

Hagerstown Community College
MASTER SYLLABUS

COURSE: CHM 104, General Chemistry II, 4 credits

INSTRUCTOR: V. Stein, C Nelling

SEMESTER/YEAR: SP 2017

COURSE DESCRIPTION: This is a continuation of CHM 103. The course includes solutions, kinetics, equilibrium, thermodynamics, and nuclear chemistry. Laboratory fee required. Prerequisites: CHM 103 and MAT 101 or appropriate score on placement test.

TEXTBOOK:

TextBook: Tro, *Chemistry, A Molecular Approach 4e*, Pearson Prentice Hall, 2017

Online Program: www.MasteringChemistry.com (access code required)

Lab manual: J. A. Beran, *Laboratory Manual for Principles of General Chemistry, 10th Ed.*, John Wiley & Sons, Inc., 2014

Scientific calculator that can perform the following functions: scientific notation (exponential notation), logarithms and simple arithmetic.

Safety goggles

STUDENT LEARNING OUTCOMES:

At the completion of this course, students should be able to:

1. Apply quantitative thinking processes and reasoning skills to core content of the second semester of general chemistry.
2. Communicate core course concepts in writing while using appropriate technology.
3. Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable.
4. Collect, analyze, and evaluate empirical data to substantiate chemical concepts.
5. Apply course content to environmental issues (e.g., pollution, global warming, and toxicology).
6. Relate chemical concepts to real life scenarios.
7. Access, process, analyze and synthesize scientific information.

TOTAL HOURS OF COURSE:

In order to meet the minimum requirements for a 4 credit class, the number of class/study hours expected of the student is multiplied by 3. The total work required to earn four college credits – 150 hours/semester, or 12 hours/week during a 15 week semester (includes class time plus additional homework/study time outside of class).

Please be aware that certain courses, or certain students, may require more than *minimum* hours of work per credit each week in order to be successful in that course.

Credit Hour to Clock Hour Calculation (for 4 credit course)

Direct Faculty Instruction: One hour Instruction/week/credit

$(50 \text{ min} * 15 \text{ weeks}) \div 60 \text{ min/h} = 12.5 \text{ h/credit} * 4 \text{ credits} = 50 \text{ hours}$

Student work out of classroom: (Two hours per credit per semester)

$(2 * 50 \text{ min} * 15 \text{ weeks}) \div 60 \text{ min/h} = 25 \text{ h/credit} * 4 \text{ credits} = 100 \text{ hours}$

	Direct Faculty Instruction (in-Class)	Student work outside of class
"Lecture" time (3 credits)	37.5 h	
3 Lecture Exams Prep time LSC/Home	(included in lecture time)	30 h (exam prep)
6-9 quizzes	(included in lecture time)	6-9 h (quiz prep)
Comprehensive Final Exam (10 chapters)	(Included in lecture time)	10+ h Final exam prep (review notes/group study)
Homework Assignments (online)		30+ h
"Lab" time (1 credit)	37.5 h	
Lab Preparation	1 h/lab*10 labs	10 h (prelabs)
2 Lab Exams	(included in lab time)	10 h
Lab Report Completion	(both in lab and outside of lab)	10 h
Total Lecture and Lab	75.0 h	107 h
TOTAL	180+ hours (may exceed minimum of 150 h for 4 credits)	