

Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.

COURSE SYLLABUS

CHEM 108

CHEMISTRY FOR NURSING PROFESSIONALS

COURSE DESCRIPTION

A study of the basics of general and organic chemistry at an introductory level, including atomic structure, bonding, acids and bases, organic functional groups and selected organic reactions, with an emphasis on nursing applications. This course includes an independent hands-on microscale laboratory experience. Restricted to online students with an RN license pursuing a BSN.

RATIONALE

This course provides a foundational knowledge of chemistry for students in the RN to BSN online degree program. Its goal is to increase competency in analytical reasoning by developing critical thinking and problem-solving skills and to provide a foundation in chemistry for Registered Nurses; it also conveys ways knowledge is acquired in natural science, and introduces some laboratory skills. Completion of CHEM 108 with a grade of C or higher is required for graduation from the RN to BSN online degree program. This course assumes basic knowledge of chemistry and therefore will require the RN licensure.

I. PREREQUISITE

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

II. REQUIRED RESOURCE PURCHASE

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

III. ADDITIONAL MATERIALS FOR LEARNING

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Blackboard [recommended browsers](#)
- D. Microsoft Office

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

- A. Describe structures and properties of atoms, ions, molecules, pure inorganic, organic, and biological substances and mixtures.

- B. Name inorganic and organic substances.
- C. Write chemical formulas and structures of inorganic, organic, and biological substances.
- D. Write balanced chemical equations for reactions of inorganic, organic, and biological substances.
- E. Identify energy and equilibrium effects in physical and chemical changes.
- F. Perform calculations with unit conversions, energy, mass/moles, gas laws, concentrations, and acidity.
- G. Identify the general structure, properties, function, and basic reactions of biological molecules.
- H. Analyze data to explain and critique experimental results.
- I. Write laboratory reports based on experimental data and analysis.
- J. Discuss the implications of the biblical worldview on the study of chemistry.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

- A. Textbook readings and lecture presentations/notes
- B. Course Requirements Checklist

After reading the Course Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.
- C. Discussion Board Forums (4)

Discussion boards are collaborative learning experiences. Therefore, the student will research an assigned topic and post a thread in the appropriate Discussion Board Forum. Each thread must be at least 250 words, and each reply must be at least 150 words.
- D. Homework (8)

The student will complete homework assignments using the Sapling Learning system. Each homework assignment will correspond to the weekly reading and instruction material covered in the course.
- E. Labs (8)

The student will complete 1 lab exercise weekly. Grades are based on the quality of results, calculations, and written interpretations of results. Completing every lab, including performing the “wet” experiment and submitting the report, is required to pass this course. In some labs, the student will also complete lab simulations and/or online activities. Each student must obtain data and answer questions in laboratory assignments individually, and the sharing of data or answers between students will be considered as academic dishonesty (plagiarism or cheating).

F. Quizzes (6)

A quiz will be given for every textbook chapter covered in the course. The purpose of quizzes is to allow the student to test himself/herself on comprehension and mastery of new material. Two attempts will be allowed on each quiz.

G. Exams (4)

Exams will be given in every other module/week and will be cumulative over the material covered in the course. Exam questions may be in the true/false, multiple-choice, fill-in-the-blank, and/or matching format. Only 1 attempt will be allowed on each exam.

VI. COURSE GRADING AND POLICIES

A. Points

Course Requirements Checklist		10
Discussion Board Forums (4 at 20 pts ea)		80
Homework (8 at 15 pts ea)		120
Labs (8 at 25 pts ea)		200
Quizzes (4 at 50 pts ea)		200
Exam 1	(Modules 1–2)	100
Exam 2	(Modules 3–4)	100
Exam 3	(Modules 5–6)	100
Exam 4	(Modules 7–8)	100
	Total	1010

B. Scale

A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Limits of Confidentiality

Students are encouraged to share prayer requests and life concerns with the professor in this class. Not only will the professor pray for and care for students, but can guide students to appropriate University resources if desired.

However, in the event of a student's disclosure, either verbally or in writing, of threat of serious or foreseeable harm to self or others, abuse or neglect of a minor, elderly or disabled person, victim or witness of a crime or sexual misconduct, or current involvement in criminal activity, the faculty, staff, administrator, or supervisor will take immediate action. This action may include, but is not limited to, immediate notification of appropriate state law enforcement or social services personnel, emergency contacts, notification of the appropriate program chair or online dean, or notification to other appropriate University officials. All reported information is treated with discretion and respect, and kept as private as possible.

D. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Academic Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

COURSE SCHEDULE

CHEM 108

Textbooks: Armstrong, *General, Organic, and Biochemistry: An Applied Approach* (2015).
Hands-On Labs, Inc., *HOLCloud Experiment Instructions* (2017).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Armstrong: Ch1, Secs 2.1-2.5, 8.1, Appendix A-1, A-2 Hands-On Labs: Lab 1 1 report sheet 4 presentations 2 websites	Course Requirements Checklist DB Forum 1 Homework 1 Lab 1 Quiz 1	10 20 15 25 50
2	Armstrong: Secs 2.6-2.7, Ch 3, Sec 4.5 VSEPR addendum Hands-On Labs: Lab 2 1 report sheet 3 presentations	Homework 2 Lab 2 Exam 1	15 25 100
3	Armstrong: Ch 4, Ch 5 Hands-On Labs: Lab 3 1 report sheet 4 presentations	DB Forum 2 Homework 3 Lab 3 Quiz 2	20 15 25 50
4	Armstrong: Ch 9, Secs 10.3, 10.4, 10.7, 11.3, 11.5, 12.3, Appendix B (classes) Hands-On Labs: Lab 4 1 report sheet 4 presentations	Homework 4 Lab 4 Exam 2	15 25 100
5	Armstrong: Ch 6, Ch 7 Hands-On Labs: Lab 5 1 report sheet 4 presentations	DB Forum 3 Homework 5 Lab 5 Quiz 3	20 15 25 50
6	Armstrong: Secs 10.1, 10.6, 11.1, 11.2, 11.4, 11.6, 11.7, Ch 13, Appendix B (reactions) Hands-On Labs: Lab 6 1 report sheet 4 presentations	Homework 6 Lab 6 Exam 3	15 25 100

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
7	Armstrong: Ch 14, Sec 10.5, Ch 15 Hands-On Labs: Lab 7 1 report sheet 4 presentations 2 websites	DB Forum 4 Homework 7 Lab 7 Quiz 4	20 15 25 50
8	Armstrong: Ch 16, Ch 17 Hands-On Labs: Lab 8 1 report sheet 4 presentations	Homework 8 Lab 8 Exam 4	15 25 100
TOTAL			1010

DB = Discussion Board

NOTE: Each course module/week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final module/week ends at 11:59 p.m. (ET) on **Friday**.