Chemical education is in a state of constant flux. Students enrolled in chemistry need an insight into both theory and practice. Though the basic concepts have not changed for many years, the method of teaching these concepts certainly has. A clear understanding of the concepts and principles in chemistry seldom results when students take copious notes. For most students, demonstrations and active participation are extremely important to achieve understanding of these concepts. The underlying philosophy of this author is that teaching is a joint enterprise between professor and student. With the advent of computers, the Internet, and CD-ROM, students have the potential of learning at a much faster rate than in previous years. It is the advantage of students and their professors to take advantage of all these technologies.

The preparation of General Chemistry students varies widely, and our objective must be to make the material understandable to the student without distortion or oversimplification. Although chemistry is everywhere, and without it life would be impossible, an excited anticipation of learning chemistry is not evident among the majority of students. Instead, students often approach the study of chemistry with considerable apprehension. The program is designed to help students to see how chemical principles and concepts are developed, and how these principles can be used to explain phenomena observed in daily life as well as in the laboratories. Special attention is given to problems we face today and the attitudes, understandings, and skills that will help the students analyze carefully and act wisely on issues that will confront us all as citizens in our technological world.

Course Objective: This course is an introductory course developed to prepare you to be successful in General Chemistry I (1031). It is designed to familiarize you, the student, with qualitative and quantitative aspects of chemical sciences. This course will also help you to develop the mathematical skills needed for the understanding of the many chemical principles, and concepts found in chemistry. You will also develop critical thinking skills necessary for the solving of scientific problems not only in this course, but also in the many courses that lie ahead.

Course Format: All sections will meet in a common lecture format Monday, Wednesday and Friday, and recitation which meets one hour per week. In each class: lecture, discussions, questions and answers, practice and problem-solving sessions will take place.

Information regarding purchasing said publication is found directly under the course syllabus in the Document section on Canvas. GRL Registration Access.pdf

Laboratory: Information forthcoming
Other required material related to course: Calculators with Scientific Notation and Logarithms. It is your responsibility to keep your calculator in good working condition, and to bring to class at all times. The sharing of calculators during quizzes and examinations is not permitted.

Grading in CHEM 1027 (Lecture):
Three unit exams, multiple choice (100 points each)................................. = 300 points
Five Quizzes (recitation) problem solving (20-50 points each: subject to change) ...... = 100-250 points
Unannounced Lecture Quizzes (consisting of 1 or 2 problems)...................... = 100 points
One Final Exam, cumulative, multiple choice (200 points) .................................. = 200 points
Laboratory Exercises (20% of total lab score) ..............................................

On-line Homework Self-Assessment Problems at the end of each chapter
(90+% 100 pts, 80-89%, 90 pts, 70-79%, 80 pts,
60-69%, 70 pts, 50-59%, 60 pts)

Total points .......................................................... = (800-950) + 20% of total lab score

Course Grading Scale: Percentage: 100%-92%: A, 91.9%-90%: A-, 89.9%-87%: B+,
86.9%-83%: B, 82.9%-80%: B-, 79%-78%: C+, 77%-74%: C, 73%-66%: D, 65%-0%: F.

Unit Exams and Quizzes:
The dates for the three (3) unit exams are on the schedule (see page 5). As reinforcement, each exam has the potential to be cumulative. You will be given one class period to take each of these exams. One Final Exam will be given during finals week. Two hours will be allowed for this exam. The exam schedule will not change so make all appropriate arrangements to be in class on those days.

Each Unit Exam will cover three (3) or four (4) chapters. They will be composed of 25-30 multiple choice (MC) questions. In general, the MC questions will test your conceptual understanding of the material covered, and analytical (critical thinking) problems, which involve numerical calculations, will be presented. The dates of these exams will be specified in your syllabus.

There will be five (5) recitation quizzes. The material for the quizzes will often be derived from in-class questions and problems, and/or problems covered during recitation class. The dates of these quizzes will be specified in your syllabus.

There will be unannounced lecture quizzes given throughout the semester. If you miss these quizzes, you will be given a “zero.”

There are no make-up exams or quizzes. If something unavoidable comes up that requires you to miss a testing date, consult with your instructor before the quiz or exam. All other absences must be accompanied by documentation of disastrous event. Alternate arrangements can be made if your unavoidable absence is verifiable.

The Quizzes will be short answer or problems involving calculations upon which students must show all work to receive full or any credit.

