California State University | INSTRUCTIONALLY RELATED ACTIVITIES CHANNEL ISLANDS

Proposal # 989

Instructionally Related Activities Report Form

SPONSOR: Please enter name
PROGRAM/DEPARTMENT: Please enter program
ACTIVITY TITLE: Please enter your activity title
DATE (S) OF ACTIVITY: Please enter date(s)

Please submit via email to the IRA Coordinator along with any supporting documentation at david.daniels@csuci.edu within 30 days after the activity.
Thank you for your commitment to engaging our students!

A. ADDRESS THE FOLLOWING QUESTIONS:

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY;
(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?
(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?
(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?
(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?
(6) WHAT DID YOU LEARN FROM THE PROCESS?
(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)
8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.

B. ATTENDEE LIST- SUPPORTING DOCUMENT:

In addition to the report form, *in a separate document,* attach to your email a list of attendees complete with each student major and grade level. This for IRA Committee reference only and will not be published on the IRA website. Include your name and the title of your IRA activity on the document.

C.IMAGES FROM ACTIVITY:

Finally, attach to your email up to 6 images demonstrating student participation (under 2 MB total) with captions/titles. Please attach these photos in .JPEG format directly to email. Thank you!

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY

This IRA funding supported part of a ESRM410 class project that walked students through the process of environmental site assessment - including sample planning and collection, quality control, chain of custody, chemical analysis, data interpretation, impact analysis and communication of results. Site assessment is common in environmentally focused careers and the data it generates is essential to environmental management decisions. The IRA funding allowed students to collect samples from a site using EPA designated methods and submit the samples to Weck Laboratories (a professional environmental lab) using appropriate chain of custody procedures. The requested pollutants were analyzed and the results returned to students. Then, the students evaluated the quality of the data via quality assessment/quality control parameters, compared the detected amounts of pollutants to toxicological data and determined the possible impacts of the pollutant concentrations at the sampled location. They documented their experience with 'how to' videos, standard operating procedure guides, compiled a contaminant database with information on analytic methods and relevance of the different contaminants and submitted a site assessment report.

(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?

The student-learning outcomes for ESRM410 in Spring 2018 were:

[1] Describe the major pollutants classes including their anthropogenic and natural sources, transport through ecosystems and eventual fate.

[2] Identify pollutants' exposure pathways and mechanisms of toxicity, as well as coping mechanisms organisms develop in response to pollutants.

[3] Explain and apply the steps involved in the assessment a polluted field site: sampling strategy, collecting and preserving samples, sample chain of custody, sample preparation for analysis, detection of analytes and data quality control/assurance.

[4] Examine chemical data and toxicity parameters to identify potential ecosystem and human impacts of different pollutants concentrations.

[5] Summarize the options for source reduction and remediation of major pollutants.

[6] Blend existing scientific knowledge and new field generated data to effectively communicate the hazards and mitigation of pollutants to the public.

The site assessment activity addressed outcomes 1-4 & 6, and allowed students to apply their new knowledge of major pollutants and modes of toxicity to the assessment of a local site, going from sampling to impact analysis. At the same time, students practiced

synthesizing assimilated knowledge and new field-generated data to effectively communicate material in 'how to' videos, standard operating procedures, a contaminant database and a site assessment report.

(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?

Students were able to apply material from class to evaluate sites they knew well (e.g. the reach of Calleguas Creek next to campus park), which deepened their understanding of the material and allowed them to connect with it on a personal level.

The students gained real-world skills they were able to add to their resume and leverage when applying to jobs.

(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?

The scope of the site assessment activity was large, which along with other assignments in the class, spread students too thin. The result being, their "how to" videos, standard operating procedures and contaminant database were not of the quality I intended. These products need strong review and revision before they can be released to the ESRM Program as resources (which was one of my original goals).

