METRO 10L Course Outline as of Fall 2019

CATALOG INFORMATION

Dept and Nbr: METRO 10L Title: WEATHER AND CLIMATE LAB
Full Title: Weather and Climate Lab
Last Reviewed: 9/24/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	0	17.5	Lecture Scheduled	0
Minimum	1.00	Lab Scheduled	3.00	6	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 0.00 Total Student Learning Hours: 52.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Hands-on lab activities exploring weather and climate phenomena. This class is the lab component for Introduction to Weather and Climate (METRO 10). Emphasis is placed on analysis and interpretation of weather reports, forecasts, surface weather maps, upper level air charts, satellite and radar imagery, and other remotely sensed data. Climate classification and climate data will also be included.

Prerequisites/Corequisites:
Course Completion or Current Enrollment in METRO 10

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Hands-on lab activities exploring weather and climate phenomena. This class is the lab component for Introduction to Weather and Climate (METRO 10). Emphasis is placed on analysis and interpretation of weather reports, forecasts, surface weather maps, upper level air charts, satellite and radar imagery, and other remotely sensed data. Climate classification and

climate data will also be included. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion or Current Enrollment in METRO 10
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC.
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
	B3	Laboratory Activity		Fall 1981	
IGETC:	**Transfer Area**			Effective:	Inactive:
	5C	Fulfills Lab Requirement		Fall 1981	
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:	

CID:

Certificate/Major Applicable:
Major Applicable Course

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Apply scientific techniques to meteorology and climatology.
2. Locate, analyze and interpret weather data and maps.
3. Compare and contrast weather forecasting methods.
4. Explain how geography affects weather and climate patterns.

Objectives:
During this course, the student will:
1. Conduct experiments and analyze data related to temperature, density, humidity, and other weather elements.
2. Examine, construct, and decode station data.
3. Interpret satellite imagery and radar returns.
4. Analyze and decipher weather maps.
5. Differentiate and critique forecasting methods.
6. Describe how geographical features influence weather.
7. Classify and differentiate climates.

Topics and Scope:

I. Geography of North America
   A. Place names
   B. Geographical features
II. Meteorological Data

A. Weather elements
1. Air temperature
2. Air pressure
3. Air density
4. Wind
5. Humidity
6. Clouds
7. Precipitation
8. Visibility

B. Measurement scales
C. Data analysis

III. Earth-Sun Relationships and Seasonality
IV. Atmosphere
A. Composition
B. Vertical structure

V. Surface Weather Maps
A. Station models
B. Isopleths
C. Fronts

VI. Upper Air Charts
VII. Atmospheric Data Collection
A. Satellite imagery
B. Surface radar
C. Weather balloons
D. Other remote sensing devices

VIII. Forecasting
A. Methods
B. Accuracy and reliability
C. Common uses and applications

IX. Weather Services
A. Sources
1. National Weather Service and other governmental agencies
2. Private services

B. Source reliability

X. Climate
A. Classification
B. Climate change

Assignment:

1. Assigned readings (5-20 pages per week)
2. Written assignments (1 - 2)
3. Lab exercises (10-17)
4. Quizzes (5-17)
5. Exams (1-4)

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written assignments	Writing 5 - 10%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab exercises	Problem solving 30 - 60%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, exams	Exams 30 - 60%

Other: Includes any assessment tools that do not logically fit into the above categories.

Participation and attendance	Other Category 0 - 10%

Representative Textbooks and Materials:
Weather Studies Investigations Manual. American Meteorological Society. Current edition
Laboratory Exercises for Elements of Weather. 3rd ed. Stampone, Mary. Kendall/Hunt Publishing Company. 2017
Exercises for Weather and Climate. 9th ed. Carbone, Greg. Pearson. 2016

Instructor prepared materials