Analysis Questions and Analysis Answers

For Academic Programs

Informed by your assessment activities related to student learning, what changes have you made in your degree program in the last three to five years? Describe the changes (e.g., curriculum revision, new courses, faculty development), the general results that prompted the changes (e.g., student performance on an assessment measure), and any impact on student learning that you might attribute to these changes.

Analysis of assessment results related to student research in 2012 led the Applied Statistics doctoral program to develop action items in the following areas: 1) better tracking of student research progress in the first two years of the program including summer research and research presentations, and 2) revision of measures and rubrics to evaluate and track student discipline knowledge and research abilities better. Two new faculty members have been added in the last few years that have helped with the implementation of these action items including the offering of new courses. In summary, these actions have aided in an overall increase in student involvement in research and research productivity by engaging students earlier in the program, with respect to research-related activities, such as writing technical papers and delivering research presentations both on and off campus at departmental seminars and conferences. Initial results look promising with more students attending conferences, making research presentations, and submitting research manuscripts for publication consideration. We will collect data for the 2013-14 assessment cycle and determine if further strategic adjustments are necessary to continue on this upward path. We will also devise and implement a student recruitment strategy for the doctoral program.

Mission / Purpose

The mission of the ISM Department is to maintain high quality undergraduate, masters and doctoral programs that prepare students for successful careers. Consistent with the mission of the Culverhouse College of Commerce and Business Administration, we will achieve our goals by creating and disseminating business research that impacts the practice of business

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Knowledge
Students should have a sound methodological base with which to conduct research in Applied Statistics

Connected Document
Applied stats PhD Curriculum Maps

Related Measures

M 1: Qualifying Exam Results
Qualifying exam results given in the summer after the first year of coursework.

Source of Evidence: Academic direct measure of learning - other

Target:
At least 50% of the doctoral students must pass the qualifying exam.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Recruit Higher Quality Students
Established in Cycle: 2011-2012
Recruit higher quality doctoral students and monitor their progress.

M 2: Faculty evaluations
Faculty evaluations of students including course performance.

Source of Evidence: Academic direct measure of learning - other

Target:
At least 50% of the doctoral students should meet or exceed expectations defined in a rubric.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Develop a Rubric for Overall Performance
Established in Cycle: 2011-2012
Develop a rubric for faculty evaluation of overall student performance. Coordinate faculty evaluations of students, include inte...

SLO 2: Skills/Abilities
Students will be able to organize and clearly present technical subject matter. This includes communicating their results to peers at national conferences in oral presentations as well as writing journal articles

Connected Document
Applied stats PhD Curriculum Maps


**Related Measures**

**M 3: Written and oral presentations**
Written and oral presentations at national meetings.
Source of Evidence: Presentation, either individual or group

**Target:**
At least 50% of students will attend and/or make presentations at conference, regional or national by years 3 and 4.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**Research and Presentations**
*Established in Cycle: 2011-2012*
Get students involved in research early, starting in their first year. Each student will make at least one seminar presentation...

**M 4: Written and oral presentations at Applied Statistics seminars.**
Written and oral presentations at Applied Statistics seminars.
Source of Evidence: Presentation, either individual or group

**Target:**
At least 80% of the students will make at least one presentation and will receive feedback.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**Develop a Rubric for Presentations**
*Established in Cycle: 2011-2012*
Develop a rubric for evaluation of seminar presentations. Doctoral students will make presentations at the departmental seminar...

**SLO 3: Students should be able to conduct original research in Applied Statistics**
An Improvement Outcome Derived From their 2010-11 Assessment Findings) Students should be able to conduct original research in Applied Statistics

**Connected Document**
Applied stats PhD Curriculum Maps I

**Related Measures**

**M 5: Students should prepare a written dissertation proposal**
Students should prepare a written dissertation proposal and present it to their dissertation committee and peers.
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the students will write a dissertation proposal and defend it by their 3rd year.

**M 6: Students should submit at least one article**
Students should submit at least one article for publication to a reputed journal before graduation

Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the students will submit at least one journal article for publication before they graduate.

**M 7: Students should make research presentations**
Students should make research presentations at departmental seminars and conferences.
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the doctoral students will make a research presentation at the departmental seminars and/or conferences.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**Presentations and Feedback**
*Established in Cycle: 2011-2012*
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the qual...