The S18 class was running as a special topics class under ESRM410, but has been approved as its own class for S20 running officially under ESRM300. I plan to have students in this class review and revise the "how to" videos, standard operating procedures and contaminant database so that these products can be released to our program as a resource for other students.

(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?

I will reduce the number of projects associated with the class so that students are able to spend more time on a project, achieve a deeper understanding of the material and raise the quality of their products (e.g. the 'how to' videos).

(6) WHAT DID YOU LEARN FROM THE PROCESS?

I learned that students need more time and a larger knowledge base than I anticipated to carry out a site assessment (or other projects) in order to gain an understanding and skill set, and output products at an advanced level.

I also learned that for a project of this scale, the expectations not only need to be defined clearly in the syllabus or project assignment, but reviewed verbally and often during class to keep the students on track.

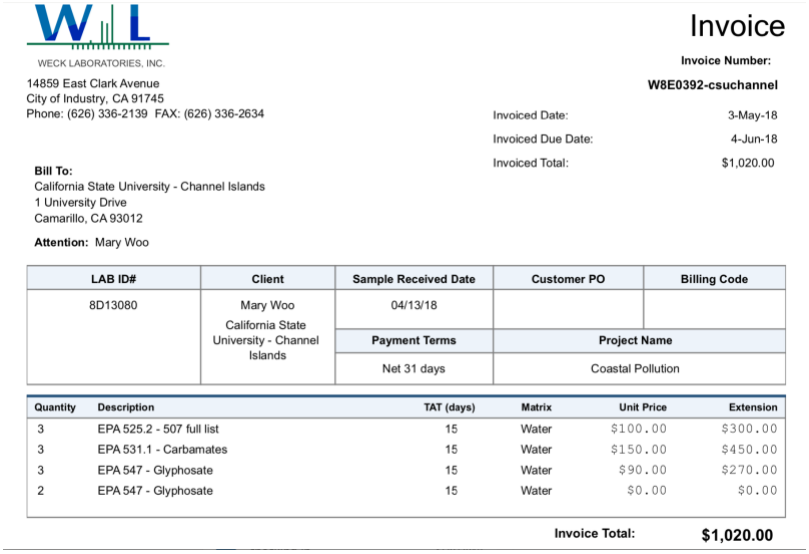
(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA

RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)

Overall, students appreciated the hands-on and practical experience. I am waiting for a letter from a student with specific details that I will forward.

(8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.

A total of $1820 dollars was paid to Weck Labs for their analysis of class samples. Please see the list of samples analyzed below.



WECK LABORATORIES, INC.
14859 East Clark Avenue
City of Industry, CA 91745
Phone: (626) 336-2139 FAX: (626) 336-2634

Invoice

Invoice Number: W8E0392-csuchannel

Invoiced Date: 3-May-18
Invoiced Due Date: 4-Jun-18
Invoiced Total: $1,020.00

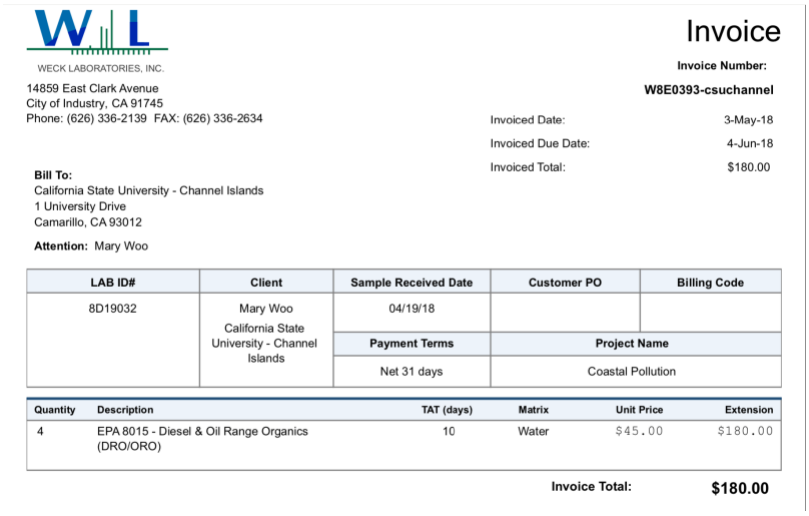
Bill To:
California State University - Channel Islands
1 University Drive
Camarillo, CA 93012

