UNIT REPORT Statistics MS - Assessment Plan Summary

Statistics MS

Consistent Cohort Of Graduate Students Each Year

Goal Description:

A cohort of ten supported graduate students each year allows us to maintain a healthy program with consistent class sizes and class schedules.

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Support Ten New Students Each Year

Learning Objective Description:

We will support ten new graduate students each year, as many as twenty in the two years of our program. Support should be such that fulltime students are supported by at least \$10,000 more than the cost of tuition and fees.

RELATED ITEM LEVEL 2

Foster a thriving MS program

Indicator Description:

In order to foster a thriving MS program in statistics, we need a total of 20 students, ideally 10 students per cohort. Any less than this, and our classes fail to run regularly. Any more than this, and the research needs of the students in such a large program exceed the faculty support available.

Criterion Description:

We will recruit enough students to be able to accept a cohort of 10 qualified incoming MS students each Fall semester.

Findings Description:

We are able to accept 10 students each year, but a large number of them are non citizens. Consequently, many of them are unable to travel large distances (or unwilling pay fees which are hidden until just before the start of the school year) and decline our offers. More often than not this is done too late in the summer to find qualified students to take their place, so our planned cohort of 10 students becomes a cohort of 8 or 9.

RELATED ITEM LEVEL 3

Use College Funds for Recruitment

Action Description:

The Dean has created new \$2000 recruitment scholarships, with another \$1000 available to second year students. We will use a new COSET scholarship initiative to recruit more students, both international and domestic. We will study new U.S. entrance restrictions and their impact on our recruitment of international students.

Deliver A Curriculum That Emphasizes Communication Skills

Goal Description:

The curriculum will provide students with opportunities to develop the appropriate speaking and writing skills to function as a professional in the area.

RELATED ITEMS/ELEMENTS -----

Communicating Mathematical Ideas - Oral

Learning Objective Description:

Students will be able to prepare and deliver oral presentations of mathematical material based on a statistics practicum. Students will devlop the ability to critique problems, and provide their own solutions based on statistical analysis.

RELATED ITEM LEVEL 2

Statistics Practicum

Indicator Description:

A statistics practicum should be completed by the students under the guidance of one of the faculty members (practicum supervisor). A letter grade is assigned for the practicum by the supervising faculty based on performance throughout the research project. **Criterion Description:**

All candidates will receive a letter grade by his/her supervising faculty.

Findings Description:

All students in the practicum course received a grade of A or B in the course.

RELATED ITEM LEVEL 3

Continue Successful Practicum Practices

Action Description:

Current practicum students are achieving A or B grades by presenting at statewide conferences and receiving awards. This practice is highly successful and will be continued without change.

Deliver A Curriculum With Appropriate Discipline Specific Skill Sets

Goal Description:

The curriculum will provide students with opportunities to develop the skills typically required of professionals in the area of study.

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Foundation Areas In Probability And Statistics

Learning Objective Description:

Students will have a working knowledge of the foundational topics including regression analysis, design of experiments, multivariate analysis, and mathematical statistics (Bayesian analysis, biostatistics, quality control, nonparametric statistics, sampling theory, Time Series Analysis, and statistical computing).

RELATED ITEM LEVEL 2

Comprehensive Oral Examination

Indicator Description:

A comprehensive oral examination, given by a committee of three faculty members, will be administered to candidates for the degree of M.S. in Statistics which will examine the candidate's knowledge of the primary areas of concentration within the program, as well as the candidates own communication abilities. The committee will then judge the candidates' knowledge of the material according to a previously agreed upon rubric with three levels of comparison: High Pass, Pass, and Fail.

Criterion Description:

All candidates will receive a mark of either "High Pass" or "Pass" for the Multivariate Analysis component of the comprehensive oral exam. The rubric used is the same one shown in the "Mathematical Statistics" criterion.

Findings Description:

All candidates received marks of either "pass" or "high pass" in their oral examination.

RELATED ITEM LEVEL 3

Oral Exam Improvement

Action Description:

We will begin to distinguish High Pass and Pass results to help improve the High Pass rate.

Improve Instruction By TAs

Goal Description:

We will improve our instructional support for TA instruction in our elementary Statistics courses.

RELATED ITEMS/ELEMENTS -----

RELATED ITEM LEVEL 1

Encourage And Train Teaching Assistants For Teaching Learning Objective Description:

Will encourage and assign teaching assistants in elementary statistics courses as instructors.

RELATED ITEM LEVEL 2

Evaluation TA Indicator Description: Teaching evaluations and classroom visits by faculty

Criterion Description:

As many of our teaching assistants are not native speakers of English, a language barrier may be an additional challenge their classroom. **Findings Description:**

A faculty mentor was assigned to all TAs serving as instructor of record. We observed no student complaints about the TAs, either foreign or domestic. We found that TAs value this assistance.

RELATED ITEM LEVEL 3

Continue Faculty Mentoring of TAs

Action Description:

The faculty member assigned as advisor/mentor to TAs was found to be a valuable aid. This practice will be continued. In addition, first-year students will be asked to observe a classroom to prepare for teaching in their second year.

Update to Previous Cycle's Plan for Continuous Improvement

Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

We plan on submitting an application for STAT 1369 to be included in the university core. If approved, we could see a dramatic increase in enrollment in the course as early as Fall 2017. Therefore, a reliance on graduate students to teach this course is inevitable, and we should be prepared for the challenges of training these inexperienced TAs for the classroom. In addition, the preparation of entering students in this course (as opposed to first another core math course such as MATH 1314) will be significantly less than in previous semesters. We therefore will rely on our STAT TAs to provide more tutoring and academic support to underprepared students in the larger (and larger in number) statistics course.

Update of Progress to the Previous Cycle's PCI:

We submitted MATH/STAT 1369 to the core. This has not taken affect yet, but we did see a large increase in student enrollment based on the Provost's new mathematics initiative. A subset of second-year students were selected to teach. This was a larger group than initially hoped, so that oversight will be important. We continue to work on learning support at the University level for underprepared students.

New challenges for 2017-18

Closing Summary:

The 2017-18 will present some new challenges for the six faculty of the MS-Statistics program. One faculty member has retired effective May 2017, while another will move into the position of department chair in Fall 2017. While two visiting assistant professors will be hired during this academic year to help with some of the teaching demands, having only 4 full-time statisticians in the department will be a challenge. A hiring committee will be formed presumably to fill two positions in late Fall 2017 and early Spring semesters which will most certainly consist of the remaining 4 statisticians who aren't serving as chair.