Please complete this page for each Student Learning Outcome (minimum of 3) for each of your degree programs.

Degree Program Title: \textbf{Minor Astronomy} \\
Degree Type: \\
Banner/CIP Code: \\
See attached

\textbf{STUDENT LEARNING OUTCOME \#}

1. \textbf{STUDENT LEARNING OUTCOME (SLO):} What will a student be able to do, what knowledge, skills, values will they have, etc., upon graduation from the program that will be assessed? A Student Learning Outcome is a clear concise statement that describes how students can demonstrate their mastery of some element of the academic program goals.

2. \textbf{LINKS TO CURRICULUM \& PROGRAM FACULTY.} What courses support this SLO? How do all program faculty participate in setting the goals, content and learning outcomes of these courses? How do all program faculty participate in analyzing and making recommendations based on the results of student assessments?

3. \textbf{ACTION PLAN: STRATEGIES/METHODS FOR OBSERVING STUDENT LEARNING.} How will data be collected, analyzed, shared? How will faculty observe the accomplishment of this outcome? Please provide specific descriptions for how, when, how often, what course(s), what student performances will be observed, collected and analyzed. Please provide or attach any descriptions of your ACTION PLAN OR PROCESS addressing the who, what, when, where questions for the assessment program.

4. \textbf{CRITERIA FOR SUCCESS: MEASURES \& TARGETS.} What are the standards of progress or criteria used for judging success for the student learning assessment observations? Please attach any assessment tools, standards (rubrics) or other documents used to judge success or achievement of the outcome.

These two additional reports for questions 5\&6 below will be due in May 11, 2012

5. \textbf{ACHIEVEMENT SUMMARY: FINDINGS \& RESULTS.} What are the results of the assessment of this learning objective thus far? Be sure to include the year of the assessment, attach any relevant reports, data tables, etc. Please be specific in your descriptions. Indicating that n\% students took a test or passed an oral exam is not an example of assessment findings.

6. \textbf{PROGRAM ENHANCEMENT.} How has assessment data been used? Please give examples over the last 3 years. What are the specific mechanisms for communicating results and changing courses, curriculum, learning activities within a course, etc.

\textbf{Review and Approval Signatures \& Date:} \\
Program Coordinator if applicable: \\
Department Chair: \\
Dean: \\
\textbf{2/22/2012}
Please complete this page for each degree program, graduate and undergraduate.

Student Learning Outcomes Check Sheet
Due 24 Feb 2012

Degree Program Title: **Minor in Astronomy**  Degree Type:  
Banner/CIP Code:  

Responsible Program Coordinator/Chair completing this form:  

A. Program MISSION Statement: What body of knowledge and/or what skills and qualities will graduates from this program possess upon completion of the degree?

B. Does this program have any culminating experience or capstone course that would capture the cumulative knowledge and accomplishments of graduates of your program? If so, please describe the process by which faculty participate in the design and evaluation of the course and its products/experiences.

In the attached pages, please provide the learning outcomes the faculty as a whole expects from graduates from the program. While you may choose as many outcomes as you wish, it is often a good strategy to focus on the most important goals for students in the first few years of your Student Assessment Program. For example, two or three of the most critical goals would be a good starting point. Please complete questions 1-6 for each Student Learning Outcome you are assessing or plan to evaluate in the next review period on the attached sheet.
Texas A&M University-Commerce

Detailed Assessment Report
2011-2012 Minor, Astronomy

Goals without Outcome/Objective Relationships Specified

G 1: Understanding of Astronomy
Students should demonstrate a fundamental understanding of modern physics and application to astronomy

G 2: Historical Development of Astronomy
Students should demonstrate an understanding of the advancement of astronomy and its historical development.

G 3: Problem Solving
Students should demonstrate advanced analytical, problem solving and critical thinking skills

Student Learning Outcomes/Objectives, without Goals, along with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Physical Laws
a) demonstrate an understanding of a) fundamental laws of physics as applied in astronomy, b) demonstrate an understanding of Newton’s Laws & Kepler’s Laws c) recall physical laws used to describe astronomical behavior and celestial mechanics

Related Measures

M 1: Exams
This outcome will be assessed through the administration of course exams.
Source of Evidence: Standardized test of subject matter knowledge

M 2: Laboratory Assignments
Students will show mastery of the material through laboratory assignments
Source of Evidence: Written assignment(s), usually scored by a rubric

SLO 2: History of Astronomy
Recall historical events in astronomy from the ancient Greeks to modern astronomers through the advancement contributions in science.

Related Measures

M 1: Exams
This outcome will be assessed through the administration of course exams.
Source of Evidence: Standardized test of subject matter knowledge

SLO 3: Quantitative Analysis
a) demonstrate an understanding of mathematical functions as applied to celestial navigation and problem solving, b) interpret mathematical models such

as formulas, graphs and tables and draw inferences from the data, c) interpret experimental data

Related Measures

M 1: Exams
This outcome will be assessed through the administration of course exams.
Source of Evidence: Standardized test of subject matter knowledge

M 2: Laboratory Assignments
Students will show mastery of the material through laboratory assignments
Source of Evidence: Written assignment(s), usually scored by a rubric