NO SCORES WILL BE DROPPED. ALL SCORES WILL BE TALLIED AT THE END OF THE SEMESTER

Documentation of Disastrous Events:
Disastrous events include serious and disabling accidents, doctor-mandated absences directly due to serious illness, and death or serious and disabling accidents in your immediate family. In each case, you are required to document the circumstances of the incident sufficiently so that the instructor can verify the incident. Examples of relevant documents include copies of police reports, hospital admissions papers, and a doctor's note with an explanation of the circumstances including the doctor's name and valid phone number.

If you miss a testing date due to an avoidable circumstance (e.g. oversleeping, getting stopped for speeding, needing to drop someone off or pick someone up, forgetting that there is an exam on that day, etc.) no allowances will be made. If you are late for an exam or quiz due to avoidable circumstances, no extra time will be provided to you.

Reading Assignments and Representative Practice Problems:
You are required to actively read the associated chapters in the textbook prior to the dates designated for that chapter's lecture. Active reading includes recognizing the essential concepts, trying the sample exercises, and relating the sample exercises to the end-of-the-
chapter questions and problems. **Note:** Some exam and quiz material may come from information provided on the chapter even if it is not covered in lecture.

You will be assigned a variety of questions and problems from the end of each chapter. All of them should be used as practice to help you learn the subjects in those chapters. You will not be required to turn in any of the end of the chapter problems, however, these problems are assigned to enable your success in this course. Full solutions to these practice problems will be made available on reserve or on “blackboard.” By solving these problems, you can develop the necessary skills to do related problems in class, on exams and quizzes.

**Skill Checking System:**
The Skill Checking System is designed to check and improve your proficiency with critical skill subjects during courses in basic chemistry. Two (2) criteria are used to check, improve, and verify your abilities in these skill subjects: individual performance and exam performance.

**Library Reserve Information:**
When possible, solutions and answer keys to homework, handouts, worksheets, practice exams, assigned problems, and various other materials will be put in a binder and placed on reserve in the library and/or on “blackboard.” You will need to ask for the CHEM 1027 binder at the circulation desk. The contents of the binder may ONLY be used in the library. You may photocopy pages for your own personal use. You are responsible for putting all of the pages back in their proper order before returning the binder to the circulation desk. Any misuse of the instructor's binder will result in its removal from the library. You will need to leave your Temple University ID at the circulation desk to check out the binder for use in the library. Library staff members have the authority and the responsibility to set reasonable limits on this reserve material and to prohibit individuals who are abusive from taking materials out. Please respect them.

**Office Hours:**
Office hours are provided for students to ask questions and review material. Students have priority during office hours. Occasionally, office hours may be cancelled or changed for University functions or unavoidable conflicts. Office hours will be posted and announced in lecture class. Necessary changes in scheduled times will always be posted on the door of the office. If you have to ask the instructor a question or you have a concern, please feel free to call my office, 215-204-2141, or send a message via e-mail, allen.thomas@temple.edu. I usually check for messages between 9:00-10:00 p.m., and I will respond whenever possible by 11:00 p.m.

**Academic Honesty:**
It is perfectly acceptable, even advisable, for you to study with your classmates as you work to learn the material in this course. However, even if you study together, you must demonstrate what you, yourself, have learned. Honest behavior includes, but is not limited to the following:

- Providing accurate representations of what you figured out, what you know, and what you understand.
- Providing individualized solutions and distinctive written work on everything you turn in for credit.
- Using only those materials explicitly allowed (e.g., textbooks, handouts, course notes, or any form of paper or electronic "cheat sheets" are forbidden.)
- Seeking and following specific verbal and written directions and instructions.
- Stopping when the time limit is announced during a timed test.
- Resisting the temptation to ask someone else to do your work for you.
- Declining requests to do another person's work for them.
- Resisting the temptation to copy someone else's work, avoiding doing your own work.

All suspicious behavior will be monitored, investigated, and corrective measures will be taken.

**Classroom Behavior:**
Temple University’s faculty has the right and responsibility to control classroom behavior, including cheating, lateness, rudeness uncivil attitudes, insensitivity which infringes in the rights of students to learn and faculty to teach. The faculty may initiate action to restrain or prohibit improper behavior to include removal from class, dropping from class rolls, reduction of grade, failure of the course, and separation from the University.

