

Course Syllabus**General Chemistry I (CHE 120-003)****Fall 2016**

Course Days, Times and Room:

M, W, F 1:00 - 1:50, SC 308

Instructor:

Dr. Laura Padolik

Office: SC 451

Phone: 859-572-6113

e-mail: padolikl@nku.edu

Office Hours:

Monday & Wednesday 11:00-11:50 & 2:00-2:50

Prerequisite:

High school chemistry and Math ACT 22 (or equivalents)

Corequisite:

General Chemistry I Laboratory

Required:

Chemistry & Chemical Reactivity, 9th Edition, Kotz, Treichel, & Townsend.

Ebook or Textbook and OWL Instant Access Code;

QT Device with Turning Account or Turning Account to use with your smart phone

Course Description

Chemistry 120 is a class for science majors where the principles of chemistry; physical and chemical properties of elements and compounds will be explored. Students need to earn a minimum grade of C- in this class to continue in CHE 121. If you withdraw from the lecture you must also withdraw from the lab. This class meets the general education requirements in the natural sciences.

Attendance/Participation

Students will be expected to use their clickers to answer multiple choice questions presented during lecture. **All** questions presented during lecture must be answered for **full** credit (1 point). If some questions are answered, ½ a point will be awarded. Points awarded on CUR days will not count toward participation; however they may be counted as extra credit. Students are responsible for all information, material and assignments presented in class.

Blackboard

Students will be expected to use Blackboard to receive announcements and any additional information about class. The syllabus, power point presentations, handouts, answers to exams will be posted on Blackboard. Out of class, on line quizzes will also be given using Blackboard. Tegrity will be used to record some in class lectures, provide additional examples of working problems and expand on certain topics.

Quizzes

Quizzes will be given online through Blackboard. Quizzes will be online from 3:00 pm on dates listed on the calendar through 8:00 pm the next day. Students are expected to work independently without the aid of books or notes. Follow the NKU Honor Code. Each quiz will be worth 10 points and the best **nine** scores will count towards your grade. Once a quiz goes offline it cannot be reset. Make up quizzes will not be given. In class quizzes and additional quizzes may also be given during the semester.

Assignments

Chemistry is a problems based course and successfully completing all assigned problems will help you succeed on quizzes and exams. An online website called OWL (Online Web based Learning), administered by Thomson Learning will be used in this course. Problems assigned in OWL will count toward your grade. Due dates for each set of problems are listed on the course calendar and on the OWL website. Each assignment is worth 10 points. The best **nine** scores will count towards your grade.

Exams

There will be 4 exams and a comprehensive final exam; the dates for these are listed on the calendar. There will be no make-up exams. If you miss an exam because of an emergency, contact the instructor before the next scheduled class meeting.

Final Examination

The first semester general chemistry standardized test, written by the American Chemical Society is given in this class.

Tentative Course Calendar

August 2016						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
21	22 Chapter 1	23	24 Chapter 1	25	26 Chapter 1/LR	27
28 OWL 1 Due	29 Quiz 1 LR	30	31 Chapter 2	1	2 Chapter 2	3
September 2016						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4 OWL 2 Due	5 Quiz 2 Labor Day	6	7 Chapter 2	8	9 Chapter 2	10
11 Quiz 3 OWL 3 Due	12 X-Day CUR	13	14 Exam 1	15	16 Chapter 2	17
18	19 Chapter 3	20	21 Chapter 3	22	23 Chapter 3	24
25 OWL 4 Due	26 Quiz 4 Chapter 4	27	28 Chapter 4	29	30 Chapter 4	
October 2016						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2 OWL 5 Due	3 Quiz 5 Chapter 4	4	5 Chapter 4	6	7 Chapter 5	8
9 Quiz 6 OWL 6 Due	10 CUR	11	12 Exam 2	13	14 Chapter 5	15
16	17 Fall Break	18	19 Chapter 5	20	21 Chapter 6	22
23 OWL 7 Due	24 Quiz 7 Chapter 6	25	26 Chapter 7	27	28 Chapter 7	29
30 OWL 8 Due	31 W-Day Quiz 8, Chapter 7					
November 2016						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2 Chapter 8	3	4 Chapter 8	5
6 Quiz 9 OWL 9 Due	7 CUR	8	9 Exam 3	10	11 Chapter 8	12
13	14 Chapter 8	15	16 Chapter 8	17	18 Chapter 9	19
20 OWL 10 Due	21 Quiz 10 Chapter 9	22	23 Break	24 Thanksgiving	25 Break	26
27	28 Chapter 10	29	30 Chapter 10	1	2 Chapter 10	3
December 2016						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4 Quiz 11 OWL 11 Due	5 CUR	6	7 Exam 4	8	9 Review	10
11	12	13	14 Final Exam 1:00-3:00	15	16	17