**SLO 4: Students will teach an introductory course in Statistics.**
Students will successfully teach or assist in teaching (grading, lecturing, proctoring, etc.) an introductory course in Statistics.

**Connected Document**
Applied stats PhD Curriculum Maps I

**Related Measures**

**M 8: Content and delivery as evidenced by preparation of course materials and presentation.**
Content and delivery as evidenced by preparation of course materials and presentation.

Source of Evidence: Presentation, either individual or group

**Target:**
At least 80% of the doctoral students will teach solo or be directly involved in assisting a professor with teaching a statistics class.
**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Expand Teaching Opportunities and Mentoring**
*Established in Cycle: 2011-2012*
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.

**M 9: Evaluations including those from faculty visits**
Evaluations including those from faculty visits to the classes and feedback
Source of Evidence: Academic direct measure of learning - other
**Target:**
At least 80% of the doctoral students will meet or exceed expectations.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Develop a Rubric for Teaching**
*Established in Cycle: 2011-2012*
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and an...

**Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans**

**OthOtcm 5: Recognized quality**
The program will improve and sustain a high level of recognized quality.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 10: Attract and admit students of high academic quality**
Attract and admit students of high academic quality. Continuous improvement measured for example by incoming G.P.A and GRE/GMAT scores and interviews.
Source of Evidence: Academic indirect indicator of learning - other

**M 11: Student/faculty participation and involvements in professional meetings**
Student/faculty participation and involvements in professional meetings
Source of Evidence: Academic indirect indicator of learning - other

**OthOtcm 6: Optimal level**
The program will build and sustain an optimal level of annual program enrollments and degree completion.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 12: Enrollment and degree completions in the PhD program**
Enrollment and degree completions in the PhD program; recruiting goal of 3 to 4 students per year
Source of Evidence: Academic indirect indicator of learning - other

**Target:**
N/A

**M 13: Hire new faculty to replace faculty**
Hire new faculty to replace faculty lost due to administrative reassignment.
Source of Evidence: Academic indirect indicator of learning - other

**OthOtcm 7: Program Value**
The program will be highly valued by its program graduates and other key constituencies it serves.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 14: Placements of recent PhD graduates**
Placements of recent PhD graduates
Source of Evidence: Academic indirect indicator of learning - other

**M 15: Student networking via seminars, conference attendance, program involvement**
Student networking via seminars, conference attendance, program involvement
Source of Evidence: Academic indirect indicator of learning - other

**Details of Action Plans for This Cycle (by Established cycle, then alpha)**

**Develop a Rubric for Overall Performance**
Develop a rubric for faculty evaluation of overall student performance. Coordinate faculty evaluations of students, include interviews and feedback.

**Established in Cycle:** 2011-2012
**Implementation Status:** Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Faculty evaluations | Outcome/Objective: Discipline Knowledge

Develop a Rubric for Presentations
Develop a rubric for evaluating seminar presentations. Doctoral students will make presentations at the departmental seminar and conferences and will receive feedback on both the content and the quality of the presentation.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Written and oral presentations at Applied Statistics seminars. | Outcome/Objective: Skills/Abilities

Develop a Rubric for Teaching
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and annual one on one interviews to provide feedback. Faculty will visit classrooms, observe teaching and provide feedback. The mentors will play a more active role, update progress and coordinate with the program coordinator.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Evaluations including those from faculty visits | Outcome/Objective: Students will teach an introductory course in Statistics.

Expand Teaching Opportunities and Mentoring
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Evaluations including those from faculty visits | Outcome/Objective: Students will teach an introductory course in Statistics.

Presentations and Feedback
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the quality of the presentation.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Students should make research presentations | Outcome/Objective: Students should be able to conduct original research in Applied Statistics

Recruit Higher Quality Students
Recruit higher quality doctoral students and monitor their progress.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Qualifying Exam Results | Outcome/Objective: Discipline Knowledge

Research and Presentations
Get students involved in research early, starting in their first year. Each student will make at least one seminar presentation during the year which will be evaluated. Students will submit written reports of their research by the end of summer and will receive feedback from the faculty.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: Hgh

Relationships (Measure | Outcome/Objective):
Measure: Written and oral presentations | Outcome/Objective: Skills/Abilities
Mission / Purpose

