



SOEST
SCHOOL OF OCEAN AND EARTH
SCIENCE AND TECHNOLOGY

Connecting Courses to Competency: Mapping the ATMO Curriculum

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Introduction

The Department of Atmospheric Sciences has BS, MS and PhD Programs

- BS degree has “strict” requirements to meet federal expectations for employment in the National Weather Service
→ determines courses, content & skills
- Current Learning Assessment involves using final course grades (#’s of A, B, C, etc.) to determine how many students meet our minimum expectation of success (A through C-)

Current ATMO PLOs

1. Know the horizontal and vertical variation of temperature, moisture and wind in the atmosphere.
2. Recognize the various scales of motion from turbulence to planetary scales.
3. Evaluate the accuracy and precision of standard meteorological instrumentation.
4. Apply basic atmospheric thermodynamic principles such as potential temperature, equivalent potential temperature, vapor pressure, mixing ratio and the first and second laws of thermodynamics to understand weather and climate issues.
5. Apply basic atmospheric dynamic principles including equations with partial derivatives such as the equation of motion, various approximations of that equation, conservation of a quantity and key kinematic concepts such as divergence and vorticity to understand weather and climate problems.
6. Predict the weather by diagnosing observations and interpreting guidance products.
7. Design and execute basic computer programs to determine desired variables from raw data.
8. Communicate study results and forecasts in both written and oral forms.
9. Understand how the Hawaiians viewed weather phenomena and how weather and climate shaped their culture.

Curriculum Map Improvement – Steps Taken

Main Goal: Update and Improve the current Curriculum Map by reevaluating the Introduce, Reinforce, Master (IRM) and Assessment (A) nomenclature to better suit the current course offerings and requirements .

- 1 Met with faculty, collected current/most updated syllabi
- 2 Evaluated individual course syllabi, met with individual faculty to clarify SLOs
- 3 Identified I, R, M & A for each course – compared to previous curriculum map
- 4 Generated NEW Updated Curriculum Map based on existing courses/syllabi
- 5 Ongoing – Identify SLOs that have good representation across curriculum. Set targets for next ground of Assessment

NEW ATMO Curriculum Map (#s refer to PLOs)

Courses	1	2	3	4	5	6	7	8	9
101	I	I	I			I			I
101L	I	I	I	I	I	I			I
102	I	I	I						I
200	R	R	I	R	R	I	I		R
302	M	I	R	M	I	I	R	I	
303	M	R	I	R	R	R	R	I	
304	M	M	R						R
305	R	R	M&A			I	I	R	R
320	R	R	R				I	R	R
402	R	M	I	M&A	M&A	I	M		
405	M&A	M&A	M	R	R			R	
412	M&A	R	M	M	M	M&A	R	M&A	R
416	M&A	R	M	M	M	M&A	R	M&A	R
449	M					M&A	M&R	M&A	
499	M&A	M&A	M	M&A	M&A	M&A	M	M&A	

Action Plan & Next Steps

Building Buy-In for Future Assessments

Inspiring Buy-In from the faculty that assessment is important and that key-assignments can be used rather than just an overall grade will be important moving forward!

Highlight Expertise

Continue to make sure faculty feel respected and that their courses/assignments aren't being judged, that we're in it together to develop the best programs and PLOs. Stress the importance of their expertise and how they can be a crucial part of the process.

Reward Participation

Continue to praise contributions of faculty and students during and after Assessment meetings. Continue to reward engagement when possible (e.g. annual reviews, T&P).

New or Revamped

Since the previous curriculum map was developed that added to our PLOs and SLOs:

2 New Courses have been Added:

- ATMO 304 – Severe Weather
- ATMO 449 – Intro to Climate Modeling

5 Courses were Significantly Updated:

- ATMO 101 and 101L – Introduction to Weather and Climate
- ATMO 200 – Atmospheric Processes and Phenomena
- ATMO 320 – Programming for Meteorologists

ATMO Department

- 10 Tenured/tenure-track faculty, 1 0.5 FTE instructor, 1 Lecturer, 2 TAs
- 18 Undergraduates and ~40 MS and PhD
- We graduate ~5 Undergraduates and ~5 Graduate Students per year
- ATMO, formerly MET has been part of UHM and SOEST for over 60 years.