

CATALOG INFORMATION

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Dept & Nbr: EAS 211 Title: WEATHER AND CLIMATE

Full Title: Weather and Climate

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 3.0	Lecture	3.0	17	Lecture	51.0
Min: 3.0	Lab	0.0		Lab	0.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	3.0		Contact Total	51.0
	Non-contact DHR	0.0		Non-contact DHR	0.0

Title 5 Category: 01 AA Degree Applic
Grading: GC Credit course for grade or CR/NC
Repeatability: 00 No repeatability allowed or defined
Also listed as:

CATALOG DESCRIPTION:

This course introduces the key aspects involved in understanding weather patterns and our changing climate. By studying atmospheric layering and function, the Earth-Sun relationship, and the air mass modification and air circulation patterns within the troposphere, meteorological phenomenon are classified and described with common examples. Components critical for climate characterization are explored in order to understand global climate change.

PREREQUISITES:

COREQUISITES:

RECOMMENDED PREPARATION:

ENG 80 or qualification for ENG 200 through the assessment process.

LIMITS ON ENROLLMENT:

SCHEDULE OF CLASSES INFORMATION:

Recommended: ENG 80 or qualification for ENG 200 through the assessment process.

The Earth's atmosphere is critical for life, and its ever-changing patterns keep us all focused on the air around us. This course is designed to give you an understanding of basic weather and climate parameters, the causes of severe weather, and factors in weather and climate forecasting. From day-to-day weather knowledge to an understanding of modern issues regarding Earth's changing climate, this course is packed with practical information for science and non-science majors. (Grade or CR/NC)
Transfer Credit: UC.

ARTICULATION and CERTIFICATE INFORMATION

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ASSOCIATE DEGREE: Effective: FALL 2004 Inactive:
 Area: A NATURAL SCIENCES

CSU GE: Effective: FALL 2004 Inactive:
 Transfer area: B1 PHYSICAL UNIVERSE

IGETC: Effective: FALL 2004 Inactive:
 Transfer area: 5A PHYSICAL SCIENCES

CSU TRANSFER: Effective: Inactive:

UC TRANSFER: TRANSFERABLE Effective: FALL 2004 Inactive:

CAN:

CERTIFICATE APPLICABLE: N NOT CERTIFICATE/MAJOR APPLICABLE

APPROVAL AND DATES

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Version 01 Submitted by: STEVE CARDIMONA Date: 01/06/2004
 Department approved: Date:
 Curriculum approved: 02/20/2004 Version approved: 02/20/2004
 Prerequisites approved: 02/20/2004 Last reviewed: 02/20/2004
 Term effective: FALL 2004 Last taught: SPRING 2008 Inactive:

COURSE CONTENT

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OUTCOME AND OBJECTIVES:

1. Analyze the geometric and energy relationships between the Earth and the sun.
2. Differentiate between standard weather map symbols, and evaluate the information they deliver.
3. Describe the relationship between specific weather data and contours of the data on a map.
4. Distinguish between the different conditions that affect air humidity.
5. Evaluate large-scale parameters associated with weather variability.
6. Identify atmospheric processes and interpret the resulting circulation effects.
7. Compare and contrast air mass lifting mechanisms.
8. Identify various precipitation types and evaluate their relationship with cloud development.
9. Develop a model for atmospheric circulation and the creation of mid-latitude cyclones.
10. Differentiate between various weather forecasting techniques.
11. Formulate reasonable ways to forecast weather related to different observation scales.
12. Define key factors related to local climate.
13. Determine various Earth and atmospheric processes that can create components of climate change.

TOPICS AND SCOPE:

1. Earth-sun relationship.

2. Earth's energy budget and fundamentals of weather.
3. Atmospheric layering and function.
4. Temperature and pressure in the atmosphere.
5. Atmospheric humidity.
6. Clouds and precipitation types.
7. Weather map reading and contour analysis.
8. Pressure and temperature contour maps and associated weather.
9. Weather masses and frontal interaction.
10. Atmospheric circulation, mid-latitude cyclones, tornadoes, and hurricanes.
11. Weather forecasting.
12. Climate zones; marine and altitude effects on local climate.
13. Glaciation and basics of climate change studies.

ASSIGNMENTS:**READING ASSIGNMENTS:**

Appropriate reading assignments will be given from college level text(s). A variety of media may be used to supplement textbook readings, such as:

1. Current news articles from local or regional papers.
2. Reports, news articles, or other documents from internet sources.
3. Documents by organizations such as the American Meteorological Society.

