

Field Research

Science

Grade(s) 11th - 12th, Duration 1 Semester, 1
Credit
Elective Course

Description

Field Research is a hands on lab and experience oriented science course that can be taken either as a required class fulfilling the third required science credit or as an elective. This course attempts to expose students to different types of scientific field research ranging from terrestrial to marine environments. Students will get to interact with real scientist being trained in a variety of field research methods. Students will also conduct their own original research using the skills they have learned.

Scope And Sequence

Timeframe	Unit	Instructional Topics
1 Week(s)	Scientific Method Unit	1. Scientific Method Review 2. Microbes Review
2 Week(s)	Harmful Algal Bloom Monitoring	
3 Week(s)	SSSC Hatchery	
3 Week(s)	Micro Plastics	
1 Week(s)	WhaleFest + Molecular Research Methods Workshop	
5 Week(s)	Project Write up and Presentation	

Course Details

Unit: Scientific Method Unit

Duration: 1 Week(s)

Description


- Scientific Method Review
- Experimental Design
- Microbes Review
- Microbes Experiment
- Data collection
- Analysis
- Write up

Topic: Scientific Method Review

Duration: 1 Day(s)

Description

- Steps of the Scientific Method
- Experimental Design


Knowledge/Skills linked to Power Standard = 

Topic: Microbes Review

Duration: 1 Day(s)

Description

- Classification of life
- Prokaryotic/Eukaryotic cells
- Types of microbes


Knowledge/Skills linked to Power Standard = 

Unit: Harmful Algal Bloom Monitoring

Duration: 2 Week(s)

Description

- Background Information
- Training resources
 - o Manual
 - o Videos
- Field trip to SEATOR lab
- Experimental Design
- Weekly data collection/monitoring

Knowledge/Skills linked to Power Standard = 

Unit: SSSC Hatchery

Duration: 3 Week(s)


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- Background Information
- Hatchery visit
- o Egg take
- o Types of research
 - Algae
 - Aquaculture
- Student experimental design


Knowledge/Skills linked to Power Standard = 

Unit: Micro Plastics

Duration: 3 Week(s)

Description

- Background Information
- Water sampling
- Crab stomach samples
- Fish stomach/tissue samples


Knowledge/Skills linked to Power Standard = 

Unit: WhaleFest + Molecular Research Methods Workshop

Duration: 1 Week(s)

Description

- 1 UAS credit for the Molecular Research Methods Workshop
- 1 UAS credit for WhaleFest

Knowledge/Skills linked to Power Standard = 

Unit: Project Write up and Presentation

Duration: 5 Week(s)

Description

- Students pick one of the projects from the semester
- Analyze data
- Write up in full scientific report format
- Create a scientific poster for display

Knowledge/Skills linked to Power Standard = 