V. Textbooks and Materials:

The following are REQUIRED:


(Adapted from Burns, R.; Russo, S.; Silver, M.; Timberlake, K.)

TI-30Xa calculator, scantron forms, paper, pen, pencil. For Lab: safety goggles which protect against splashes and impacts, nitrile gloves, lab apron, closed toed shoes

The following are SUGGESTED:


II. Course Objectives:

At the completion of the course, the student will have encountered situations where the following were experienced:

A. To provide a general overview of modern chemistry to students who take the course as a terminal course.

B. To prepare students who have limited backgrounds in chemistry with the fundamental concepts necessary to further their studies in chemistry.

III. Learning Experiences:

A. Students will take part in lecture-discussions coordinated with reading assignments in the text. In order to do so, students are expected to have read the assignment prior to class time.

B. Students will view various visual materials such as videos, slides, and transparencies, during lectures and laboratories to stimulate interest, clarify concepts, and enrich course content.

C. Students will perform various investigations in the laboratory which are pertinent to and coordinated with lecture topics.

IV. Course Content:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment</th>
<th>Laboratory</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>What is Chemistry</td>
<td>Chapter 1</td>
<td>Safety</td>
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<td>2</td>
<td>The Evolution of Atomic Theory</td>
<td>Chapter 2</td>
<td>Physical / Chemical Changes – Burns; Intro to Exp: The Ice-Cube Dilemma - Russo,</td>
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<td>3</td>
<td>The Modern Model of the Atom</td>
<td>Chapter 3</td>
<td>Families of Elements – Conwin; Atomic Structure - Timberlake,</td>
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<td>4</td>
<td>Nuclear Chemistry</td>
<td>Chapter 4</td>
<td>Atomic Fingerprints – Conwin; Review; Exam 1</td>
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<td>5</td>
<td>Chemical Bonding and Nomenclature</td>
<td>Chapter 5</td>
<td>Nuclear Radiation – Timberlake</td>
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<td>6</td>
<td>The Shape of Molecules</td>
<td>Chapter 6</td>
<td>Compounds and Their Formulas – Timberlake; Molecular Models and Chemical Bonds – Conwin</td>
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<td>7</td>
<td>The Chemistry of Carbon</td>
<td>Chapter 7</td>
<td>Organic Models and Functional Groups – Conwin; Review; Exam 2</td>
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<td>8</td>
<td>Synthetic and Biological Polymers</td>
<td>Chapter 8</td>
<td>Plastics and Polymerization – Timberlake; Digestion of Foods – Timberlake</td>
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<td>9</td>
<td>Intermolecular Forces and the Phases of Matter</td>
<td>Chapter 9</td>
<td>Diffusion, the Race Between Gases – Burns; Paper Chromatography - Burns</td>
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<td>10</td>
<td>Chemical Reactions</td>
<td>Chapter 10</td>
<td>Chemical Reactions and Equations – Timberlake; Review; Exam 3</td>
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<td>Electrolytes, Acids, and Bases</td>
<td>Chapter 11</td>
<td>Ionic Reactions – Burns; Acids, Bases, pH, and Buffers - Timberlake</td>
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<td>12</td>
<td>Electron Transfer in Chemical Reactions</td>
<td>Chapter 12</td>
<td>Activity Series of Metals – Conwin; Conversion Factors in Calculations – Timberlake Density – Burns or Heat of Combustion, Caloric Content of Food – Russo; Review; Exam 4</td>
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<td>13</td>
<td>The Numerical Side of Chemistry</td>
<td>Chapter 13</td>
<td>Preparation of Alum from Scrap Aluminum - Burns</td>
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<td>14</td>
<td>Stoichiometry and the Mole</td>
<td>Chapter 14</td>
<td>Analysis of Alum – Conwin; Acid, Base Titration - Timberlake</td>
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<td>15</td>
<td>Solutions</td>
<td>Chapter 15</td>
<td>Preparation of Alum from Scrap Aluminum - Burns</td>
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<tr>
<td>16</td>
<td>Gases</td>
<td>Chapter 16</td>
<td>Molar Volume of Gas – Burns; Partial Pressure of O₂, N₂, CO₂ - Timberlake</td>
</tr>
</tbody>
</table>

V. Student Evaluation:

Homework ---- Always do the blue numbered problems found throughout each chapter. The answers are given at the end of each chapter. Homework assignments, generally to be turned in on Scantron forms, will be given throughout the semester. Scantrons need to be completed in pencil!

Quizzes ------ Usually quizzes will be announced in advance. “Pop-quizzes” may also be given.

Exams -------- The tentative exam schedule is shown below. Exams may cover not only the chapters listed but may also include lab material or material from a previous exam. At the end of the semester, the average of all hour exams will replace the lowest hour exam score.

4 Exams, 100 points each
Final Exam, Comprehensive 200 points
Homework, Quizzes - Lecture, Lab about 600 points
Laboratory - Reports about 300 points
Attendance 100 points

TENTATIVE

Schedule of Exams

Exam 1 Thursday, February 2 Chapters 1-3
Exam 2 Thursday, February 23 Chapters 4-6
Exam 3 Thursday, March 22 Chapters 7-9
Exam 4 Thursday, April 12 Chapters 10-12
VI. SPECIAL NEEDS: If you have special needs as addressed by the Americans with Disabilities Act and need any text or course materials provided in an alternative format, notify your instructor immediately. Reasonable efforts will be made to accommodate your special needs. The Access Office is located in AS103, under the direction of Lisa Leftridge, extension 2152. Refer to MAC’s Services offered by MAC’s Access Office in the Student Handbook and Planner.