Attention: Mary Woo

LAB ID#	Client	Sample Received Date	Customer PO	Billing Code
8D13080	Mary Woo California State University - Channel Islands	04/13/18		
		Payment Terms	**Project Name**	
		Net 31 days	Coastal Pollution	

Quantity	Description	TAT (days)	Matrix	Unit Price	Extension
3	EPA 525.2 - 507 full list	15	Water	$100.00	$300.00
3	EPA 531.1 - Carbamates	15	Water	$150.00	$450.00
3	EPA 547 - Glyphosate	15	Water	$90.00	$270.00
2	EPA 547 - Glyphosate	15	Water	$0.00	$0.00

Invoice Total: $1,020.00



WECK LABORATORIES, INC.
14859 East Clark Avenue
City of Industry, CA 91745
Phone: (626) 336-2139 FAX: (626) 336-2634

Invoice

Invoice Number: W8E0393-csuchannel

Invoiced Date: 3-May-18
Invoiced Due Date: 4-Jun-18
Invoiced Total: $180.00

Bill To:
California State University - Channel Islands
1 University Drive
Camarillo, CA 93012

Attention: Mary Woo

LAB ID#	Client	Sample Received Date	Customer PO	Billing Code
8D19032	Mary Woo California State University - Channel Islands	04/19/18		
		Payment Terms	**Project Name**	
		Net 31 days	Coastal Pollution	

Quantity	Description	TAT (days)	Matrix	Unit Price	Extension
4	EPA 8015 - Diesel & Oil Range Organics (DRO/ORO)	10	Water	$45.00	$180.00

Invoice Total: $180.00

B. ON SEPARATE DOCUMENT, PLEASE ATTACH ATTENDEE LIST (PERSONALLY IDENTIFIABLE INFO REMOVED)

C. PLEASE INCLUDE UP TO 6 IMAGES AS ATTACHMENTS TO YOUR SUBMISSION

List of Participating Students for a IRA Proposal

Name	Major	Academic Level
Alessi, Joshua Preston	ESRM	Senior
Arbogast, Matthew Bernard	ESRM	Senior
De Haro, Mauricio	ESRM	Senior
Diego, Ralph Arvie	ESRM	Senior
Harrington, Cody Prescott	ESRM	Senior
Hill, Daniel Adam	ESRM	Senior
Latthitham, Josiah Gabriel	ESRM	Senior
Lee, Summer Madison	ESRM	Senior
Luna,John Anthony	ESRM	Senior
Masukawa, Jamie Christine	ESRM	Senior
Minck, Kevin	ESRM	Junior
Norman-Roberts, Andrew Dale	ESRM	Senior
Sanchez, Monica Celeste	ESRM	Senior
Ventrone, Jessica Marie	ESRM	Junior
Wiebe, Jia B	ESRM	Senior
Williams, Rachel LeeAnn	ESRM	Senior
Zorn, Amy Olivia	ESRM	Senior


ESRM410 Site Assessment
24019
25 ml
20 ml
DR 900
ESRM410 student testing water from Calleguas Creek for phosphates.


ESRM410 Site Assessment
Cat. No. 2401
25 ml
20 ml
ESRM410 student sampling water from Calleguas Creek for phosphate analysis.


ESRM410 Site Assessment
ESRM410 student describing the sample collection process for water samples from from Ventura Harbor. The water samples will check for the buildup of diesel fuel in the harbor.

ESRM410 student preparing to collect a water sample from Ventura Harbor to monitor for the buildup of diesel fuel in the harbor.