The mission of the ISM Department is to maintain high quality undergraduate, masters and doctoral programs that prepare students for successful careers. Consistent with the mission of the Culverhouse College of Commerce and Business Administration, we will achieve our goals by creating and disseminating business research that impacts the practice of business.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Knowledge
Students should have a sound methodological base with which to conduct research in Applied Statistics

Connected Document
Applied stats PhD Curriculum Maps I

Related Measures

M 1: Qualifying Exam Results
Qualifying exam results given in the summer after the first year of coursework.
Source of Evidence: Academic direct measure of learning - other

Target:
At least 50% of the doctoral students must pass the qualifying exam.
Finding (2012-2013) - Target: Met
A qualifying exam was administered at the end of summer 2012 for first year students (4). Of the 4 first year students, all students passed the qualifying exam. (100%)

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

M 2: Faculty evaluations
Faculty evaluations of students including course performance.
Source of Evidence: Academic direct measure of learning - other

Target:
At least 50% of the doctoral students should meet or exceed expectations defined in a rubric.
Finding (2012-2013) - Target: Met
One on one interviews were held with the students at the end of the spring semester 2013. The first year students (4) all met or exceeded expectations based on the coursework evaluations and one on one interviews. The continuing students (5) met expectations based on their dissertation research. (100%)

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

SLO 2: Skills/Abilities
Students will be able to organize and clearly present technical subject matter. This includes communicating their results to peers at national conferences in oral presentations as well as writing journal articles

Connected Document
Applied stats PhD Curriculum Maps I

Related Measures

M 3: Written and oral presentations
Written and oral presentations at national meetings.
Source of Evidence: Presentation, either individual or group

Target:
At least 50% of students will attend and/or make presentations at conference, regional or national by years 3 and 4.
Finding (2012-2013) - Target: Met
Of the 5 continuing students, 3 students presented at a national meeting. (60%)

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.
Research and Presentations
Established in Cycle: 2011-2012
Get students involved in research early, starting in their first year. Each student will make at least one seminar presentation...

M 4: Written and oral presentations at Applied Statistics seminars.
Written and oral presentations at Applied Statistics seminars.
Source of Evidence: Presentation, either individual or group
Target:
At least 80% of the students will make at least one presentation and will receive feedback.
Finding (2012-2013) - Target: Partially Met
Of the first year students (5), 3 students presented in seminar. (60%)
Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Develop a Rubric for Presentations
Established in Cycle: 2011-2012
Develop a rubric for evaluation of seminar presentations. Doctoral students will make presentations at the departmental seminar...

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An Improvement Outcome Derived From their 2010-11 Assessment Findings) Students should be able to conduct original research in Applied Statistics
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Applied stats PhD Curriculum Maps

Related Measures

M 5: Students should prepare a written dissertation proposal
Students should prepare a written dissertation proposal and present it to their dissertation committee and peers.
Source of Evidence: Academic direct measure of learning - other
Target:
At least 80% of the students will write a dissertation proposal and defend it by their 3rd year.
Finding (2012-2013) - Target: Met
Of the 5 continuing students, all 5 students successfully defended a dissertation proposal. (100%)

M 6: Students should submit at least one article
Students should submit at least one article for publication to a reputed journal before graduation
Source of Evidence: Academic direct measure of learning - other
Target:
At least 80% of the students will submit at least one journal article for publication before they graduate.
Finding (2012-2013) - Target: Met
Of the 5 continuing students, all 5 students submitted a manuscript for publication consideration prior to graduation. (100%)

M 7: Students should make research presentations
Students should make research presentations at departmental seminars and conferences.
Source of Evidence: Academic direct measure of learning - other
Target:
At least 80% of the doctoral students will make a research presentation at the departmental seminars and/or conferences.
Finding (2012-2013) - Target: Partially Met
Of the 5 continuing students, 3 students presented at a conference. (60%)
Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Presentations and Feedback
Established in Cycle: 2011-2012
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the qual...

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Related Measures

M 8: Content and delivery as evidenced by preparation of course materials and presentation.
Content and delivery as evidenced by preparation of course materials and presentation.
Source of Evidence: Presentation, either individual or group
Target:
At least 80% of the doctoral students will teach solo or be directly involved in assisting a professor with teaching a statistics class.
Finding (2012-2013) - Target: Met
Of the 4 first year students, all 4 students either taught or assisted in teaching a statistics course. (100%)
Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Expand Teaching Opportunities and Mentoring
Established in Cycle: 2011-2012
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.