All OWL homework is due at 11:59 pm on the dates listed.

CUR – catch up and review days.

Quizzes will be posted on blackboard at 3:00pm on the date listed must be completed by 8:00 pm the following day.

X-Day – Last day to drop a course without a grade appearing on a student's transcript.

W-Day – Last day to drop a course with a grade of W.

Calculators

Calculators are necessary for this class. In order to maintain equality however, programmable calculators will not be permitted for use on exams or quizzes.

Grading

Exams	400 points (100 points each)
Final Exam	185 points
Quizzes	90 points (10 points each)
OWL Homework	90 points (10 points each)
In Class Participation	35 points

A	$\geq 93\%$	A-	90% - 92%	B-	80% - 82%
B+	87 – 89%	B	83% - 86%	C-	70% - 72%
C+	77 – 79%	C	73% - 76%	F	< 60%
D+	67 – 69%	D	60% - 66%		

Course Objectives for General Chemistry I

After completing General Chemistry I, students will be expected to:

1. Perform calculations involving chemical and physical processes, use the factor label method, record numerical answers with proper units, and attain proficiency in the proper use of scientific notation and significant figures, including the concept of uncertainty in scientific measurements.
2. Name compounds and ions, write their chemical formulas, calculate their molar masses and percent composition, and determine the empirical and molecular formulas of compounds.
3. Classify substances, reactions, and processes according to various classification schemes.
4. Complete and balance chemical equations, determine whether or not a reaction actually occurs based on chemical and physical properties of the reactants and products, and solve stoichiometry problems.
5. Describe and calculate the energy changes involved in chemical reactions and physical processes.
6. Describe the atomic and electronic structure of the elements.
7. Predict the relative magnitudes of physical properties of elements based on their electronic structures.
8. Determine the structures, shapes and polarity of compounds.
9. Describe properties of real and ideal gases using the Kinetic Molecular Theory and solve gas law problems.
10. Explain the chemical and physical behavior of substances based on the particulate level composition of the substance; use symbols to illustrate the particulate level composition.

Department of Chemistry Student Learning Outcomes for General Chemistry I

CHE 120 fulfills the following NKU chemistry department student learning outcomes:

- 1.1 Students will explain the major concepts and experimental findings in the chemical sciences.
- 1.2 Students will utilize critical thinking to solve scientific problems through the application of chemical science knowledge.

Syllabus Policies of the Department of Chemistry at Northern Kentucky University

-All items on syllabi are subject to change by the instructor.

-Students are responsible for reading and understanding all items on the syllabi. Any items not understood must be brought to the attention of the instructor within the first two weeks of class.

-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. Students may view the complete honor code at <http://www.nku.edu/audience/current-students/honor.html>.

-Cheating will not be tolerated. In accordance with the Code of Student Rights and Responsibilities, faculty members have the right to determine actions to be taken when a student is caught cheating.

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

-Diversity describes an inclusive community of people with varied human characteristics, ideas, and world views related, but not limited, to race, ethnicity, sexual orientation, gender, religion, color, creed, national origin, age, disability, socio-economic status, geographical region, or ancestry. Institutions that value diversity provide a supportive and nurturing environment that honors and respects those human differences. It is our responsibility as citizens of the NKU community to promote and value a campus climate that is safe, fair, respectful, and free from prejudice.

-Mid-term grades will be posted in myNKU by the deadline established in the Academic Calendar(<http://registrar.nku.edu/academiccalendar.html>).

