

# COURSE SYLLABUS

<b>LAST REVIEW</b>	Fall 2022
<b>COURSE TITLE</b>	Introduction to Meteorology & Lab
<b>COURSE NUMBER</b>	NASC-0175
<b>DIVISION</b>	Math, Science, Business & Technology
<b>DEPARTMENT</b>	Physical Sciences
<b>CIP CODE</b>	24.0101
<b>CREDIT HOURS</b>	4
<b>CONTACT HOURS/WEEK</b>	Class: 3                      Lab: 2
<b>PREREQUISITES</b>	None
<b>COURSE PLACEMENT</b>	Students must meet the correct placement measure for this course. Information may be found at: <a href="https://www.kckcc.edu/admissions/information/mandatory-evaluation-placement.html">https://www.kckcc.edu/admissions/information/mandatory-evaluation-placement.html</a>

## COURSE DESCRIPTION

This course provides students with a comprehensive study of the principles of meteorology while simultaneously providing classroom and laboratory applications focused on current weather situations. It provides real experiences demonstrating the value of computers and electronic access to time-sensitive data and information. The structure and composition of the atmosphere, the general circulation pattern over the Northern Hemisphere and how it arises, winds in relation to pressure patterns, and weather maps and their analyses are among the topics covered.

### General Education Learning Outcome

- ☐ Basic Skills for Communication
- ☐ Mathematics
- ☐ Humanities
- ☒ Natural and Physical Sciences
- ☐ Social and Behavioral Sciences

### Institutional Learning Outcomes

- ☐ Communication
- ☒ Computation and Financial Literacy
- ☒ Critical Reasoning
- ☒ Technology and Information Literacy
- ☐ Community and Civic Responsibility
- ☐ Personal and Interpersonal Skills

## **TEXTBOOKS**

<http://kckccbookstore.com/>

## **METHODS OF INSTRUCTION**

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

## **COURSE OUTLINE**

- I. Monitoring Weather.
- II. Atmosphere: Origin, Composition, and Structure.
- III. Solar and Terrestrial Radiation
- IV. Heat, Temperature, and Atmospheric Circulation.
- V. Air Pressure.
- VI. Humidity, Saturation, and Stability.
- VII. Clouds, Precipitation, and Weather Radar.
- VIII. Wind and Weather.
- IX. Atmosphere's Planetary Circulation.
- X. Weather Systems of Middle Latitudes.
- XI. Thunderstorms and Tornadoes.
- XII. Tropical Weather Systems
- XIII. Weather Analysis and Forecasting.
- XIV. Atmospheric Optics
- XV. Climate and Climate Change.

## **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. The learner will be able to explain meteorological phenomena in terms of basic physical and dynamic process over a broad range of spatial and temporal scales, including thunderstorms, and synoptic weather systems.
- B. The learner will be able to identify common features and impacts of severe and hazardous weather.
- C. The learner will be able to summarize how clouds form and describe the mechanisms that lead to precipitation.
- D. The learner will be able to describe the behavior of heat and radiation, their distribution in the atmosphere, and their relationship to the global energy budget and climate.
- E. The learner will be able to interpret basic meteorological charts including surface analyses, thermodynamic diagrams, radar images, and satellite images.
- F. The learner will be able to demonstrate critical and analytical skills to predict weather systems using several forecasting tools and techniques.

- G. The learner will be able to use appropriate tools to investigate and analyze meteorology problems.

### **ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

### **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.