M 9: Evaluations including those from faculty visits
Evaluations including those from faculty visits to the classes and feedback
Source of Evidence: Academic direct measure of learning - other
Target:
At least 80% of the doctoral students will meet or exceed expectations.
Finding (2012-2013) - Target: Met
Each first year student has been assigned a mentor. The continuing students are mentored by their dissertation advisor. Student interviews took place in the spring. Of the 4 first year students, all 4 students met or exceeded expectations in their teaching duties. (100%)

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Develop a Rubric for Teaching
Established in Cycle: 2011-2012
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and an...

Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

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The program will improve and sustain a high level of recognized quality.

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Applied stats PhD Curriculum Maps

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Source of Evidence: Academic indirect indicator of learning - other

M 11: Student/faculty participation and involvements in professional meetings
Student/faculty participation and involvements in professional meetings
Source of Evidence: Academic indirect indicator of learning - other

OthOtcm 6: Optimal level
The program will build and sustain an optimal level of annual program enrollments and degree completion.

Connected Document
Applied stats PhD Curriculum Maps

Related Measures

M 12: Enrollment and degree completions in the PhD program
Enrollment and degree completions in the PhD program; recruiting goal of 3 to 4 students per year
Source of Evidence: Academic indirect indicator of learning - other
Target:
N/A

Finding (2012-2013) - Target: Met
Applied Statistics
Majors by Level and Fall Term

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Applied Statistics
Degrees by Level and Year

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<td>UG Total</td>
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<tr>
<td>Bachelor</td>
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</table>
Bachelor 2
Masters
First Prof.
Educ Spec.
Doctoral
Total
Less Bachelor 2

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M 13: Hire new faculty to replace faculty
Hire new faculty to replace faculty lost due to administrative reassignment.
Source of Evidence: Academic indirect indicator of learning - other

Oth Otcm 7: Program Value
The program will be highly valued by its program graduates and other key constituencies it serves.
Connected Document
Applied stats PhD Curriculum Maps

Related Measures

M 14: Placements of recent PhD graduates
Placements of recent PhD graduates
Source of Evidence: Academic indirect indicator of learning - other

M 15: Student networking via seminars, conference attendance, program involvement
Student networking via seminars, conference attendance, program involvement
Source of Evidence: Academic indirect indicator of learning - other

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Develop a Rubric for Overall Performance
Develop a rubric for faculty evaluation of overall student performance. Coordinate faculty evaluations of students, include interviews and feedback.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High
Relationships (Measure | Outcome/Objective):
Measure: Faculty evaluations | Outcome/Objective: Discipline Knowledge

Develop a Rubric for Presentations
Develop a rubric for evaluation of seminar presentations. Doctoral students will make presentations at the departmental seminar and conferences and will receive feedback on both the content and the quality of the presentation.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High
Relationships (Measure | Outcome/Objective):
Measure: Written and oral presentations at Applied Statistics seminars | Outcome/Objective: Skills/Abilities

Develop a Rubric for Teaching
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and annual one-on-one interviews to provide feedback. Faculty will visit classrooms, observe teaching and provide feedback. The mentors will play a more active role, update progress and coordinate with the program coordinator.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High
Relationships (Measure | Outcome/Objective):
Measure: Evaluations including those from faculty visits | Outcome/Objective: Students will teach an introductory course in Statistics.

Expand Teaching Opportunities and Mentoring
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High
Relationships (Measure | Outcome/Objective):
Measure: Content and delivery as evidenced by preparation of course materials and presentation. | Outcome/Objective: Students will teach an introductory course in Statistics.

