

**Texas A&M International University
Core Curriculum Institutional Effectiveness Review (CCIER)**

Core Curriculum Academic Discipline: Natural Sciences

Assessment Period Covered: Sept. 1, 2010 to May 31, 2011

Discipline Coordinator (Preparer of Report): Tom Vaughan

List Other Academic Discipline Faculty:

Addo-Mensah, Beck, Bennett, Cohen, Daniel, Emanuel, Jaramillo, Kidd, Mandal, McReynolds, Mendez, Mott, Quintana, Ramos, Tobin, Wilson, Ynalvez

The Core Curriculum Institutional Effectiveness Review 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.

Core Curriculum Mission

At Texas A&M International University, the Core curriculum introduces students to academic disciplines which form the foundation of human thought: mathematics, science, history, language, literature, the arts, and social and behavioral sciences. Our Core is conceived to open new areas of learning for our students and to foster skills necessary for success in higher education.

As they move through this course of study, students are encouraged, as their knowledge increases, to develop the capacity to articulate and support a thesis, to think critically, to

synthesize their observations and to perceive analogies and relationships between seemingly diverse ideas and intellectual pursuits.

Texas Higher Education Coordinating Board Exemplary Educational Objectives for the following academic discipline: Natural Sciences

1. To understand and apply method and appropriate technology to the study of natural sciences.
2. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
3. To identify and recognize the differences among competing scientific theories.
4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

Section I: Planning and Implementation

Outcome(s): *From the list above, identify the outcome(s) that will be focused upon this year. (It is recommended that academic disciplines rotate through their entire set of Exemplary Educational Objectives over a multi-year period. Thus, disciplines are encouraged to focus only on a few outcomes each year.) To facilitate the completion of this report, please refer to the Core Curriculum Matrix completed for each academic discipline.*

Exemplary Educational Objectives used in the Survey Courses

Survey of Chemistry

2. To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.

Survey of Life Science and Survey of Earth and Planetary Science

4. To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
5. To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

☐ **Please indicate if the outcome(s) is (are) related to writing (Write-On TAMIU).**

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.*

Embedded final exam questions will be used to evaluate each outcome. Professors teaching each of the core courses will choose questions related to the Exemplary Educational Objectives and evaluate the responses to the questions.

Indicate when assessment(s) will take place.

At end of the term. Data from fall and spring semesters may be combined.

Criteria/Benchmark(s) for assessing students' progress in meeting the exemplary objective(s) selected:

Students will attain a mean of 70% on the embedded questions.

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) suggested by the results.

Discipline	# of responses	Mean score
Survey of Life Science		
Outcome 4 (4 questions)	115	70.4%
Outcome 5 (5 questions)	115	77.9%
Survey of Chemistry		
Outcome 2 (4 questions)	278	79%
Outcome 4 (3 questions)	202	80.6%
Survey of Earth & Planetary Science		
Outcome 4 (3 questions)	42	81%
Outcome 5 (3 questions)	61	77%
Overall	813	77.7%

On the embedded final exam questions, ranging from 3-5 per outcome, the students achieved an average of 77.7%.

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](mailto:assessment@tamtu.edu).

Since the overall mean on the embedded questions was 77.7%, the outcomes were met in each assessed course. Results have been shared with all members of the department and will be discussed further in our first departmental meeting in the fall semester.

Describe the action plan formulated.

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

For a more accurate evaluation of the outcomes, more questions will be used for the assessment. Also, in courses that have multiple sections taught by different instructors an effort is being made to use the same embedded questions in the analysis.

Section III: Resources

Resource(s) to implement action plan: No resources are requested.

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

Date Report Submitted: June 28, 2011