

MASTER SYLLABUS DOCUMENT

COURSE: CHM 101- INTRODUCTION TO COLLEGE CHEMISTRY - 4 credits

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COURSE DESCRIPTION:

This course is for students with little or no prior background in chemistry, whose program (health sciences, for example) requires one semester of chemistry, or who require preparation for additional coursework in chemistry. Emphasis is on calculations and measurement, dimensional analysis, formulas and equations, Stoichiometry, atomic structure, and molecular geometry, gas laws, and solutions. Laboratory fee required. 45 hours lecture and 45 hours laboratory. Prerequisite: MAT 099 or appropriate score on placement test. Semesters offered: Fall, Spring, Summer. 4 Credits.

TEXTBOOK:

Basic Chemistry, 5TH ed., by Timberlake and Timberlake. Pearson, 2017.(ISBN: 978-0-13-413804-6);

Foundations of Chemistry in the Laboratory 14th ed., by Hein, Peisen, Miner. J. Wiley & Sons, Inc. 2014. (ISBN: 978-1-118-28899-3).

Mastering Chemistry online homework access code is required.

Students will also need: **scientific calculator** (not graphing calculator) and **safety goggles**.

STUDENT LEARNING OUTCOMES:

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

1. Apply fundamental mathematical skills, scientific notation, and significant figures to chemical concepts and data.
2. Communicate chemical information using symbols, formulas, equations and appropriate IUPAC nomenclature.
3. Organize and evaluate numerical measurements using dimensional analysis to setup and solve problems
4. Make connections between abstract theories of chemistry to the real world.
5. Use technology to make laboratory measurements, analyze and present data, and collect relevant information.
6. Work collaboratively with other to accomplish a task.
7. Apply learned course material and critical thinking in further science courses, such as Human Anatomy and Physiology.
8. Access, process, analyze and synthesize scientific information.

TOTAL HOURS OF COURSE WORK EXPECTED:

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) – **Face to Face**

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	37.5 h	
3 Lecture Exams in testing center Prep time LSC/Home		6 h (taking exams) 21 h (exam prep)
9 quizzes	(included in lecture time)	9 h (quiz prep)
Comprehensive Final Exam (11 ch)	(Included in lecture time)	7+ h Final exam prep (review notes/group study)
Homework Assignments (online and written)		30+ h
“Lab” time	37.5 h	
Lab Preparation	0.5 h/lab*12 labs	6 h
Lab Practical Prep	3 h study time*2	6+ h
Lab Report Completion	(included in lab time)	
Total Lecture and Lab	75.0 h	75 h+
TOTAL	160+ hours (may exceed minimum of 150 h for 4 credits)	

***Remember: the above hours are estimated for the average student. You may require more or less than the suggested hours.**

Credit Hour to Clock Hour Calculation (for 4 credit course) – **Online**

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	37.5 h	
3 Lecture Exams in testing center Prep time LSC/Home		6 h (taking exams) 21 h (exam prep)
Viewing online materials and completing reading assignments		30 h
Comprehensive Final Exam (11 ch)	(Included in lecture time)	7 h Final exam prep (review notes/group study)
Homework Assignments (online and written)		25 h
“Lab” time	37.5 h	
Lab Preparation	1 h/lab*10 labs	10 h
Lab Exam Prep	3 h study time*2 (included in lab time)	6 h
Lab Report Completion		
Total Lecture and Lab	75.0 h	105 h+
TOTAL	180+ hours (exceeds minimum of 150 h for 4 credits)	

***Remember: the above hours are estimated for the average student. You may require more or less than the suggested hours.**