

BUTTE COLLEGE

COURSE OUTLINE

I. CATALOG DESCRIPTION

PSC 53 - Natural Disasters and Hazards

3 Unit(s)

Prerequisite(s): NONE

Recommended Prep: Reading Level IV; English Level IV; Math Level III

Transfer Status: CSU/UC

51 hours Lecture

This course provides an introduction to the hazards created by the earth's natural and physical processes and covers a broad scientific understanding of earthquakes, volcanoes, hurricanes, tsunamis, tornados, flooding, wildfires and other disasters. Other topics will include threats from the earth's changing climate and potential impacts from asteroids and comets. Atmospheric and geological processes that create these catastrophes will also be discussed. The concept of science and the scientific method will be introduced and applied to the course material.

II. OBJECTIVES

Upon successful completion of this course, the student will be able to:

- A. Use the scientific method to investigate and evaluate worldwide natural hazards and environmental issues.
- B. Analyze the earth's weather and climate as it relates to climate change and global warming.
- C. Identify and be able to explain the cause of earth's natural hazards such as earthquakes, tsunamis and volcanoes.
- D. Describe and explain the weather processes that lead to the formation of atmospheric hazards such as severe thunderstorms, hail, tornados and hurricanes.
- E. Analyze the hazards posed by flooding, drought and wildfires.
- F. Identify the risk factors for human population from different types of natural hazard including where they are likely to occur and their effects.
- G. Describe how impacts from asteroids and comets can lead to mass extinction.

III. COURSE CONTENT

A. Unit Titles/Suggested Time Schedule

Lecture		
<u>Topics</u>		<u>Hours</u>
1. Scientific Method		3.00
2. Overview of Natural Hazards		3.00
3. Plate Tectonics		3.00
4. Earthquakes and Tsunamis		6.00
5. Volcanoes		3.00
6. Introduction to the Atmosphere		3.00
7. Thunderstorms and Tornados		6.00
8. Hurricanes		3.00
9. Flooding		3.00
10. Drought and Wildfires		3.00
11. Climate Change		6.00
12. Waves and Ocean Currents		2.00
13. Mass Wasting		2.00

14. Subsidence and Soils	2.00
15. Impacts and Extinctions	3.00
Total Hours	51.00

IV. **METHODS OF INSTRUCTION**

- A. Lecture
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Discussion
- D. Demonstrations
- E. Multimedia Presentations

V. **METHODS OF EVALUATION**

- A. Exams/Tests
- B. Oral Presentation
- C. Homework
- D. Group Participation
- E. Essays and research papers
- F. The 1500 word requirement will be fulfilled through research papers and essay questions on exams.

VI. **EXAMPLES OF ASSIGNMENTS**

- A. Reading Assignments
 1. Read the chapters on floods and wildfires to learn where they typically occur and the impacts of these hazards. Be prepared to discuss these topics in class.
 2. Read about plate tectonics to learn how certain regions on the earth are prone to earthquakes and volcanos. Be prepared to discuss these topics in class.
- B. Writing Assignments
 1. Write an essay on a natural disaster that you have experienced or witnessed in the media that has had a personal impact on you. The paper should be typed and double-spaced and a minimum of two full pages in length.
 2. Write a summary of your selected natural disaster topic. Your paper should be at least four full pages and give at least three examples of when this disaster has occurred in the past. The paper should include the date, location, scope of destruction and any financial costs associated with the disaster event.
- C. Out-of-Class Assignments
 1. Pick a dream location on the earth where, in the future, you want to reside. Investigate the Natural Hazard risks for that location and be prepared to discuss your findings in class. After assessing the hazards do you still want to move there?
 2. Complete the homework questions at the end of the Tsunami chapter. Investigate a recent Tsunami event and the impacts to that region. Be prepared to discuss your findings in class.

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

- A. Hyndman, Donald, Hyndman, David. Natural Hazards and Disasters. 4th Edition. Pearson Prentice Hall, 2014.

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