Presentations and Feedback
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the quality of the presentation.
Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High
Relationships (Measure | Outcome/Objective):
Measure: Students should make research presentations | Outcome/Objective: Students should be able
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<tr>
<th><strong>Recruit Higher Quality Students</strong></th>
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<td>Recruit higher quality doctoral students and monitor their progress.</td>
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</table>

**Established in Cycle:** 2011-2012  
**Implementation Status:** Planned  
**Priority:** High

**Relationships (Measure | Outcome/Objective):**  
  **Measure:** Qualifying Exam Results  
  **Outcome/Objective:** Discipline Knowledge

<table>
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<th><strong>Research and Presentations</strong></th>
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</table>

**Established in Cycle:** 2011-2012  
**Implementation Status:** Planned  
**Priority:** High

**Relationships (Measure | Outcome/Objective):**  
  **Measure:** Written and oral presentations  
  **Outcome/Objective:** Skills/Abilities
University of Alabama

Detailed Assessment Report
2011-2012 Applied Statistics Ph.D.
As of: 7/1/2014 02:43 PM CENTRAL

Mission / Purpose
The mission of the ISM Department is to maintain high quality undergraduate, masters and doctoral programs that prepare students for successful careers. Consistent with the mission of the Culverhouse College of Commerce and Business Administration, we will achieve our goals by creating and disseminating business research that impacts the practice of business

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Discipline Knowledge
Students should have a sound methodological base with which to conduct research in Applied Statistics

Connected Document
Applied stats PhD Curriculum Maps

Related Measures

M 1: Qualifying Exam Results
Qualifying exam results given in the summer after the first year of coursework.
Source of Evidence: Academic direct measure of learning - other
Target:
At least 50% of the doctoral students must pass the qualifying exam.
Finding (2011-2012) - Target: Met
A qualifying exam will be administered at the end of summer 2012 for first year students (3). Of the continuing students (6), 50% met (passed qualifying exam) and 50% exceeded expectations (passed qualifying and successfully completed a dissertation).

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Recruit Higher Quality Students
Established in Cycle: 2011-2012
Recruit higher quality doctoral students and monitor their progress.

M 2: Faculty evaluations
Faculty evaluations of students including course performance.
Source of Evidence: Academic direct measure of learning - other
Target:
At least 50% of the doctoral students should meet or exceed expectations defined in a rubric.
Finding (2011-2012) - Target: Met
One on one interviews were held with the students at the end of the spring semester. The first year students (3) all met or exceeded expectations based on the coursework evaluations and one on one interviews. The continuing students (6) met expectations based on their dissertation research.

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

Develop a Rubric for Overall Performance
Established in Cycle: 2011-2012
Develop a rubric for faculty evaluation of overall student performance. Coordinate faculty evaluations of students, include inte...

SLO 2: Skills/Abilities
Students will be able to organize and clearly present technical subject matter. This includes communicating their results to peers at national conferences in oral presentations as well as writing journal articles

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Applied stats PhD Curriculum Maps

Related Measures

M 3: Written and oral presentations
Written and oral presentations at national meetings.
Source of Evidence: Presentation, either individual or group
Target:
At least 50% of students will attend and/or make presentations at conference, regional or national by years 3 and 4.
Finding (2011-2012) - Target: Not Met
Of the 4 continuing students, 1 student presented at a national meeting. (25%)

Related Action Plans (by Established cycle, then alpha):
For full information, see the Details of Action Plans section of this report.

**Research and Presentations**
*Established in Cycle: 2011-2012*
Get students involved in research early, starting in their first year. Each student will make at least one seminar presentation...

**M 4: Written and oral presentations at Applied Statistics seminars.**
Written and oral presentations at Applied Statistics seminars.
Source of Evidence: Presentation, either individual or group

**Target:**
At least 80% of the students will make at least one presentation and will receive feedback.

**Finding (2011-2012) - Target: Partially Met**
First year students exceeded expectations based on their work and evaluations in ST 697. Given the recruiting efforts in APST in 2011-12, candidate seminars and visiting speakers in the fall and the spring, student presentations were not possible at departmental seminars during 2011-12.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Develop a Rubric for Presentations**
*Established in Cycle: 2011-2012*
Develop a rubric for evaluation of seminar presentations. Doctoral students will make presentations at the departmental seminar...

**SLO 3: Students should be able to conduct original research in Applied Statistics**
An Improvement Outcome Derived From their 2010-11 Assessment Findings) Students should be able to conduct original research in Applied Statistics

**Connected Document**
*Applied stats PhD Curriculum Maps I*

**Related Measures**

**M 5: Students should prepare a written dissertation proposal**
Students should prepare a written dissertation proposal and present it to their dissertation committee and peers.
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the students will write a dissertation proposal and defend it by their 3rd year.

