

## OFFICIAL COURSE OUTLINE INFORMATION

Students are advised to keep course outlines in personal files for future use.

Shaded headings are subject to change at the discretion of the department and material will vary

- see course syllabus available from instructor

**FACULTY/DEPARTMENT:** CHEMISTRY

<b>CHEM 241</b>		<b>4</b>
<b>COURSE NAME/NUMBER</b>	<b>FORMER COURSE NUMBER</b>	<b>UCFV CREDITS</b>

**ANALYTICAL CHEMISTRY**
**COURSE DESCRIPTIVE TITLE**
**CALENDAR DESCRIPTION:**

An introduction to analytical chemistry with an emphasis on analysis of solutions. Lecture material includes data and sample handling, principles of titrimetry and electrochemical methods, as well as an introduction to chromatography. Laboratory experiments illustrate lecture material.

**PREREQUISITES:** CHEM113 and CHEM114

**COREQUISITES:** None

**SYNONYMOUS COURSE(S)**

(a) Replaces:	<u>N/A</u>	
	<i>(Course #)</i>	
(b) Cannot take	<u>N/A</u>	for further credit
	<i>(Course #)</i>	

**SERVICE COURSE TO:**

<i>(Department / Program)</i>	
<i>(Department / Program)</i>	

**TOTAL HOURS PER TERM:** 90
**STRUCTURE OF HOURS:**

Lectures:	45	hrs
Seminar:	12	hrs
Laboratory:	33	hrs
Field Experience:		hrs
Student Directed Learning:		hrs
Other (Specify):		hrs

**TRAINING DAY-BASED INSTRUCTION**

LENGTH OF COURSE:	
HOURS PER DAY:	

**MAXIMUM ENROLMENT:** 24
**EXPECTED FREQUENCY OF COURSE OFFERING:** \_\_\_\_\_

**WILL TRANSFER CREDIT BE REQUESTED?** YES X NO \_\_\_\_\_

**TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE:** YES \_\_\_\_\_ NO X
**AUTHORIZATION SIGNATURES:**

Course designer(s): \_\_\_\_\_  
Noham Weinberg

Chairperson: \_\_\_\_\_  
*(Curriculum Committee)*

Department Head: \_\_\_\_\_  
Noham Weinberg

Dean: \_\_\_\_\_  
J. Snodgrass

PAC Approval in Principle Date: \_\_\_\_\_

PAC Final Approval Date: December 7, 2005

**CHEM 241**COURSE NAME / NUMBER

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**LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:**

Students will become competent with a variety of analytical techniques. They will be able to display their expertise in understanding the lecture material and handling the laboratory equipment.

**METHODS:**

Lectures, labs, group problem-solving sessions.

**PRIOR LEARNING ASSESSMENT RECOGNITION (PLAR):**

Credit can be awarded for this course through PLAR      YES \_\_\_\_\_      NO   X  

**METHODS OF OBTAINING PLAR:****TEXTBOOKS, REFERENCES, MATERIALS:**

D.C. Harris, *Quantitative Chemistry Analysis*, 5<sup>th</sup> ed., Freeman, 1999.

**SUPPLIES / MATERIALS:****STUDENT EVALUATION:**

Labs	30%
Midterms	30%
Final	40%

**COURSE CONTENT:**

1. Data and sample handling.
2. Principles of solution equilibria.
3. Gravimetric analysis.
4. Titrimetry: neutralization, redox, precipitation, and complex-formation.
5. Introduction to electrochemistry.
6. Electrochemical methods: potentiometry, conductometry, coulometry, voltammetry, amperometry.
7. Introduction to chromatography.

**LABORATORY EXPERIMENTS:**

1. Gravimetric Lab.
2. Standard solutions
3. Neutralization titration lab.
4. Redox titration lab.
5. pH titration lab.
6. Potentiometric precipitation titration.
7. Conductometric titration lab.
8. TLC lab.
9. GC labs.