ABSENCES: In accordance with College policy, students will be dropped from class for nonattendance after two weeks of consecutive unexcused absences. After THREE unexcused absences or tardies, each absence or tardy, whether to class or lab, will result in the loss of FIVE points which will be deducted at the end of the semester from the 100 possible attendance points. Refer to MAC’s Attendance Policy in the Student Handbook and Planner.

QUIZZES AND EXAMS: Quizzes or exams missed because of an unexcused absence or tardy will not be made up unless my permission is given. An e-mail or phone call from you indicating that you will be absent, does NOT mean that you will be able to make-up a quiz or test. Quizzes or exams missed because of an excused absence are either to be taken early or are to be made up the day the student returns to class. EXAMS that are missed are subject to a 25 point per day penalty unless my permission is given ahead of time. Missed exams will be taken to the Learning Center by noon the next day. It is your responsibility to know your schedule and the exam schedule; so be sure to arrange to take your exam(s) before the respective exam date. Exams are scheduled to be taken during lab time, however, there might be times when exams would be taken in the Learning Center, outside of regular class time. At the end of the semester, the average of all hour exams will replace the lowest hour exam score.

LATE WORK: Late work is subject to a 5 point per day penalty and is not accepted once Scantron forms are returned or once the solutions have been posted unless my permission is given.

LABORATORY: You are expected to come to lab prepared and ready to begin. You are expected to have read the lab and to have completed any pre-lab assignment. You are expected to follow all safety rules, including wearing goggles, gloves, closed toed shoes, and lab apron. Missed labs are not made up. If you miss a lab because of an unexcused absence, you lose all the points associated with that lab. Usually the experiment of the day will be due before you leave the lab. Always show your work when doing calculations and watch significant figures.

BEHAVIOR: You are to respect the learning environment of fellow students and realize that your behavior greatly impacts others. Disruptive behavior, whether in the classroom or the lab, will not be tolerated and will result in the disciplinary action, depending on the offense, ranging from the loss of that day’s attendance points to being dismissed from class. Examples of disruptive behavior include, but are not limited to: disruptive whispering / talking / chattering during class, coming to class late, getting up during the middle of class, leaving class before it is dismissed, or texting / using a cell phone during class. Please silence your cell phones and other electronic devices. The use of electronic devices, including answering your cell phone or texting, during class or lab, without prior approval of the instructor, could result in the ENTIRE CLASS LOSING THAT DAY’S ATTENDANCE POINTS. Refer to MAC’s Classroom Electronic Use Policy in the Student Handbook and Planner, which includes a list of electronic devices that should not be accessible without instructor approval. Dishonesty, plagiarism, or cheating will not be tolerated and will result in disciplinary action, depending on the offense, ranging from a zero on the assignment to being suspended from MAC. Refer to MAC’s Academic Integrity Policy in the Student Handbook and Planner.

CoursEval: If the CoursEval Survey is to be completed toward the end of the semester, a MAC e-mail will be sent indicating the available dates, the link to the site, and the necessary login and password. MAC e-mail reminders will be sent to remind students to complete the survey. If the Survey is to be completed, it will count as a homework assignment. These surveys help me become better at teaching you, so please take them seriously – I certainly do. The results of the survey are not made know to the instructor until the next academic semester.

FOOD/DRINK POLICY: To decrease the risk of illness. NO FOOD IN THE CLASSROOM. You may have water / soda / coffee in the classroom unless/until it becomes a problem. NO FOOD OR DRINK in the LABORATORY.

EXTRA CREDIT: Generally there are extra credit assignments or quizzes given during the semester. One MAC Special Events Cards may be turned in for 2 points per event. Sports events are limited to one of each type per semester. The MAC Special Events Cards are available in the Student Services Office. A maximum of 10 extra credit points can be earned by using MAC Special Events Cards.

VII. To be successful and gain the most out of this class:
--- COME TO CLASS and COME PREPARED
You can’t get it if you are not here!
Read the chapter before class. Take notes while reading. Work through the example problems and the blue problems throughout the chapter. Keep up with the lecture. . . .
Better yet, read ahead.
The material, even the math, becomes clearer if you have seen it before.

--- REVIEW AS SOON AS POSSIBLE
Practice, Practice, Practice!
Rewrite notes. Make out notecards…. especially for nomenclature, definitions, formulas. Repeat key points out loud. Practice writing down key points. Practice problems until you can do them without help, then change some numbers, and do the problems again.

--- WORK AT IT DAILY and GET HELP
Keep up. Time Management!
Set aside two – three hours a night, every night, to seriously study your chemistry. Show your work when doing homework problems so that you remember how to do the problem when studying for your exam. Learn to recognize problems by types. Use the solutions manual as a guide, not as a crutch. Form study groups. Make a new friend.
Stop by my office, #29, anytime for help. See the EXCEL Program, Room C3, for free tutoring. See the MATH LAB, upstairs in the library, for help with math or calculator related questions.

Be sure you do your own work. Make sure you can do the homework problems. You should not be copying answers from anyone.

It is normal to feel overwhelmed, stressed, or lost at times. If you are struggling, see me for help BEFORE the next class. Come to my office for help…. I’ll do my best to find a way to help you understand the material. Learning Chemistry is like learning a foreign language…. it takes time, a great deal of effort, and lots of practice.

It is so important to read the book, rework problems, keep up, and get help!