-NKU is committed to making reasonable efforts to assist individuals with disabilities in their efforts to avail themselves of services and programs offered by the University. To this end, the university will provide reasonable accommodations for persons with documented qualifying disabilities. If you have a disability and feel you need accommodations in this course, you must present a letter to your instructor from the Disability Programs and Services Office (SU 303), indicating the existence of a disability and the suggested accommodations. More information can be found at <http://disability.nku.edu>.

-Northern Kentucky University takes Instructor and Course Evaluations very seriously as an important means of gathering information for the enhancement of learning opportunities for its students. It is an important responsibility of NKU students as citizens of the University to participate in the instructor and course evaluation process. During the two weeks prior to the end of each semester classes, you will be asked to reflect upon what you have learned in this course, the extent to which you have invested the necessary effort to maximize your learning, and the role your instructor has played in the learning process. It is very important that you complete the online evaluations with thoughtfully written comments. Student evaluations of courses and instructors are regarded as strictly confidential. They are not available to the instructor until after final grades are submitted, and extensive precautions are taken to prevent your comments from being identified as coming from you. Students who complete an evaluation for a particular course (or opt out of doing so in the evaluation) will be rewarded for their participation by having access to their course grade as soon as that grade is submitted by the instructor. On the other hand, any student who does not complete the course evaluation (or opt out of doing so in the evaluation) should expect to incur a two week delay in access to his or her course grade beyond the university's official date for grade availability. To complete online evaluations go to <http://eval.nku.edu>. Click on "student login" and use the same USERNAME and PASSWORD as used on campus.

Evaluations can affect changes in courses. Evaluations without comments are less valuable and less credible than those filled out thoughtfully. Comments that are expressed well are more effective than those that are not.

Positive feedback is just as important as criticism. Moreover, negative evaluations without any explanation and specifics are not especially useful.

Once grades are submitted, all evaluations are read not only by the instructor, but also by the instructor's department chairperson.

Credit hour definition – adjust anticipated out-of-class hour expectations by course

-In accordance with federal policy, NKU defines a credit hour as the amount of work represented in the achievement of student learning outcomes (verified by evidence of student achievement) that reasonably approximates one hour (50 minutes) of classroom instruction and a *minimum* of two hours of out-of-class student work. For every course credit hour, a typical student should expect to spend *at least* three hours per week of concentrated attention on course-related work including, but not limited to, class meeting time, reading, reviewing, organizing notes, studying and completing assignments. At least an equivalent amount of time is expected for other academic activities such as online courses, laboratory work, internships, practica, studio work and other academic work leading to the award of credit hours.

-The NKU department of chemistry has historically found that students must utilize additional out-of-class time beyond the established minimum to be successful in their coursework. In this course a typical student should anticipate spending approximately **6-10** hours beyond the regularly scheduled class time on studying the course material and completing assignments to be successful.

Foundations of Knowledge

The General Education Program at Northern Kentucky University guides students to become independent learners, innovative thinkers, and responsible citizens. The program gives students a foundation of values, knowledge, and skills that will empower them to discover their personal potential, communicate effectively, work in diverse communities, and solve problems in global society. Courses in the program will invite students to expand the life-long practice of asking questions, seeking new points of view, applying principles of reason, adjusting ideas in relation to new situations, and taking reflective action.

CHE 120 satisfies the goals associated with the area of Natural Science, supporting two of the five program goals stated in the mission of the General Education Program: (Goal A) Critical Thinking and (Goal D) Science and Technology. As such, this course satisfies and student learning will be assessed for the following Foundation of Knowledge general education student learning outcomes (SLOs):

A.3. Students develop evidence-based arguments.

D.1. Students apply scientific reasoning by designing experiments and effectively communicating scientific results through written, graphical, visual, and numerical means.

D.2. Students identify major concepts of science behind technological innovations or applications in our daily lives.

D.3. Students distinguish between scientific and non-science explanations by employing scientific methods.

Student proficiency on these four SLOs will be assessed using selected questions on homework, quizzes and exams. Rubrics using input from chemistry department faculty and approved for the Natural Science category of the General Education Program will be used to determine student proficiency for these SLOs. **This rubric is distinct from the grade breakdown presented earlier in this syllabus that is used for student grade determination.** Anonymous statistical data on the level of student proficiency will be collected along with representative samples of student work at various levels of proficiency.