

METEOROLOGY PROGRAM
Department of Earth and Atmospheric Sciences

Meteorology is the science of the atmosphere. Meteorologists are employed in operational meteorology, meteorological research, applied meteorology, and the media. Meteorologists study global weather and climate, and investigate the influence that human beings exert on earth’s climate. The Meteorology Computer Laboratory provides access to real-time weather data and analysis software supported by the UNIDATA Program. The Bachelor of Science degree conforms to the American Meteorological Society and National Weather Service recommendations for an undergraduate meteorology degree. A mathematics minor is a requirement of the meteorology major. Students should contact a meteorology faculty member to discuss degree programs, career opportunities, and graduate school options. Contact the Earth and Atmospheric Sciences Department for additional information: www.msudenver.edu/eas or <https://msudenver.edu/eas/meteorology-program/>.

Meteorology Major for Bachelor of Science

Required Core - 35 credits	Prerequisites	Semester	Credit Hours
____ MTR 1400 Weather and Climate	(none)	F, S, Su	3
____ MTR 2020 Weather and Climate Lab	Pre/Coreq MTR 1400*	F, S	1 (lab)
____ MTR 2410 Weather Observing Systems	MTR 2020	S	3 (with lab)
____ MTR 3330 Climatology	MTR 2020	S	3 (with lab)
____ MTR 3400 Synoptic Meteorology	MTR 2020	F	3
____ MTR 3410 Weather Analysis Techniques	MTR 3400	S	3 (with lab)
____ MTR 3430 Atmospheric Thermodynamics	MTR 2020,MTH 2410,PHY 2311/21	F20,S22	3
____ MTR 3440 Physical Meteorology	MTR 2020,MTH 2410,PHY 2311/21	S20,S21	3
____ MTR 3450 Dynamic Meteorology	MTR 2020,MTH 2420,PHY 2331	F	3
____ MTR 4400 Advanced Synoptic Meteorology	MTR 3450, MTH 3420, PHY 2331	S	4 (with lab)
____ MTR 4500 Mesometeorology	MTR 3410 and MTH 1410	S21	3
____ MTR 4600 Meteorology Research Seminar	Senior Standing + 12 UD credits	S20,F21	3

**Successful completion of Quantitative Literacy is required; MTH 1110 College Algebra is recommended*

Approved Meteorology Electives - Select at least 8 credits

____ MTR 3100 Air Pollution	MTR 2020 or ENV 1200	F19,some falls	3
____ MTR 3420 Radar and Satellite Meteorology	MTR 2020 and MTH 1110	F20, ?	3 (with lab)
____ MTR 3500 Hazardous Weather	MTR 1400 or MTR 2020 or AES 1400	some springs	3
____ MTR 3710 Meteorology Internship	See MTR Advisor	F, S, Su	2 – 6
____ MTR 3777 Field Observations of Severe Weather	MTR 2410, MTR 3410	Su (May)	3 (field)
____ MTR 3920 Directed Study in Meteorology	Instructor Permission	F, S, Su	2 – 6
____ MTR 4210 Forecasting Laboratory (repeatable)	MTR 3410	F, S	1 (lab)

Required Mathematics Minor - 24 credits (3 credits apply to General Studies, Quantitative Literacy)

____ MTH 1410 Calculus I	MTH 1110, and MTH 1120 or 1400	F, S, SU	4
____ CS 1050 Computer Science I (with Java)	readiness for MTH 1110	F, S, SU	4
or MTH 2520 R Programming	MTH 1110	Usually S	4
or MTH 290B Scientific Computing with Python	MTH 2410	F19, ?	4
____ MTH 2410 Calculus II	MTH 1410 or MTH 1450 or HON 2100	F, S, SU	4
____ MTH 2420 Calculus III	MTH 2410	F, S, SU	4
____ MTH 3210 Probability and Statistics	MTH 2410	F, S, SU	4
____ MTH 3420 Differential Equations	MTH 2420	F, S, SU	4

Physics and Chemistry - 13 credits (6 credits apply to General Studies, Natural Science)

____ PHY 2311 General Physics I	MTH 1410	F, S, SU	4
____ PHY 2321 General Physics Lab I	concurrent with PHY 2311	F, S, SU	1
____ PHY 2331 General Physics II	MTH 2410, PHY 2311, 2321	F, S, SU	4
____ CHE 1800 General Chemistry I	Pre/Coreq MTH 1110	F, S, SU	4

Additional General Studies Requirements - 24 credits

_____	Written Communication.....	3
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_____	Quantitative Literacy (satisfied by Math minor)	
_____	Oral Communication	3
_____	Arts and Humanities	6
_____	Historical	3
_____	Natural and Physical Sciences (satisfied by Physics and Chemistry courses)	
_____	Social and Behavioral Sciences I	3
_____	Social and Behavioral Sciences II	3

Global Diversity Requirement

_____	Global Diversity Course (see Catalog, MTR 1600 Global Climate Change cannot count for this requirement...)	3
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Multicultural Requirement

_____	Multicultural Course (see Catalog)	3
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Senior Experience Graduation Requirement

_____	Satisfied by MTR 4600 Senior Experience	
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General Electives - 16 credits

These are some recommended electives that enhance the Meteorology major, but you may choose courses from any department you wish. (See Catalog for descriptions and prerequisites).

- AES 3460-3 Weather for Aircrews
- CAS 3430-3 Performance for Broadcasting (this will soon be under Journalism, JRN)
- CAS 3440-3 Television Production (this will soon be under Journalism, JRN)
- CHE 3890-3 Science and Public Policy
- COM 2610-3 Intro to Technical Writing
- CSS 1510-4 Computer Programming: Fortran (can replace CS requirement)
- ECO 3450-3 Environmental Economics
- ENV 1200-3 Intro to Environmental Science
- ENV 2000-3 Applied Pollution Science
- ENV 3700-3 Mountain Environments
- ENV 4200-3 Environmental Policy and Planning
- ENV 4960-3 Global Environmental Challenges
- GEG 1100-3 Intro to Physical Geography
- GEG 1700-3 Principles of Sustainability
- GEG 2020-3 Geography of Colorado
- GEG 2200-3 Geography of the U.S
- GEG 3720-3 Global Sustainable Development
- GEL 1150-3 *Physical Oceanography*
- GIS 1220-3 Intro to Geospatial Sciences
- GIS 2250-3 Geographic Info. Systems
- GIS 4810-4 GIS Programming (in Python)
- GIS 4840-3 Remote Sensing
- MET 1040-3 Introduction to Engineering
- MTH 2140-2 Computational Matrix Algebra
- MTH 2520-4 R Programming (can replace CS requirement)
- MTH 3440-4 Partial Differential Equations
- MTH 4480-4 Numerical Analysis I
- MTH 4490-4 Numerical Analysis II
- MTR 1600-3 Global Climate Change
- PHY 3411-3 Thermal Physics

Total credits for Meteorology Major..... 120

Updated July 23, 2019