

METEOROLOGY, BACHELOR OF SCIENCE (578)

Program Coordinator

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The B.S. in Meteorology degree at WKU is the first and largest meteorology program in Kentucky or Tennessee that meets all the Federal Civil Service requirements (GS-1340) for employment by the National Weather Service and enables TV broadcast meteorologists to immediately pursue the "Certified Broadcast Meteorologist" program of the American Meteorological Society upon graduation. In addition to preparing students for immediate employment as meteorologists, the combination of advanced theoretical and applied coursework as well as experience with meteorological instrumentation and computer programming will provide a foundation for students who wish to pursue graduate school in the atmospheric sciences. Students will become more directly involved in faculty-sponsored research, increased co-authorship of peer-reviewed research articles, and increased presentation of research results at professional meetings and conferences.

Students will also have the opportunity to work for White Squirrel Weather (WSWX), which acts as the WKU weather service, where students make weather observations and weather forecasts to provide decision support to a variety of WKU entities, including WKU Athletics, Environmental Health and Safety, and WKU Admissions.

Program Requirements (50 hours)

A baccalaureate degree requires a minimum of 120 unduplicated semester hours. More information can be found at www.wku.edu/registrar/degree_certification.php. (https://www.wku.edu/registrar/degree_certification.php)

Students who began WKU in the Fall 2014 and thereafter should review the Colonnade requirements located at: <https://www.wku.edu/colonnade/colonnaderequirements.php>. (<https://www.wku.edu/colonnade/colonnaderequirements.php>)

The major in Meteorology leads to a Bachelor of Science in Meteorology and requires a minimum of 50 semester hours of meteorology, geography, GIS, and computer science. A minor program is not required. Other required courses in physics and mathematics total an additional 25 semester hours. Students majoring in meteorology will learn the key concepts and skills necessary to qualify as a meteorologist for the National Weather Service, and to meet the standards of the American Meteorological Society.

Required Courses

| Code | Title | Hours |
|----------|----------------------------------|-------|
| METR 121 | Meteorology | 3 |
| METR 122 | Aviation Meteorology | 3 |
| CS 170 | Problem Solving and Programming | 3 |
| GEOG 300 | Writing in the Geosciences | 3 |
| GISC 316 | Geographic Information Systems I | 4 |
| METR 324 | Weather Analysis and Forecasting | 3 |
| GEOG 391 | Geoscience Data Analysis | 4 |
| METR 431 | Dynamic Meteorology I | 3 |

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|----------|------------------------|---|
| METR 432 | Synoptic Meteorology | 3 |
| METR 433 | Dynamic Meteorology II | 3 |
| METR 437 | Mesoscale Meteorology | 3 |
| METR 438 | Physical Meteorology | 3 |

Meteorology Technique Course

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|-------------|--|---|
| METR 325 | Meteorological Instrumentation and Measurement | 3 |
| or METR 335 | Satellite/Radar Meteorology | |

Total Hours 41

In addition to the required courses, select 9 hours from any 200-level or above METR course

| Code | Title | Hours |
|-----------------------------------|--|-------|
| Suggested courses include: | | |
| METR 322 | Global Climate Systems | 3 |
| METR 325 | Meteorological Instrumentation and Measurement | 3 |
| METR 326 | Applied Meteorology / Climatology | 3 |
| METR 335 | Satellite/Radar Meteorology | 3 |
| METR 422 | Physical Climatology | 3 |
| METR 425 | Field Methods in Severe Weather Analysis and Forecasting | 3 |
| METR 430 | Meteorological Computing | 3 |
| METR 439 | Atmospheric Modeling | 3 |
| METR 460 | Climate Teleconnections | 3 |
| METR 475 | Selected Topics in Meteorology | 3 |

Total Hours 9

Additional Courses Required Outside of the Major

| Code | Title | Hours |
|---------------------|--|-------|
| PHYS 255 & PHYS 256 | University Physics I and University Physics I Lab | 5 |
| PHYS 265 & PHYS 266 | University Physics II and University Physics II Laboratory | 5 |
| MATH 136 | Calculus I | 4 |
| MATH 137 | Calculus II | 4 |
| MATH 237 | Multivariable Calculus | 4 |
| MATH 331 | Differential Equations | 3 |

Total Hours 25

Finish in Four Plan

First Year

| Fall | Hours | Spring | Hours |
|----------|-------|------------------------|-----------|
| METR 121 | | 3 MATH 137 | 4 |
| ENG 100 | | 3 METR 122 | 3 |
| MATH 136 | | 4 HIST 101 or HIST 102 | 3 |
| GEOG 110 | | 3 COMM 145 | 3 |
| GEOG 175 | | 2 ENG 200 | 3 |
| | | 15 | 16 |

Second Year

| Fall | Hours | Spring | Hours |
|----------|-------|------------------------------|-------|
| MATH 237 | | 4 MATH 331 | 3 |
| CS 170 | | 3 METR 324 | 3 |
| GISC 316 | | 4 World Language or Elective | 3 |

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|---------------------------------------|--------------|-----------------------------------|--------------|---|
| GEOG 226 | | 3 Colonnade - Social & Behavioral | | 3 |
| | | General Elective | | 3 |
| | | 14 | 15 | |
| Third Year | | | | |
| Fall | Hours | Spring | Hours | |
| METR 431 | | 3 METR 433 | | 3 |
| GEOG 300 | | 3 Colonnade - Arts & Humanities | | 3 |
| METR 335 | | 3 METR 438 | | 3 |
| PHYS 255 & PHYS 256 | | 5 PHYS 265 & PHYS 266 | | 5 |
| METR Elective | | 3 | | |
| | | 17 | 14 | |
| Fourth Year | | | | |
| Fall | Hours | Spring | Hours | |
| METR 432 | | 3 METR 437 | | 3 |
| GEOG 391 | | 4 METR Elective | | 3 |
| Colonnade - Connections | | 3 Colonnade - Connections | | 3 |
| METR Elective or Independent Research | | 3 Colonnade - Connections | | 3 |
| METR 325 | | 3 General Elective | | 1 |
| | | 16 | 13 | |

Total Hours 120

- 120 Hours total are required in the program, with 42 hours at the 300/400 level.
- Summer courses, including Study Abroad, Field Camps, and other independent research opportunities, can reduce the number of hours required in the regular semesters.
- Any of the courses can be moved from semester to semester to take advantage of courses when offered.
- The WKU Colonnade Program requires a minimum of 39 hours, with several required courses in the Geography program that can be double-counted. METR/GEOG courses marked * count for Colonnade Credit.
- Colonnade Connections courses are restricted to Juniors/Seniors, unless 21 credit hours of Colonnade Explorations and Foundations courses have already been completed. Three disciplines are required for Connections credit (METR, GEOG, GEOL, and GISC count as separate disciplines).

REQUIRED IN THE MAJOR (48 hours): **CORE COURSES** = METR 121*, 122, CS 170, GEOG 300*, 391, METR 324, 431, 432, 433, 437, GEOG 499 (36 hours); **ELECTIVE COURSES** = any 12 hours of approved METR or equivalent coursework; **PLUS** PHYS, 255 256, 265, 266, MATH 136*, 137*, 237, 331.