Degree Program Assessment
(ATSC) Atmospheric Sciences
BS - 2010-2011

Explanation of changes made based on the results and analysis of the 2009-2010 cycle of assessment:

Dr. Anne Case Hanks and the department head, Dr. Gary L. Stringer, met and discussed the results of the 2009-2010 cycle. Since all student learning targets were met or exceeded, there are no immediate changes to the program. However, there are curricular changes that occurred due to state mandates. Changes were made to the degree requirements this year to comply with the 120-hour degree plan mandated by the Board of Regents. These changes included reducing the number of ATMS hours by three. The major concepts of the dropped class were incorporated into other courses. There appears to be a need to revise the requirements of the degree program to better match recommendations of national atmospheric science organizations. When these degree requirements occur, there will also need to be a revision of some of the student learning outcomes. However, Dr. Mills has resigned effective May 18, and the new professor will not be at ULM until January 2011. Therefore, it was decided that changes to the degree program should not be considered until the new professor, Dr. Hopper, arrives and can have input.

Student Learning Outcome:
Students will recognize synoptic and mesoscale weather features.

Measures:
1. Weather Map Analysis
2. Selected Exam Questions

Target:
1. 75% of students will identify 70% of possible synoptic-level frontal and pressure features on a given surface weather map. Objective measure will be a multiple choice, short answer and feature-identification in ATMS 401.
2. 75% of students will identify 70% of possible mesoscale-level frontal and pressure features on a given surface weather map. Objective measure will be a multiple choice, short answer and feature-identification in ATMS 402.

Results and Analysis:
100% of the ATMS students identified 70% of possible synoptic-scale frontal and pressure features given. Objective measures include an isentropic analysis lab exercise that included open-ended critical thinking questions, two weather briefings, two forecast discussions, and a case-study final project during ATMS 4002 taught by Dr. Hopper in Spring 2011.

86% (6 of 7) of the ATMS students identified 70% of possible mesoscale frontal and pressure features on a given surface weather map on the ATMS 4002 midterm exam given during Spring 2011 by Dr. Hopper.
**Student Learning Outcome:**
Students will explain the development of extratropical cyclones

**Measures:**
1. Objective Meteorological Analysis
2. Selected Exam Questions

**Target:**
1. 75% of students will correctly identify 70% of the components in a three-dimensional profile of an extratropical cyclone.
2. Objective measures are to label features on a figure; multiple choice and short answer exam questions in ATMS 306 (Fall) and 307 (Spring) and ATMS 308 (Spring)

**Results and Analysis:**
87.5% of ATMS students correctly identified 70% of the components in a three-dimensional profile on an extratropical cyclone on a selected lab assignment (Lab 4) and the final quiz in ATMS 3008 taught by Dr. Hopper in Spring 2011.

---

**Student Learning Outcome:**
Students will use meteorological tools and thermodynamic theory to predict thunderstorm development.

**Measures:**
1. Selected Exam Questions
2. Skew-T/Log-p Exercise

**Target:**
75% of students will correctly identify 70% of features on a "Skew-T" Diagram depicting thunderstorm development, including lifting condensation level, cloud condensation level, and other essential elements. Objective measures are completion of three standardized, norm-referenced and case-specific Skew-T Diagrams; one for stable weather, one for conditionally stable weather and one for unstable weather.

**Results and Analysis:**
80% of students were able to correctly identify key features on a Skew-T diagram.

---

**Student Learning Outcome:**
Students will demonstrate proficiency in oral and written communication.

**Measures:**
1. Oral Presentation of Weather Forecast
**Target:**
1. 75% percent of students will, with a 70% success rate, compose a formal, written weather discussion using correct meteorological terminology and proper spelling and grammar. Subjective measures include posting discussions on an electronic forum for scoring by 1) the instructor of record and 2) an outside faculty member (IAW procedures for subjective measures).
2. 75% of students, with a 70% success rate, will conduct an oral presentation of a weather discussion. Subjective rubric includes ease of understanding, correct use of terms and interpretation of terminology. Scoring is by the instructor of record.

**Results and Analysis:**
100% of students demonstrated proficiency in oral and written communication with a 70% passing rate in the final presentation of ATMS 3060 taught by Dr. Case Hanks.

93% of students composed a formal, written weather discussion at a 70% success rate in ATMS 3006 (7 of 8) and ATMS 4002 (7 of 7) during Spring 2011. 100% of students delivered oral weather briefings at a 70% success rate during these classes as well. Dr. Hopper graded each written and oral forecast discussion.

**Explanation** of changes made based on the results and analysis of the 2010-2011 cycle of assessment:
Since objectives were met, there are no changes to the current SLO targets and objectives.