UNIVERSITY COLLEGE
of the FRASER VALLEY

COURSE IMPLEMENTATION DATE:[September 2001
COURSE REVISED IMPLEMENTATION DATE: May 2006
COURSE TO BE REVIEWED DATE:[December 2009
(Four years after implementation date)

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**

CHEM 324		**4**
COURSE NAME/NUMBER	FORMER COURSE NUMBER	UCFV CREDITS

CHEMICAL KINETICS AND THERMODYNAMICS

COURSE DESCRIPTIVE TITLE

CALENDAR DESCRIPTION:

An introduction to thermodynamics with applications to phase and chemical equilibria. Topics include principles of chemical kinetics including enzyme kinetics and reaction rate theory. Laboratory experiments illustrate lecture material.

PREREQUISITES: CHEM 113 and CHEM 114; plus PHYS 111, and PHYS 112 or PHYS 105; plus MATH 111 and MATH 112. (MATH 211 is recommended.)

COREQUISITES: None

SYNONYMOUS COURSE(S)

(a) Replaces: N/A
(Course #)

(b) Cannot take CHEM 222 or 323 for further credit
(Course #)

SERVICE COURSE TO:

(Department / Program)

(Department / Program)

TOTAL HOURS PER TERM: **90**

STRUCTURE OF HOURS:

Lectures:	45	hrs
Seminar:		hrs
Laboratory:	45	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** _____ **NO** **X**

TRANSFER CREDIT EXISTS IN BCCAT TRANSFER GUIDE: **YES** _____ **NO** **X**

AUTHORIZATION SIGNATURES:

Course designer(s): N. Weinberg

Chairperson: *(Curriculum Committee)*

Department Head: N. Weinberg

Dean: J. Snodgrass

PAC Approval in Principle Date:

PAC Final Approval Date: December 7, 2005

LEARNING OBJECTIVES / GOALS / OUTCOMES/ LEARNING OUTCOMES:

Students will become familiar with fundamental principles of chemical kinetics and thermodynamics and will learn how to use them to analyze chemical processes and phase equilibria.

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:

Atkins, *Physical Chemistry*, 6th ed., Freeman and Co., 1998

SUPPLIES / MATERIALS:

STUDENT EVALUATION:

Labs	20%
Midterms	40%
Final	40%

COURSE CONTENT:

1. Introduction to Thermodynamics. The Zeroth Law of Thermodynamics.
2. The First Law of Thermodynamics.
3. Thermochemistry. Termodynamic cycles.
4. Thermodynamic Potentials. Spontaneity and Equilibrium.
5. Phase Equilibria.
6. Chemical Equilibria.
7. Introduction to Chemical Kinetics. Rate laws.
8. Complex kinetics. Enzyme kinetics.
9. Collision theory. Transition state theory