**Finding (2011-2012) - Target: Met**
Of the 6 continuing students, 100% successfully defended a dissertation proposal.

**M 6: Students should submit at least one article**
Students should submit at least one article for publication to a reputed journal before graduation
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the students will submit at least one journal article for publication before they graduate.

**Finding (2011-2012) - Target: Met**
Of the 6 continuing students, 16% exceeded (have a paper accepted/published) and 84% met (have at least one paper submitted) expectations.

**M 7: Students should make research presentations**
Students should make research presentations at departmental seminars and conferences.
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the doctoral students will make a research presentation at the departmental seminars and/or conferences.

**Finding (2011-2012) - Target: Met**
Of the 6 continuing students, 33% exceeded (presented at least one paper at a conference) and 67% met (presented one paper) expectations. Given the candidate seminars and visiting speakers, no student presentations were possible at departmental seminars during 2011-12.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

**Presentations and Feedback**
*Established in Cycle: 2011-2012*
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the qual...

**SLO 4: Students will teach an introductory course in Statistics.**
Students will successfully teach or assist in teaching (grading, lecturing, proctoring, etc.) an introductory course in Statistics.

**Connected Document**
*Applied stats PhD Curriculum Maps I*

**Related Measures**

**M 8: Content and delivery as evidenced by preparation of course materials and presentation.**
Content and delivery as evidenced by preparation of course materials and presentation.
Source of Evidence: Presentation, either individual or group
Target:
At least 80% of the doctoral students will teach solo or be directly involved in assisting a professor with teaching a statistics class.

**Finding (2011-2012) - Target: Met**
Among the 3 first year students 100% met or exceeded expectations in their duties as teaching assistants; among the 6 continuing students, 2 taught solo classes (33%), 2 assisted teaching (33%) and the rest (33%) had duties elsewhere that required no teaching. Among the ones who did solo teaching, one met (50%) and one (50%) exceeded expectations based on student evaluations and faculty observations.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

### Expand Teaching Opportunities and Mentoring
**Established in Cycle: 2011-2012**
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.

**M 9: Evaluations including those from faculty visits**
Evaluations including those from faculty visits to the classes and feedback
Source of Evidence: Academic direct measure of learning - other

**Target:**
At least 80% of the doctoral students will meet or exceed expectations.

**Finding (2011-2012) - Target: Met**
Each first year student has been assigned a mentor. The continuing students are mentored by their dissertation advisor. Student interviews took place in the spring. Among the first year students 100% met or exceeded expectations in their duties as teaching assistants; among the 6 continuing students, 2 taught solo classes (33%), 2 assisted teaching (33%) and the rest (33%) had duties elsewhere that required no teaching.

**Related Action Plans (by Established cycle, then alpha):**
For full information, see the Details of Action Plans section of this report.

### Develop a Rubric for Teaching
**Established in Cycle: 2011-2012**
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and an...

### Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

**OthOtcm 5: Recognized quality**
The program will improve and sustain a high level of recognized quality.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 10: Attract and admit students of high academic quality**
Attract and admit students of high academic quality. Continuous improvement measured for example by incoming G.P.A. and GRE/GMAT scores and interviews.
Source of Evidence: Academic indirect indicator of learning - other

**M 11: Student/faculty participation and involvements in professional meetings**
Student/faculty participation and involvements in professional meetings
Source of Evidence: Academic indirect indicator of learning - other

**OthOtcm 6: Optimal level**
The program will build and sustain an optimal level of annual program enrollments and degree completion.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 12: Enrollment and degree completions in the PhD program**
Enrollment and degree completions in the PhD program; recruiting goal of 3 to 4 students per year
Source of Evidence: Academic indirect indicator of learning - other

**M 13: Hire new faculty to replace faculty**
Hire new faculty to replace faculty lost due to administrative reassignment.
Source of Evidence: Academic indirect indicator of learning - other

**OthOtcm 7: Program Value**
The program will be highly valued by its program graduates and other key constituencies it serves.

