

**Assurance of Student Learning
2019-2020**

Ogden College of Science and Engineering

Department of Geography and Geology

Meteorology #578

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Use this page to list learning outcomes, measurements, and summarize results for your program. Detailed information must be completed in the subsequent pages.

Student Learning Outcome 1: Students completing the Meteorology program will be able to demonstrate understanding of the theoretical principles surrounding the basic equations and conservation laws that govern atmospheric motion and energy transfer. (*Theoretical Meteorology*)

Instrument 1	Direct: A comprehensive exam is given during the final senior semester to all students completing the Meteorology program. The exam consists of four questions that represent key concepts from each of the eight upper-division courses in the B.S. degree in Meteorology curriculum.
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Program Summary (Briefly summarize the action and follow up items from your detailed responses on subsequent pages.)

As is often the case, the May 2020 graduates of the Meteorology Program had a 100% success rate in finding employment related to their major or minor. Two students now work as broadcast meteorologists, four students were accepted in R1 graduate programs with full funding, one student now works for the National Weather Service, one student now works for the Weather Service in Oman, and one students works as a GIS analyst. Since 2010, over 90% of our graduates work in Meteorology or a field related to their minor.

The philosophy of the Meteorology Program is to emphasize employable skillsets as a core activity in the curriculum. The field of meteorology is quite competitive with regard to written and oral communication skills, computer skills, interpretative and independent problem solving, among others. Over the years, faculty remain in close contact with the top-sought employers in the field to collect necessary feedback regarding employable students. This information is brought directly into the classroom via assignments, activities, and initiatives. Further, faculty and students in the Meteorology Program routinely invite and host these employers (multiple times each semester) to give workshops, presentations, and network. Faculty and students in the program have also developed strong alumni relations for additional feedback and advice. We feel it is important for the students to hear the advice not only from their professors and mentors, but especially directly from employers and alumni for a well-rounded perspective on how to be successful upon graduation. **In 2018 the WKU Meteorology Advisory Board (14 members) was created** and is comprised of established, successful professionals and alumni across all sectors (government/NWS, broadcast, private sector, emergency management, and academic). Feedback from the Advisory Board will guide the WKU Meteorology Program into the future.

One area of feedback we consistently hear from employers is ensuring graduates have applied forecasting and communication skills. To that end, White Squirrel Weather (WSWX) was created in 2017 to be the WKU campus weather service. WSWX is an applied research, professional work-force service-learning initiative comprised of students who provide real-time weather observations and public and privatized forecast content to the campus and community. The intent of this initiative is to improve hazards mitigation, emergency preparedness and management, and education outreach. In that way, WSWX develops employable students for post-graduate success, while providing tangible benefits across the university spectrum. Specifically, the Meteorology Program and WSWX work directly with these WKU entities: Athletics, Public Broadcasting,

Campus and Community Events, Alumni, Environmental Health and Safety, Facilities and Management, Police, Human Resources, Admissions, Information Technology, Parking and Transportation, Intramurals, Band, Military Science, and the Army National Guard.

Student Learning Outcome 1			
Student Learning Outcome	Students completing the Meteorology program will be able to demonstrate understanding of the theoretical principles surrounding the basic equations and conservation laws that govern atmospheric motion and energy transfer. (<i>Theoretical Meteorology</i>)		
Measurement Instrument 1	A comprehensive exam is given during the final senior semester to all students completing the Meteorology program. The exam consists of four questions that represent key concepts from each of the eight upper-division courses in the B.S. degree in Meteorology curriculum.		
Criteria for Student Success	The average grade on the 32-question exam should be no less than 80%. For no individual course should the four-question average score be less than 60%.		
Program Success Target for this Measurement	80%	Percent of Program Achieving Target	80%
Methods	<ul style="list-style-type: none"> • Overall score 80% N = 9 <ul style="list-style-type: none"> ○ <i>Theoretical Meteorology sequence</i> <ul style="list-style-type: none"> ▪ Physical Meteorology 83% ▪ Physical Climatology 92% ▪ Dynamic Meteorology I 64% ▪ Dynamic Meteorology II 58% ○ <i>Weather Analysis sequence</i> <ul style="list-style-type: none"> ▪ Weather Analysis and Forecasting 67% ▪ Synoptic Meteorology 97% ▪ Mesoscale Meteorology 83% ○ <i>Weather Instrumentation sequence</i> <ul style="list-style-type: none"> ▪ Meteorological Instruments 92% 		
Based on your results, highlight whether the program met the goal Student Learning Outcome 1.		Met	Not Met
Actions (Describe the decision-making process and actions for program improvement. The actions should include a timeline.)			

These results are similar to past cohorts dating back to 2010 when this means of assessment was first used. Since the 2019-20 cohort met the program student learning outcome goals, we will not be making any major changes to the curriculum at this time. Since the curriculum for the B.S. in Meteorology degree is essentially standardized across all Universities and taken from guidelines set forth by both the National Oceanic and Atmospheric Administration (NOAA) and the American Meteorological Society (AMS), there is no real reason to make dramatic changes to the curriculum. We have noted the fact that one course (Dynamic Meteorology II) fell below the goal of 60% for any individual course, but considering that this course was taught during Spring 2020 during the COVID-19 pandemic and over half the class was taught via distance learning we are not concerned about the 58% score.

Follow-Up (Provide your timeline for follow-up. If follow-up has occurred, describe how the actions above have resulted in program improvement.)

No follow up is needed at this time.

Next Assessment Cycle Plan (Please describe your assessment plan timetable for this outcome)

SL1) The Theoretical Meteorology 32 question assessment is given every year and will occur again in Spring 2021. SL2) Our Applied Meteorology assessment of our students map analysis and map discussion will occur in Spring 2021 in concurrence with the offering of METR 437 – Mesoscale Meteorology. SL3) Our third assessment for 2020-21 will be our assessment of our student internship experiences.