

CHE 105-001,002
COURSE SYLLABUS

Discovering Chemistry with Lab
MWF 10.00-10.50a SC 308

Spring 2009

Instructor: Gwen Fields
Phone: 859-572-6681

Office Hours: M, F 11-12:30 Office: SC 442
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PRE-REQUISITE: None

COREQUISITE: CHE 105L (Wed 11-12:50 SC 462 for CHE 105-001, Wed 1-2:50 for CHE 105-002)

REQUIRED COURSE MATERIALS:

1. World of Chemistry textbook (Second Edition), M. D. Joesten and J. L. Wood, Thomson Custom Solutions, Mason, Ohio. (2006).
2. General Chemistry Interactive CD-ROM version 3.0, Thomson, Brooks/Cole
3. Discovering Chemistry with Lab: Lab Manual; Kumar & Bedell; 2009 edition.

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.

Many basic chemical principles and applications will be presented using the multimedia approach incorporating Videodiscs, CD-ROM, computer animations and computer simulations.

COURSE OBJECTIVES (Lecture):

1. To promote science literacy in chemistry and to relate this science content to real-life issues.
2. To incorporate student-centered learning by letting students do group projects/assignments. The instructor's role is reduced to that of a monitor or 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 lab activities, and engaging in post-lab discussions.
5. To effectively model the use of educational technology in the classroom and in the laboratory. Computer-based experiments are carried out in the lab and the multimedia approach is integrated in the classroom by using computers, videodiscs, CD-ROM and other electronic media.

IMPORTANT UNIVERSITY DATES

January 19

Monday Martin Luther King, Jr. – No Class

March 9-14	Spring Break – No Class
March 30	Monday Last day to withdraw with a W
May 1	Friday Last day of classes
May 6	Wednesday Final Exam 10:10-12:10

LECTURE COURSE TOPICS: The following chapters will be covered in the order shown below. Sections to be covered and the dates they will be covered will be confirmed in the class and posted on Blackboard under Course Documents.

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

GRADE (will be based as follows):

- 3 Tests 30% (10% each test)
- Assignments 10%
- Group Project 10%
- Final Exam 15%
- Final Lab Grade 35%

Mid-term grades will be issued to students who have successfully completed fewer than 30 semester hours. Students will be able to access mid-term grades through Norse Express.

LECTURE COURSE REQUIREMENTS:

1. Attendance: The attendance will be taken during each lecture period. A student who misses a class is responsible for all the information and assignments presented in class, including any announcements. This information will be posted in the announcement section of Blackboard after each lecture.
2. Assignments : You will be given assignments based on handouts, the internet and CD-ROM. These will be collected and will not be accepted after the due date. The assignments and their due dates will be posted on Blackboard.
3. Homework: Homework based on readings, and questions and problems at the end of each chapter in the text book or the CD-ROM will be assigned and posted on Blackboard. Homework will not be collected or graded.
4. Group 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, there will also be a written report required from each group. More details

about this project will be provided later.

5. Tests: There will be three one-hour tests and a comprehensive final exam.

Test #1 ch1-4

Test #2 ch 6-8

Test #3 ch 9, 10, 12, 14

Final Exam Wed May 6 (10:10a.m.-12:10pm) cumulative including, ch 13

TEST MAKE-UP POLICY:

If a student is unable to attend class on the day of an exam, the student must get in contact with the instructor by 12:30 that day. The student must speak directly to the instructor to make arrangements for a make-up exam. My office phone number is at the top of the syllabus. If I'm not in my office leave a message and a phone number where I can contact you. If you do not hear from me by 2p.m. that same day, assume that I did not get your message and try again. A student wishing to take a make-up exam must do so before the class period following the missed test. If the student is unable to take the make-up exam in that time frame, the final exam grade may count 1 2/3 times at the discretion of the instructor. This policy will be applicable for only one missed test. A second missed test will result in a grade of zero for that exam.

DEPARTMENT OF CHEMISTRY 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 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.

DISABILITY SERVICES

Note for Students with a disability: "Students with disabilities who require accommodations (academic adjustments, auxiliary aids or services) for this course must register with the Office of Disability Services; University Center Suite 320; (859) 572-6373. Verification of your disability is required in the disability services office for you to receive reasonable academic accommodations. For more information

visit website at www.nku.edu/~disability.”

HONOR CODE

As in all other chemistry courses the NKU Honor Code will be enforced in this class. For more information on the Honor Code, please visit the Dean of Students website:

<http://www.nku.edu/~deanstudents/HonorCode.htm>

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 weeks of class.

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