**Connected Document**
Applied stats PhD Curriculum Maps

**Related Measures**

**M 14: Placements of recent PhD graduates**
Placements of recent PhD graduates
Source of Evidence: Academic indirect indicator of learning - other
M 15: Student networking via seminars, conference attendance, program involvement
Student networking via seminars, conference attendance, program involvement
Source of Evidence: Academic indirect indicator of learning - other

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Develop a Rubric for Overall Performance
Develop a rubric for faculty evaluation of overall student performance. Coordinate faculty evaluations of students, include interviews and feedback.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Faculty evaluations | Outcome/Objective: Discipline Knowledge

Develop a Rubric for Presentations
Develop a rubric for evaluation of seminar presentations. Doctoral students will make presentations at the departmental seminar and conferences and will receive feedback on both the content and the quality of the presentation.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Written and oral presentations at Applied Statistics seminars. | Outcome/Objective: Skills/Abilities

Develop a Rubric for Teaching
Develop a rubric for evaluating teaching performance. Each student will be mentored by a faculty member. Use the rubric and annual one on one interviews to provide feedback. Faculty will visit classrooms, observe teaching and provide feedback. The mentors will play a more active role, update progress and coordinate with the program coordinator.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Evaluations including those from faculty visits | Outcome/Objective: Students will teach an introductory course in Statistics.

Expand Teaching Opportunities and Mentoring
Get more eligible doctoral students to teach solo. Use summer teaching. Give more feedback. Provide mentoring.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Content and delivery as evidenced by preparation of course materials and presentation. | Outcome/Objective: Students will teach an introductory course in Statistics.

Presentations and Feedback
Doctoral students will make presentations at the departmental seminar and will receive feedback on both the content and the quality of the presentation.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Students should make research presentations | Outcome/Objective: Students should be able to conduct original research in Applied Statistics

Recruit Higher Quality Students
Recruit higher quality doctoral students and monitor their progress.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Qualifying Exam Results | Outcome/Objective: Discipline Knowledge

Research and Presentations
Get students involved in research early, starting in their first year. Each student will make at least one seminar presentation during the year which will be evaluated. Students will submit written reports of their research by the end of summer and will receive feedback from the faculty.

Established in Cycle: 2011-2012
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: Written and oral presentations | Outcome/Objective: Skills/Abilities
Curriculum Maps I  (In which courses or in what activities or assignments are Student Learning Outcomes Addressed)

<table>
<thead>
<tr>
<th>Student Learning Outcome 1</th>
<th>Student Learning Outcome 2</th>
<th>Student Learning Outcome 3</th>
<th>Student Learning Outcome 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read technical papers</td>
<td>Organize and clearly present technical subject matter</td>
<td>Conduct original research</td>
<td>Teach an introductory course</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course</th>
<th>Outcome 1</th>
<th>Outcome 2</th>
<th>Outcome 3</th>
<th>Outcome 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 603 Advanced Inference.</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>ST 610 Linear Models.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST 615 Theory of Regression</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST 635 Nonparametric Statistics</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ST 698 Research in Statistics</td>
<td>X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ST 699 Dissertation Research</td>
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<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Stat Seminar ST 697</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Curriculum Map II  (What assessment measures will be employed in which courses/activities/assignments for each Student learning Outcome)

<table>
<thead>
<tr>
<th>Student Learning Outcome 1</th>
<th>Student Learning Outcome 2</th>
<th>Student Learning Outcome 3</th>
<th>Student Learning Outcome 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have a sound methodological base</td>
<td>Organize and clearly present subject matter</td>
<td>Conduct original research in statistics</td>
<td>Teach an introductory course in statistics</td>
</tr>
<tr>
<td>- Qualifying exam results given in the first summer after the first year of coursework.</td>
<td>- Written and oral presentations in class, seminars and conference presentations.</td>
<td>- Prepare a written dissertation proposal and present it to the student’s dissertation committee and peers.</td>
<td>- Content and delivery as evidenced by preparation of course materials and presentation. Each student mentored by a faculty.</td>
</tr>
<tr>
<td>- Faculty Evaluations</td>
<td>- Journal submissions and research</td>
<td>- Submit at least one article for publication to a reputed journal before</td>
<td>- Course evaluations</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Course Title</th>
<th>Reports</th>
<th>Graduation</th>
<th>Including those from faculty visits to the classes and feedback.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 603 Advanced Inference</td>
<td>X</td>
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<td>ST 635 Nonparametric Statistics</td>
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<tr>
<td>ST 640 Statistical Computing.</td>
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