

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: EVR 1190

COURSE TITLE: Environmental Sampling Procedures

PREREQUISITE(S): None

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 3

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 3

Laboratory:

Other \_\_\_\_\_:

FACULTY WORKLOAD POINTS: 3

STANDARDIZED CLASS SIZE ALLOCATION: 30

## CATALOG COURSE DESCRIPTION:

This course emphasizes the theory and practical aspects of environmental sampling. Students will be taught the basic principles of properly collecting, analyzing, and interpreting the results of quality air, aqueous, and solid environmental samples in a safe and efficient manner. Students will gain hands-on experience in the following areas: meter calibration and maintenance, equipment decontamination, field survey techniques, and sample collection.

SUGGESTED TEXT(S): Site Characterization - Sampling and Analysis, Van Nostrand Reinhold.

HMT 270 - Sampling and Monitoring, 1993.

SW-846 @ <http://www.epa.gov/epaoswer/hazwaste/test/txmain.htm#Table>

IMPLEMENTATION DATE: Spring Term, 2004 (20042)

REVIEW OR MODIFICATION DATE:

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Sampling and Site Analyses	9
A. Sampling plan B. Preparing to go on site C. Types of sampling (air, aqueous, solid)	
II. Containment and Sampling	18
A. Drums and containers B. Soil and container sampling C. Soil and container collection D. Collect various samples	
III. Sample Analysis	18
A. Methods of analysis B. Interpretation of chemical analysis C. Decision-making processes related to environmental and hazardous materials D. Regulatory sources and regulations impacting the collection and use of samples	

PROGRAM TITLE: Environmental Science  
 COURSE TITLE: Environmental Sampling Procedures  
 CIP NUMBER: 0715059901/1715059901

## LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S):	TITLES(S):
01.0	Demonstrate knowledge of the principles of managing and remediation of water pollution.
01.01	Determine chemical and physical properties of water.
01.02	Describe microbial systems.
01.05	Identify types and sources of water contamination.
01.07	Collect water samples for analysis.
01.08	Identify the accepted water quality standards for effluent from wastewater treatment plants.
01.09	Identify the correct and accepted water quality standards for industrial waste effluent.
02.0	Demonstrate knowledge of the principles of managing and remediation of air pollution.
02.03	Collect and analyze air samples.
02.07	Measure the air pollutant of a specific source.
02.08	Record, interpret and report laboratory analyses.
04.0	Operate and calibrate laboratory and field instruments used in quantitative and qualitative analysis of pollutants.
04.01	Demonstrate knowledge of basic laboratory operation.
04.02	Operate and calibrate selected laboratory instruments.
04.03	Operate and calibrate selected field instruments and equipment.
05.0	Sample, analyze and calculate data related to air and water pollutants--The student will be able to:
05.01	Gather and analyze selected samples.
05.02	Manipulate data and reach firm conclusions.
05.03	Write selected formal technical reports.
05.04	Identify and perform the correct analysis for selected air pollutants listed with state and federal regulations.
05.05	Identify and perform the correct analysis for selected parameters listed with state and federal regulations for wastewater effluent.
07.0	Demonstrate an awareness of solid waste, the problems engendered by solid waste accumulation and disposal and solutions to those problems.
07.01	Discuss the composition, sources, and quantity of solid waste.
07.02	Discuss methods of solid waste disposal.
07.06	Identify a sanitary landfill.
07.07	Discuss the construction features of a safe landfill.
07.08	Discuss the possibilities of contaminants (leachates) seeping into the groundwater.
07.09	Discuss the need to have monitoring well located around a sanitary landfill.
07.10	Discuss those wastes that are permitted by state and federal regulation to be disposed at a landfill site.



**Florida Community College  
At Jacksonville**

**Course Learning Outcomes & Assessment  
For All College Credit Courses**

NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i>	
COURSE PREFIX AND NUMBER: <b>EVR 1190</b>	SEMESTER CREDIT HOURS: <b>3</b>
COURSE TITLE: <b>Environmental Sampling Procedures</b>	

*Section 2*  
TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> <b>AA Elective</b>	<input type="checkbox"/> <b>AS Required Professional Course</b>	<input type="checkbox"/> <b>College Prep</b>
<input checked="" type="checkbox"/> <b>AS Professional Elective</b>	<input type="checkbox"/> <b>AAS Required Professional Course</b>	<input checked="" type="checkbox"/> <b>Technical Certificate</b>
<input type="checkbox"/> <b>Other</b>		
<input type="checkbox"/> <b>General Education: (For General Education courses, you must also complete Section 3 and Section 7)</b>		

*Section 3 (If applicable)*  
INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> <b>Communications</b>	<input type="checkbox"/> <b>Social &amp; Behavioral Sciences</b>	<input type="checkbox"/> <b>Mathematics</b>
<input type="checkbox"/> <b>Natural Sciences</b>	<input type="checkbox"/> <b>Humanities</b>	

*Section 4*  
INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> <b>Reading</b>	<input checked="" type="checkbox"/> <b>Speaking</b>	<input checked="" type="checkbox"/> <b>Critical Analysis</b>	<input checked="" type="checkbox"/> <b>Quantitative Skills</b>	<input checked="" type="checkbox"/> <b>Scientific Method of Inquiry</b>
<input checked="" type="checkbox"/> <b>Writing</b>	<input checked="" type="checkbox"/> <b>Listening</b>	<input checked="" type="checkbox"/> <b>Information Literacy</b>	<input type="checkbox"/> <b>Ethical Judgment</b>	<input type="checkbox"/> <b>Working Collaboratively</b>

<i>Section 5</i>		
<b>LEARNING OUTCOMES</b>		<b>METHOD OF ASSESSMENT</b>
•	Upon completion of course students will be able to:	
•	Understand the basic principles of collecting quality water and solid environmental samples.	Group discussions, assignments, quizzes & tests, reports and/or demonstrate competency in the field.
•	Demonstrate knowledge of lab operations and equipment calibration and decontamination.	Group discussions, assignments, quizzes & tests, reports and/or demonstrate competency in the field.
•	Demonstrate understanding of various field survey and sample collection techniques.	Group discussions, assignments, quizzes & tests, reports and/or demonstrate competency in the field.
•	Apply theories of environmental sampling to a simulated scenario.	Group discussions, assignments, quizzes & tests, reports and/or demonstrate competency in the field.
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<b>Section 6</b>	Name of Person Completing This Form: <b>Carol Swinson</b>	Date: <b>November 15, 2007</b>
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