

**Texas A&M International University
Annual Institutional Effectiveness Review (AIER)
for Academic Programs**

Program: Master of Science in Mathematics

Assessment Period Covered: January 1, 2009 to January 31, 2010

Program Coordinator (Preparer of Report) Dr. David Milovich

List Other Program Faculty:

Dr. Eduardo Chappa
Dr. Rohitha Goonatilake
Dr. Juan H. Hinojosa
Dr. Firooz Khosraviyani
Dr. Runchang Lin
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Dr. Qingwen Ni
Dr. Chihiro Oshima
Dr. Chen-Han Sung
Dr. Fuming Wu

Reviewed by Chair: Name _____ Date _____

Reviewed by Dean: Name _____ Date _____

The Annual Institutional Effectiveness Review for Academic Programs is directed at Goal 1: Academics of the Texas A&M International University 2006-2010 Strategic Plan:

Develop, maintain, assess, and improve academic programs, administrative/educational support services and student services, to admit, retain, and graduate students who achieve established learning outcomes designed to prepare them for success in their chosen careers.

Institutional Mission

Texas A&M International University, a Member of The Texas A&M University System, prepares students for leadership roles in their chosen profession in an increasingly complex, culturally diverse state, national, and global society ... Through instruction, faculty and student research, and public service, Texas A&M International University embodies a strategic point of delivery for well-defined programs and services that improve the quality of life for citizens of the border region, the State of Texas, and national and international communities.

Academic Program Mission

The faculty and staff of the Department of Mathematical and Physical Sciences are committed to excellence in teaching, research, service, and outreach. The programs within the Department lead to discovery, analysis, and dissemination of the knowledge of astronomy, computer science, engineering, mathematics, physics, and statistics. The Department provides a foundation in its

disciplines for all graduate and undergraduate students as well as for teacher certification programs for mathematics and physical sciences majors. Our goals are to equip the graduates with the tools necessary to fully participate in a technological society and competitive global environment. The Department is committed to:

- Transmit ideas and knowledge pertaining to disciplines within the Department through teaching, including active learning, and related activities.
- Contribute to the advancement of the disciplines within the Department through quality research and sponsored projects.
- Utilize the Department's resources to serve the University and community.
- Serve as a resource of knowledge and pedagogy of the disciplines within the Department for the benefit of the University and community through outreach activities.

Provide summary of the last cycle’s use of results and changes implemented

Program faculty should evaluate the former cycle. This statement should specify if the outcomes addressed were a continuation of previous ones, new outcomes, or modified versions of previous outcomes. In addition, the statement should include a concise analysis of the assessment data collected during the previous year, a brief explanation of actions taken to address specific outcomes, an evaluation of how these actions contributed to the improvement of the program, and any recommendations formulated. Assessment data—including actual samples of student work—must be viewed and discussed by program faculty during this process.

The Department of Engineering, Mathematics, and Physics decided to assess the outcome related to preparing student success in their chosen careers, by using the result on their Comprehensive Examination. Since no students were eligible to take this exam, no data was collected and hence no assessment was possible.

Selected list of program-level intended student learning outcomes *(It is recommended that programs rotate through their entire set of outcomes over a multi-year period. Programs may focus on one or two outcomes each year, as deemed appropriate).*

1. Students will be able to communicate effectively in written and oral forms, work successfully in teams and understand ethical and social responsibilities.
2. Students will be able to conduct research and pursue a Doctoral degree.
3. Students will have advanced knowledge in a broad range of disciplines in Mathematics, including Algebra, Analysis, Geometry/Topology, and Probability/Statistics.

Section I: Planning and Implementation

Outcome(s)

Identify the outcome(s) that will be focused upon this year

3. Students will have advanced knowledge in a broad range of disciplines in Mathematics, including Algebra, Analysis, Geometry/Topology, and Probability/Statistics.

Please indicate if the outcome(s) is (are) related to writing (QEP).

Methods of assessment to be used: *The explanation should identify and describe the type of assessment(s) that will be used (e.g., survey, questionnaire, observation instrument, test, rubric to*

evaluate performance, standardized examination, action research, interviews, etc.), who will provide the information, and how the data will be obtained.

All students in the program are required to take a Comprehensive Examination, which is the tool that will be used to assess this outcome.

Indicate when assessment(s) will take place

Annual

Criteria/Benchmark(s): *[Specify, if deemed appropriate to assess outcome(s). Criteria/ benchmark(s) may be optional, especially if qualitative measures are used for data collection.]*

70% of the students taking the Comprehensive exam will pass it.

Section II: Analysis of Results

What were the results attained?

Describe the primary results or findings from your analysis of the information collected. This section should include an explanation of any strength(s) or weakness(es) of the program suggested by the results.

During the spring 2009 semester, one student took the Comprehensive exam orally and passed it. The examining committee included Dr. Rohitha Goonatilake, Dr. Chihiro Oshima and Dr. Terutake Abe. The student was examined in the topics of Real Analysis, Topology and Complex Analysis.

What were the conclusions reached?

Should include a brief description of the procedure used for reaching the conclusion(s) based on the evidence collected and describe the process used to disseminate the information to other individuals. For example, if the discussion took place during the annual spring retreat, include a summary from those deliberations using the Meeting Minutes template found on the Project Integrate web page at <http://www.tamtu.edu/integrate/docs/Minutes-Template.doc>. Once completed, submit the minutes to assessment@tamtu.edu.

The student showed mastery in all of the topics. This is not enough information to draw conclusions about the quality of the program, nor to recommend any changes or improvements. This data only shows that the courses in Real Analysis, Topology and Complex Analysis prepared the student satisfactorily for the exam.

Describe the action plan formulated. (The plan may be multi-year in nature.)

Based on the conclusion(s), describe the action plan to be implemented to improve or maintain student learning, including a timeline for implementation.

We will continue to give Comprehensive exams to eligible students and amass more data. We will also consider collecting other forms of data, such as exit survey that allows students to identify potential program improvements, as well as a post-graduation job/school placement survey.

Section III: Resources

Resource(s) to implement action plan:

Describe the resources that will be needed to implement the action plan. Also indicate if the resources are currently available, or if additional funds will be needed to obtain these resources.

Funding

- New Resources Required
- Reallocation of current funds

Physical

- New or reallocated space

Other

- Primarily faculty/staff time
- University/rule procedure change only

Provide a narrative description and justification for requested resources (include linkage to Strategic Plan)

Enter text here

Identify proposed outcomes for the next assessment cycle:

Continuation of present outcome(s) – (Indicate reason for continuation):

We will continue to attempt to assess the same outcomes, since these are one of the most important steps that a student must go through in this program.

New Outcome(s) – (List outcomes below):

Enter text here

Modification of present outcome(s) – (Indicate reason for modification):

Enter text here

Date Completed: March 1, 2010

Submit completed form to integrate@tamiu.edu.

Updated 09/03/2009