



## Course Syllabus

### I. Basic Information

Chemistry 111

Four Semester Hours Credit

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### II. Scope of the Course

This is the basic chemistry course taught as background for all chemistry and biology courses. It covers the principles of organic, inorganic, physical, and analytical chemistry. It is the first of a series of three courses.

### III. Objectives of the Course

- For students to demonstrate processes of science such as the scientific method and understand the major concepts of chemistry such as atomic structure, nuclear chemistry etc.
- For students to be able to explain the concepts of energy with changes that occur in matter, these changes being both chemical and physical.
- For students to be able to explain the different types of bonding, different classes of chemical reactions, balancing of chemical equations, solutions and the quantitative calculations of concentration.
- To prepare the student for further studies in the sciences.
- To observe the beauty and orderliness of God's Creation on a molecular level
- To develop skills to be a productive member of a team.

### IV. Texts To Be Used.

Chemistry the Central Science (11<sup>th</sup> Edition)  
Brown, LeMay, Bursten, Murphy.  
Chemistry: A Guided Inquiry (4<sup>th</sup> Edition)  
Moog, Farrell.

A binder for the above loose leaf workbook will be needed.

Laboratory Manual to Accompany Chemistry Text (sold by Department)

### V. Special Projects and Activities

At the beginning of the semester, the student should complete a math review. Appendix A in the Brown text must be studied. Outline of the material to be studied in this review:

- System of Units
- Metric System
- Uncertainty in Measurements
- Scientific notation
- Significant Figures

### VI. Method of Instruction

The primary methods of instruction will be "guided inquiry" in the classroom, laboratory experiments, practice tests, and homework. The instructor will guide student groups in the classroom. It is then the student's responsibility to utilize the text to support the group work. For best success students will:

- Read assigned text material before class;
- Attend class and participate;
- Complete assigned exercises;
- Prepare for quizzes and tests using text, classroom materials, and web materials; and
- Attend and complete lab exercises

### VII. Method of Evaluation

Each activity will be weighted as follows:

Activity	Points
Exams (3) @ 100 each	300
Homework Exercises	100
Quizzes (5 @ 10 each)	50
Group ChemActivities	100
Laboratory	250

Final Exam	200
Total	1000

The final course grade will be assigned utilizing the following scale.

Total Points	Course Grade
1000 - 900	A
800 - 899	B
700 - 799	C
600 -699	D
Below 600	F

Late, unexcused homework and practice tests will be docked 10% per school day (or portion thereof) for 3 school days, after which they will not be accepted. If not handed in to the instructor by the end of the 3 days, a grade of zero will be given.

### VIII. Lecture Attendance

The student who expects to succeed in chemistry 111 must attend class regularly. There can be a penalty for excessive absences. Such a penalty will be assessed should an examination be missed for any reason other than a documented illness or family trauma.

### IX. Purpose

This syllabus is intended to help the student plan his or her work in this course and is in no way considered to be a contract. It is subject to change at any time by the instructor should a change be in the best interest of the class.

### X. Cheating Policy

The penalty for cheating (giving or receiving aid on a test, plagiarism on homework, lab reports, etc.) is an "F" in this course. Cheating will be reported to the academic center as required by school policy.

### The Laboratory

The following laboratory exercises are designed to develop laboratory skills and to promote an interest in and understanding of the concept of General Chemistry.

- I. A weekly report will be due after each laboratory period. Each report counts 15 points. The report will be graded on neatness, completeness, and accuracy.
- II. A weekly pre-laboratory report worth 5 points will be collected at the beginning of each laboratory period. This is a preparatory exercise and is essential for efficient laboratory work. **The lab procedure outlines in the lab text should be read and highlighted before the laboratory period.**
- III. Students are expected to do their own work individually and keep desks neat and clean. Students are expected to do their work efficiently and be out of the laboratory on time each laboratory day. No work is allowed after 5:00 p.m.
- IV. Each laboratory period must be attended. Makeup work will only be allowed for excused absences (official college-sponsored activity other than intramural sports, or documented illness, or family trauma). Those participating in a college-sponsored activity must arrange for the makeup prior to the event. Those with an unexcused absence will be given a zero for that lab.

### LABORATORY SCHEDULE

WEEK	TITLE	Date	Textbook Sections	ChemActivity
8/31	Check-in, Safety Review	8-25	1.1-1.6	S-SF
9/8	Qualitative Analysis of Metal Cations by Paper Chromatography	8-27	1.1-2.3	C-SF & C-1
		9-1(Q)	2.4-2.7	C-2 & S-24
		9-3	2.7-2.9	C-24 & C-Nam PPT
		9-8	3.1-3.3	C-29 & C-R.Types
9/15	Densities of Metals: Changing Copper into Silver and Gold	9-10(Q)	3.4-3.7	C-M,.Emp & S-30
		9-15	3.7	C-30 & Exam Rev
		9-17		<b>Exam</b>
9/22	Reaction Rates and Half-lives	9-22	4.1-4.4	C-49 & S-48
		9-24	4.1-4.5	C-48 & S-S., Net
9/29	Determination of the Molar Mass of a Copper compound	9-29(Q)	4.1-4.5	C-Sol., Net & S-32
		10-1	4.5-4.6	C-32 & S-S.Stoich.
10/6	Synthesis of Aspirin	10-6	4.6-5.3	C-S.Stoich & C-E.Form
		10-8	5.1-5.5	C-E.Chng&S-S.Heat
		10-13	5.1-5.7	C-S.Heat & C-H.Law
10/20	The Synthesis and Characterization of Copper (II) Complex	10-20(Q)	6.1-6.5	C-E.Rad & C-S.Mod
		10-22	6.6-6.9	C-12 & S-Quant. Num.
		10-27	6.6-6.9	C-Quant# & S-El.Conf
		10-29	6.8-6.9	C-El.Conf & Exam Rev
10/27	Acid/Base Titration of Vinegar	11-3		<b>Exam</b>
		11-5	8.1, 8.5-8.8	C-L.Stru I & S-B.Ord
		11/10	8.5-8.8	C-BOrd & C-L.Stru II
11/3	Determining the Enthalpy of Chemical Reactions	11-12	8.2-8.4, 9.1-9.4	C-M.Shap & C-P.Nonp
		11-17	9.5	C-Hybrid.& Exam Rev
11/10	VSEPR Theory and the Shapes of Molecules	11-19		<b>Exam</b>
		11-24	10.1-10.4	C-Gas Laws
11/17	The Gasimetric Analysis of a Carbonate Compound	12-1(Q)	10.5-10.10	C- Gas Behavior
		12-3		Review for Final
11/30	Exam and Checkout			