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WEST VIRGINIA UNIVERSITY AT PARKERSBURG
UNIFORM COURSE SYLLABUS

Name of Course: **Introduction to General Chemistry Laboratory** Course No. **111Lab**

Department: **Chemistry** Division: **Natural Sciences/Mathematics**

I. Course Objectives

At the completion of the general chemistry laboratory, the student will be able to:

1. Describe the safe handling of hazardous substances.
2. Use laboratory safety equipment.
3. Perform metric system measurements.
4. Identify and use volumetric glassware.
5. Identify and use laboratory apparatus.
6. Use significant figures in calculations.
7. Experimentally determine the density of substances.
8. Distinguish physical and chemical changes.
9. Perform physical separations of mixtures.
10. Experimentally determine the chemical formula of a hydrate.
11. Categorize chemical reactions
12. Experimentally apply Boyle's Law and Charles' Law.
13. Experimentally determine the conditions necessary for solution formation.
14. Experimentally determine the boiling point constant and freezing point constant of solutions.
15. Experimentally determine the properties of acids and bases.
16. Experimentally determine the characteristics of salt hydrolysis and buffer formation.

II. Topics to Be Studied

How will course objectives be met?

Exercises to be performed include laboratory safety training; linear measurements and calculations which require the application of significant figures; the use of volumetric glassware and the determination of density; physical and chemical changes; methods of physical separation of mixtures and analysis of the components; the determination of the characteristics of solution formation; colligative properties of solutions; acids, bases, salts, and buffers.

III. Special Projects to Be Included in Course

Research papers **Reports**
Surveys **Annotated bibliographies**
Other

Written laboratory reports will be required for each experiment.

IV. Methods of Student Evaluation

Tests (how many? how often? what type?)
Quizzes
Oral Presentations
Written Papers
Laboratory Activities
Clinical Experiences

Reports

Written reports will be required for all laboratory experiments. Reports will normally be due one week after the experiment was scheduled, and laboratory reports will not be accepted unless the student performed the experiment. *Late reports will not be accepted without prior instructor approval.* **Missed laboratory sessions may not be made up, and a 0% score will be recorded for the missed laboratory report. However, at the end of the semester, the two lowest report scores will be dropped before the report average is calculated.**

Practicals

Two scheduled laboratory practicals will be given during the semester. Each practical will consist of an experiment in which the student will collect and interpret data and short answer items related to the scheduled experiments performed prior to the practical. **A missed laboratory practical should be made up by appointment before the next scheduled laboratory sessions. Only under the most extenuating circumstances will a student be permitted to make-up more than one practical examination.** Students failing to make-up a missed laboratory practical will receive a 0% score for that examination. Make-up practical examinations will likely be different from the regularly scheduled examination.

Laboratory Average

The final laboratory average will be calculated on the following basis:

Laboratory Report Average	= 33.3%
Laboratory Practical I Score	= 33.3%
Laboratory Practical II Score	= 33.3%
Total	**= 100%**

V. Assessment of Outcomes

What measurements will be used to demonstrate that outcomes have been reached? (Refers to class as a whole, not individual students.)

Students will be asked to complete a course and instructor evaluation form at the end of the semester. Faculty who taught the course will confer to determine any modifications which could be implemented to refine and improve the course

VI. Other Information

What additional information will help to clarify the course?

Prerequisite: Math 021 (elementary algebra) or equivalent.