BIO 85.1 Course Outline as of Fall 2009

CATALOG INFORMATION

Dept and Nbr: BIO 85.1 Title: PEPPERWOOD PHYSICAL ENVT
Full Title: Pepperwood Natural History: Physical Environment
Last Reviewed: 9/14/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	1.50	17.5	Lecture Scheduled	26.25
Minimum	2.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	1.50		Contact DHR	26.25
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.50 Total Student Learning Hours: 105.00

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:	ERTHS 85.1
Formerly:	

Catalog Description:
A survey of the natural history of the Pepperwood Preserve, emphasizing earth sciences and native cultures (offered Fall semester only). Laboratory hours are primarily in the field and will include hiking over uneven terrain. This course (along with BIO/ERTHS 85.2) is a component of the Pepperwood Preserve Steward training program.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 1A or equivalent

Limits on Enrollment:

Schedule of Classes Information:
Description: A survey of the natural history of the Pepperwood Preserve, emphasizing earth sciences and native cultures (offered Fall semester only). Laboratory hours are primarily in the field and will include hiking over uneven terrain. This course (along with BIO/ERTHS 85.2) is a component of the Pepperwood Preserve Steward training program. (Grade or P/NP)
Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 1A or equivalent
Limits on Enrollment:
Transfer Credit: CSU;
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:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Transferable	Effective:	Fall 2009	Inactive:
UC Transfer:		Effective:		Inactive:

CID:

Certificate/Major Applicable:
Major Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of the course, students will be able to:
1. Explain the discipline and scope of natural history.
2. Interpret the land use and natural history of the Pepperwood Preserve.
3. Orient themselves to the geography of the Pepperwood Preserve.
4. Record field observations in a field notebook.
5. Interpret the geologic history, including the formation of rocks and soil in the Pepperwood Preserve.
6. Identify common rocks at the Pepperwood Preserve.
7. Correlate climatic factors with local weather patterns.
8. Describe factors affecting water movement and accumulation in the landscape.
9. Describe the influence of abiotic and biotic factors on vegetation patterns and ecosystem processes.
10. Relate the influence of native cultures to the natural history of the Pepperwood Preserve.
11. Demonstrate naturalist and/or land steward skills.

Topics and Scope:

I. Introduction to Natural History
  A. The discipline of natural history and the scientific method
  B. Natural history of Pepperwood
    1. Overview of regional and local natural history at Pepperwood
    2. Land use history at Pepperwood
    3. Orientation to the preserve
  C. Field notebook
II. Geology
  A. Overview of geology
    1. Plate tectonics

2. The rock cycle and rock types at Pepperwood
B. Brief geologic history of California and Sonoma County
1. Coastal ranges geologic setting
2. Regional and local fault systems
C. Common igneous, sedimentary and metamorphic rocks at Pepperwood Preserve

III. Weather and Climate
A. Insolation and temperature
B. Air pressure and wind
C. Atmospheric moisture
D. Regional climate and the microclimates of Pepperwood

IV. Soils
A. Soil profiles and horizons
B. Soil properties
C. Soil formation
D. Sonoma County and Pepperwood soil regions

V. Hydrology
A. Hydrologic cycle
B. Groundwater
1. Groundwater movement
2. Groundwater resources at Pepperwood
C. Surface water
1. Surface water movement
2. Surface water resources at Pepperwood

VI. Vegetation and Ecosystem Ecology
A. Ecological determinants of vegetation patterns
B. Vegetation patterns in Sonoma County and at Pepperwood
C. Ecosystems processes
1. Trophic levels and food webs
2. Energy flow and nutrient cycles

VII. Archaeology and Native American Culture
A. Ethnography of native peoples in Sonoma County
B. Traditional cultural uses of the Pepperwood biota
C. The Pepperwood collection of cultural resources and obsidian stone tool technology
D. Archeological field survey of the cultural resources of the Pepperwood Preserve

VIII. Methods of Natural History Interpretation
A. Effective oral communication for target audience
B. Use of demonstration materials
C. Planning of interpretation event for target audience

Assignment:

1. Readings from selected journal papers and texts, 20-30 pages per week
2. Quizzes (3-5): multiple choice and short answer questions
3. Oral presentation demonstrating skills as a natural history interpreter
4. Completion of a field notebook
5. Final exam: multiple choice and short answer questions

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.

Field notebook	Writing 20 - 40%

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

None	Problem solving 0 - 0%

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

Oral presentation	Skill Demonstrations 10 - 20%

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

Quizzes and final exam	Exams 40 - 50%

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

Participation and attendance	Other Category 10 - 20%

Representative Textbooks and Materials:
An Island called California, Bakker, E., University of California Press: 1984, (classic)

A Natural History of California, Schoenherr, A.A., University of California Press: 1992 (classic).

Roadside Geology of Northern and Central California. Alt, D., Mountain Press Publishing: 2000 (classic)

Weather of the San Francisco Bay Region (California Natural History Guides, 63), Gilliam, H., University of California Press,: 2002

Geology of the San Francisco Bay Region (California Natural History Guides, 79), Karachewski, J., University of California Press: 2006

Introduction to California Soils and Plants (California Natural History Guides, 86), Kruckeberg, A.R., University of California Press: 2006