CHE 105-001, 002
LECTURE SYLLABUS

Discovering Chemistry with Lab **Fall, 2007**
This course is a general studies course and is not designed to prepare students for further studies in chemistry.
Sections 001, 002 MWF 10:00 AM – 10:50 AM SC 308 (lecture)

All items on this syllabus are subject to change by the instructor.

Instructor:	W. Vernon Hicks	Office Hours:	MWF	7:30 – 8:00 AM (SC 402)
Office:	SC 447		MF	9:05 – 9:45 AM (SC 447)
Email:	hicks@nku.edu		MWF	11:05 – 11:50 AM (SC 447)
Phone:	(859) 572-5406		Other hours by appointment	
URL:	http://www.nku.edu/~hicks/			

PREREQUISITE: None
COREQUISITE: CHE 105 lab {W, 11:00 AM – 12:50 PM, SC 462 for CHE 105-001}
{W, 1:00 PM – 2:50 PM, SC 462 for CHE 105-002}

PURPOSE:

This chemistry course integrates content presentation with laboratory experience and small group learning activities. Through these three components the students will have the opportunity to acquire the knowledge, experience the process of applying the knowledge, and construct a better understanding of chemistry and chemical issues. In so doing, this course will address both the content and the process of learning chemistry. The outcome of this course is to produce students that have constructed an active knowledge base of chemistry. In the process, the students will discover an appreciation for chemistry as an open-ended learning experience.

This course models teaching strategies recommended in the science education reform literature in the teaching of chemistry to elementary and middle school education majors. A better understanding and appreciation of chemistry and chemical issues by pre-service teachers should impact positively toward the teaching of science in their future classrooms. In addition, many basic chemical principles and applications will be presented using the multimedia approach incorporating videodiscs, CD-ROM, computer animations, and computer simulations.

This syllabus and other important information concerning this course are available on Blackboard.

DEPARTMENT OF CHEMISTRY STUDENT LEARNING OBJECTIVES

1. Explain the major concepts and experimental findings in the chemical sciences.

2. Demonstrate the ability to carry out experimental protocols using modern instrumentation and methods.

3. Utilize critical thinking skills to apply concept knowledge and adapt experimental techniques to: a) form and test hypotheses and b) solve scientific problems

4. Compile, critically evaluate, and interpret scientific information and data.

5. Effectively communicate scientific information through written and oral means.

6. Apply effective group strategies to solve scientific problems.

7. Evaluate the relationships between chemistry and mathematics, physics, biology, and other disciplines and between chemistry and society.

8. Apply computer technology and other technologies in the comprehension, interpretation, and presentation of the chemical sciences.

SPECIFIC COURSE OBJECTIVES:

1. To promote science literacy in chemistry and to relate this content to real-life issues.

2. To incorporate student-centered learning by conducting small group activities that allow students to lead and assist each other in constructing their knowledge. The instructor, in this case, becomes a monitor and a facilitator.

3. To provide hands-on chemistry experiments that include guided-inquiry and discovery approaches.

4. To help students develop reasoning strategies by performing discovery/small group activities, and conduct post-lab discussions of laboratory experiences.

5. To effectively model the use of educational technology in the classroom and in the laboratory. Computer-based experiments will be introduced in the lab and the multimedia approach integrated into the curriculum by using computers, videodiscs, CD-ROM and other electronic media.

REQUIRED COURSE MATERIALS:

1. *World of Chemistry* textbook (Second Edition), M.D. Joesten and J.L. Wood, Saunders College Publishing Company, 1996.

2. General Chemistry Interactive CD-ROM version 3.0, Thomson, Brooks/Cole

3. *Discovering Chemistry with Lab*: Lab Manual; a NKU publication, Summer 2006 edition.

LECTURE COURSE REQUIREMENTS:

1. Attendance: You are responsible for all material and assignments presented in class, including any announcements.

2. Assignments: You will be given assignments based on handouts, computer software, internet and CD-ROM. These will be collected and will not be accepted after the due date. These assignments will also be posted on Blackboard. Homework questions, problems and readings will be assigned from the textbook, but will not be collected.

3. Group Teaching Project: Students in groups of 3-4 will select, research, and teach an energy-related topic relevant to chemistry. The group will be graded based on the cohesiveness of the presentation, the creativity of the format, the use of multiple resources, and the clarity of the presentation. In addition, a written report is also required from each group.

4. Every week some time may be set aside for post-lab discussion and/or to conduct small group learning activities. For these group activities, the students will be grouped randomly into 3-4 member teams. Each team will be assigned a group grade based on how effectively they work together and how well they solve the problem.

5. You are required to use a computer on a regular basis. You will need the computer to view the CD-ROM, log on to Blackboard, and check your e-mail.

6. Tests: There will be three semester tests and a comprehensive final exam. A student missing a test must contact the instructor as soon as possible and make an appointment to discuss the situation in my office. There will be no make-up exams. At the discretion of the instructor, in lieu of a missed test, the final exam grade may count an additional 10%. This policy will be applicable for only one missed test.

   Test dates will be announced a week before the actual date.

GRADE:

Assignments .....10 %

3 Tests (averaged).....30 % (10% for each test)

Group Teaching Project.....10 %

Final Exam .....15 %

Final Lab Grade .....35 %

The work you will do in any course is subject to the Student Honor Code. The Honor Code is a commitment to the highest degree of ethical integrity in academic conduct, a commitment that, individually and collectively, the students of Northern Kentucky University will not lie, cheat, or plagiarize to gain an academic advantage over fellow students or avoid academic requirements. The Honor Code can be accessed at: http://www.nku.edu/~deanstudents/policies.htm **.**

Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, which also can be found at http://www.nku.edu/~deanstudents/policies.htm, faculty members have the right to determine actions to be taken when a student is caught cheating.

Students caught cheating or plagiarizing for the first time will receive a grade of zero for that test or assignment. Students caught cheating or plagiarizing a second time will receive an F for the course and will be reported to the Dean of Students.

Faculty members reserve the right to dismiss or to have removed a disruptive student from their classrooms.

Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Disability Services Office. Please contact the Disability Service Office immediately in the University Center, Suite 320 or call 859-572-6373 for more information. Verification of your disability is required in the Disability Services Office for you to receive reasonable academic accommodations. Visit the Disability Services website at www.nku.edu/~disability/ .

IMPORTANT UNIVERSITY DATES and *Tentative* Test Dates:

September 3	Labor Day -No classes
September 10	Last day to drop a course without a grade
September 21	Test #1 (tentative)
October 15	Fall Break
October 26	Test #2 (tentative)
October 29	Last day to drop a course with a grade of "W"
November 21 - 23	Thanksgiving Holiday-No classes
November 30	Test #3 (tentative)
December 12 (10:10 AM -12:10 PM)	Final Exam

LECTURE COURSE TOPICS: The following chapters will be covered in the order shown below. Sections to be covered will be announced in the class. Depending on the progress of the class the instructor may make adjustments in the course content.

Chapter No.	Title
1	Living in a World of Chemistry
2	Chemical View of Matter
3	Atoms
4	The Periodic Table
6	Chemical Bonds
8	Chemical Reactivity
7	States of Matter and Solutions
10	Oxidation and Reduction
9	Acids and Bases
12	Energy and Hydrocarbons
14	Polymers
13	Alternate Energy Resources
16	Consumer Chemistry

All items on this syllabus are subject to change by the instructor. Students are responsible for reading and understanding all items on this syllabus. Any items not understood must be brought to the attention of the instructor within the first two week of class.