WRITING ASSIGNMENTS:

Appropriate writing assignments will be given which allow students to demonstrate their understanding of key concepts, present critical review of reading materials, and describe the application of course topics to the analysis of specific problems. Assignments will include:

1. Analytical semester project that requires the application of graphic and descriptive analysis to meteorological problems.
2. Short essays involving written critiques and comparisons of meteorological concepts and terminology.
3. Summaries and comparison of weather reports in the news.

Additional writing exercises may be assigned such as:

1. Term paper on topic of interest to student but focused on clarifying weather or climate related processes.
2. Reviews of news and/or research reports from entities such as the American Meteorological Society.
3. Essay examination.

OUTSIDE ASSIGNMENTS:

Out of class assignments are required. These assignments will allow students to take a more in-depth look at course topics and will include

1. Reading and writing assignments as specified in the course syllabus.
2. Analytical semester projects that require the application of graphic and descriptive analysis to meteorological problems.
3. Summaries of research-oriented questions addressing class topics.

Additional assignments may be included in the course, such as:

1. Assigned/recommended attendance at guest speaker lectures.
2. Term paper on topic of interest to student but focused on clarifying atmospheric processes related to weather and climate.
3. Viewing of assigned/recommended media materials.
4. Library, electronic, and other research on a variety of

meteorological subjects.

5. Reviews of news reports or research reports from entities such as the American Meteorological Society.

METHOD OF INSTRUCTION:

Methods of instruction will include:

1. Lecture and visual aids.
2. Quiz and examination review performed in class.
3. Homework and extended projects.
4. Collaborative in-class problem solving exercises.

Additional instruction may include:

1. In-class discussion.
2. Guest speakers.
3. Optional materials available for review in the Learning Center and/or library.

METHODS OF EVALUATION:

A student's grade shall be determined based on demonstrated proficiency in the subject matter and the ability to demonstrate that proficiency, at least in part, by means of essays and problem-solving exercises including:

1. In-class objective examinations that test for knowledge and applications of specific meteorological concepts.
2. Out of class writing assignments that test the knowledge and application of atmospheric principles to specific meteorological phenomenon.
3. Summaries of problem-solving exercises.
4. Analytical semester projects.

Proficiency in the subject matter may be measured through supplementary assignments/activities such as:

1. Take home essay assignments and/or examinations.
2. Research papers.
3. Participation in group projects.
4. Class participation including oral presentations on a variety of meteorological subjects.

BASIS FOR GRADING:

The assignment of a grade is based on the level of achievement of the outcomes and objectives of the course outline and is reflected in quantifiable terms in the course syllabus.

REPRESENTATIVE TEXTBOOKS:

1. Meteorology, 2nd Edition, Danielson, Levin and Abrams, McGraw Hill, 2003, ISBN: 0-07-365963-0
2. Meteorology Today, 7th Edition, Ahrens, Thomson/Brooks Cole, 2003. ISBN: 0-534-39774-3

RATIONALE

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RESOURCES REQUIRED

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MISCELLANEOUS

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Advisory generate desc:	N	NO
Area department:	PSC	PHYSICAL SCIENCES
Audit flag:	N	NOT AUDITABLE
Basic skills:	X	NOT BASIC SKILLS
Classification:	A	Liberal Arts and Sciences
Cost level:	01	
Disciplines:		PHYSICAL SCIENCE
Division:	02	MERIDITH RANDALL
Faculty service areas:		PHYSICAL SCIENCE
Fee:	\$0.00	
In-service:	X	NOT IN-SERVICE
Level below transfer:	X	NOT APPLICABLE
Matric-requiring:	X	Exempt from assessment
Maximum class size:	0	
Maximum wait list:	0	
Method of instruction:	02	LECTURE
Non-credit category:	X	NOT APPLICABLE, CREDIT COURSE
Open entry/exit:	N	Not open entry/exit
Pacs activity:	1901	PHYSICAL SCIENCE GENERAL
Pacs program project:	0000	
Preq/coreq generate desc:	N	NO
Preq/coreq provisional:	N	NO
Preq/coreq reg check:	N	NO PREREQUISITE RULES EXIST
Repeat group id:		
Requires instructor sig:	N	INSTRUCTOR'S SIGNATURE NOT REQUIRED
SAM classification:	C	Clearly occupational
Selected/special topic:	N	NOT A SELECTED TOPIC COURSE
Special class:	X	NOT A SPECIAL COURSE
TOP code:	1930.00	EARTH SCIENCE
Workload:	0.0000	