective (academic units);
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Assessment Measure	**Criterion**
Direct - Academic Direct Measure (Other)	Each candidate's ability to analyze and synthesize data, as well as to present the results of their research, is evaluated by a committee of faculty members through a number of public oral events. For the thesis track the evaluation is done in four rounds: two seminar presentations (PHYS595/596), proposal defense, and thesis defense. For the non-thesis track, the evaluation is done in three rounds: two seminar

		presentations (PHYS595/596) and a research proposal defense. During all oral events, the committee and the public will ask questions to evaluate the candidate's understanding of the nature of the research, as well as problems associated with the analysis and interpretation of data. In addition, during a thesis defense, questions covering the student's course work can be asked by committee members only. The performance evaluation is done as described in the Targets of this Measure. (1) Proposal defense: Each candidate's ability to design and conduct a research project is evaluated by a faculty committee selected by the student during the Research Proposal Defense. The committee members vote with a final pass/fail evaluation (i.e. more passes than fails). The target is to have all students pass. (2) Thesis defense: For a thesis defense, the committee will vote to give a score from 1-5 for this assessment on the scale: 1=does not meet expectations; 2=approaching expectations; 3=meets expectations; 4=slightly above expectations, 5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 70% of students pass. (3) Seminar presentations: For the seminar presentations, the evaluation is done by an ad-hoc committee comprised of at least three graduate faculty members. The questionnaire contains two sections: scientific content (10 questions) and presentation skills (8 questions). For each question, the following grading scheme is used: 1=unsatisfactory; 2=satisfactory; 3=good; 4=very good; 5=exceptional. An average score above 2.5 (50%) is considered a "pass". An average of the two seminar presentations is considered their final score. The target is to have all students pass.

Assessment Findings

Assessment Measure	Criterion	Summary	Attachments of the Assessments	Improvement Narratives
Direct - Academic Direct Measure (Other)	Has the criterion Each candidate's ability to analyze and synthesize data, as well as to present the results of their research, is evaluated by a committee of faculty members through a number of public oral events. For the thesis track the evaluation is done in four rounds: two seminar presentations (PHYS595/596), proposal defense, and thesis defense. For the non-thesis track, the evaluation is done in three rounds: two seminar	During the 2017-2018 academic year, six students completed their Master Degree in Physics. We have twelve graduate students enrolled, seven continuing and five new. Four of the continuing students are defending their proposals this semester (FA18). The results regarding the targets for this measure for the 2017-2018		- Assessment Process: Continuous monitoring: We will continue the process, to evaluate its success with a different group students. Data accumulation will allow for statistics.

			presentations (PHYS595/596) and a research proposal defense. During all oral events, the committee and the public will ask questions to evaluate the candidate's understanding of the nature of the research, as well as problems associated with the analysis and interpretation of data. In addition, during a thesis defense, questions covering the student's course work can be asked by committee members only. The performance evaluation is done as described in the Targets of this Measure. (1) Proposal defense: Each candidate's ability to design and conduct a research project is evaluated by a faculty committee selected by the student during the Research Proposal Defense. The committee members vote with a final pass/fail evaluation (i.e. more passes than fails). The target is to have all students pass. (2) Thesis defense: For a thesis defense, the committee will vote to give a score from 1-5 for this assessment on the scale: 1=does not meet expectations; 2=approaching expectations; 3=meets expectations;	period are as follows. Target (1): Seven students proposed their research subject to their committees. All passed. The target is met. Target (2): Six students defended their thesis in front of their committees. They obtained average grades of 4 or 5, and therefore all passed. The target is met. Target (3): Seven students presented seminars. The average results for the seven students are: Student 1: 55% academic content, 65% presentation skills; Student 2: 95% academic content, 90% presentation skills; Student 3: 90% academic content, 90% presentation skills; Student 4: 73% academic content, 87% presentation skills; Student 5: 78% academic content, 61% presentation skills; Student 6: 74% academic content, 78% presentation skills; Student 7: 75% academic content, 87%		

	4=slightly above expectations, 5=exceeds expectations. A score of three (3) is considered a pass. The target is to have 70% of students pass. (3) Seminar presentations: For the seminar presentations, the evaluation is done by an ad-hoc committee comprised of at least three graduate faculty members. The questionnaire contains two sections: scientific content (10 questions) and presentation skills (8 questions). For each question, the following grading scheme is used: 1=unsatisfactory; 2=satisfactory; 3=good; 4=very good; 5=exceptional. An average score above 2.5 (50%) is considered a "pass". An average of the two seminar presentations is considered their final score. The target is to have all students pass. been met yet? Met	presentation skills; All students who presented passed. The target is met.		

Reflection (Due 9/15/18)

Reflection

The primary purpose of assessment is to use data to inform decisions and improve programs and operations;

this is an on-going process of defining goals and expectations, collecting results, analyzing data, comparing current and past results and initiatives, and making decisions based on these reflections. Recalling this purpose, respond to the questions below.

1) How were assessment results shared in the program / department?
Please select all that apply. If "other", please use the text box to elaborate.
Distributed via email
Presented formally at staff / department / committee meetings (selected)
Discussed informally
Other (explain in text box below)

2) How frequently were assessment results shared?

Frequently (>4 times per cycle)
Periodically (2-4 times per cycle)
Once per cycle (selected)
Results were not shared this cycle

3) With whom were assessment results shared?
Please select all that apply.
Department Head (selected)
Dean / Asst. or Assoc. Dean
Departmental assessment committee
Other faculty / staff (selected)

4) Consider the impact of prior applied changes. Specifically, compare current results to previous results to evaluate the impact of a previously reported change. Demonstrate how the use of results improved student learning and/or operations.

All targets were met, reflecting on a very successful cycle.
(a) The four-semester individualized plan for each student works well. This plan has been successfully implemented for all students. It appears to help students work towards their goal. The requirements are clearly included in a table that is individualized for each student during one-to- one meetings with the Graduate Coordinator. As the student progresses into the program, the requirements are shown as being achieved.
(b) The graduate coordinator organized a seminar to discuss professional and ethical behavior in the academia. The topics covered included: student-advisor and professional relations, recommendation letters and rules, technical presentations, addressing requests, expected skills at graduation, forms expected to be submitted as progress is made, advice from former graduate students in the department. This seminar seems to help the students clarify their goals.

5) Over the past three assessment cycles, what has been the overall impact of "closing the loop"? Provide examples of improvements in student learning, program quality, or department operations that are directly linked to assessment data and follow-up analysis.

It is clear that the background preparation (K-12 and undergraduate) affects the quality of the research the student can perform, as well as the time it takes for them to make progress. We noticed that grades are less and less a reflection of the students connecting/learning abilities. In addition, letters of reference are often too general to give relevant information towards the student's probability of success. They are most likely positive and don't address specifics. We are taking additional measured to sort the applications. We interview the students, we call the references when the numbers are provided. It has helped to a certain extent, but it still not a guarantee that the applicant will perform well.

The most successful students we had this cycle were very good students from our undergraduate program. We were fortunate to have them. They are now in prestigious PhD programs or employed as physicists. One was recruited by a

faculty member who the student worked with during undegraduate research.

Attachments (optional)
Upload any documents which support the program / department assessment process.