**Students with Disabilities:**
Temple University is committed to the inclusion of students with disabilities and provides accessible instruction, including accessible technology and instructional materials. The process for requesting access or accommodations for this course is: 1) Advise me of the need for access or accommodations; 2) Contact Disability Resources and Services (DRS, 215-204-1280, 100 Ritter,
http://www.temple.edu/disability) to request accommodations; 3) DRS will consult with me as needed about essential components of the program; 4) Present me with a DRS accommodation letter.

Help: Take full advantage of all of the academic support services available at Temple University. These include your lecturer’s and recitation instructor’s office hours, and the Center for Learning and Student Success (CLASS), 1810 Liacouras Walk - Rooms 201 & 208; 215-204-8466, http://www.temple.edu/class

College can be demanding whether you are first-year or an upper-class student. The CLASS offers a wide range of services to help students succeed at Temple and beyond. The tutors are waiting to work with you and walk-in sessions are available all day. Just be sure to have your questions ready to go. Furthermore, coaches are here to help you develop your learning and study skills for any and every course you are enrolled in.

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Temple University – CHEM 1027 – Spring 19 – Thomas

The cost is $34 for access for one semester or $51 for two semesters, if purchased directly from Sapling. As an alternative to purchasing a Sapling license directly from the website, students may use Prepaid Access Cards which can be purchased from the bookstore. ISBN: 9781319080266 (one semester) or 9781319078461 (two semesters).

Students should have a Scientific Calculator that includes exponential and log functions. Note that the possession, use and sharing of graphing and programmable calculators and cell phones, is strictly prohibited when taking quizzes and exams.

For the Final Exam, students are encouraged to purchase the General Chemistry Study Guide from the American Chemical Society (ACS) at: http://shopping.na1.netsuite.com/s.nl/c.3773982/it.A/id.1717/f

Copies of this guide are on reserve in the Paley Library.

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Learning to Learn

Department of Chemistry
Temple University

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CHEM 1027 Course Objectives
Applications of Chemistry (1027) is a foundations course. The concepts and principles covered in this class will prepare the students for General Chemistry I (1031)

At the completion of the course, students will be able to:

• Apply dimensional analysis to solve problems.

• Understand the mole concept and apply moles in calculations relating quantities of substances to each other in reactions.

• Understand gas law and use apply them to solve problems.

• Explain the relationship between heat, work, internal energy, and enthalpy changes to solve problems involving thermochemical concepts.

• Explain the concept of quantization as it applies to modern atomic theory.

• Employ different bonding theories to determine chemical connections between atoms and determine the three-dimensional shape of a substance

Allan E. Thomas, PhD
Associate Professor,
Temple University
Department of Chemistry
<table>
<thead>
<tr>
<th>Week #</th>
<th>Start Date</th>
<th>Topic</th>
<th>Assigned Chapters in Publication</th>
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<tbody>
<tr>
<td>1</td>
<td>1/13</td>
<td>Course Overview/Syllabus/ Quantum Numbers, Electrochemistry Study Packet 7</td>
<td>Chapter 12</td>
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<td>Dr. Martin Luther King, Jr. Day (no classes held)</td>
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<td>2</td>
<td>1/20</td>
<td>Formula Writing/Naming Compounds Study Packet 1, Atom Introduction</td>
<td>Chapter 6</td>
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<td>Measurement/Problem Solving Study Packet 2</td>
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<td>3</td>
<td>1/27</td>
<td>Matter Study Packet 3</td>
<td>Chapter 2</td>
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**Quiz # 1 (Recitation)**

Monday, January 27  
Last day to drop a course without a record of the class appearing on the transcript

| 4     | 2/03       | Atoms and Elements | Chapter 4 |
|       |            | Exam # 1 (Quantum Numbers, electronic configuration, Naming compounds/writing formulas, scientific notation, metric conversions, temperature conversions, dimension analysis) | |
| **Friday 2/07** | | *****All exams are in lecture hall***** | |
| 5     | 2/10       | Molecules and Compounds | Chapter 7 |

**Monday 2/17**  
Undergraduate Midterm progress ratings begin

| 6     | 2/17       | Chemical Composition | |
| **Friday 2/21** | | Exam # 2 (To Be Announced; TBA) | |
| 7     | 2/24       | Chemical Reactions | Chapter 8 |
|       |           | Quantities in Chemical Reactions | Chapter 9 |
| 9     | 3/09       | Gas Laws Study Packet 5 | Chapter 10 |
| 8     | 3/02-3/08  | Spring Break (no classes held) | |

**Monday 3/09**  
Undergraduate midterm progress ratings end 3/09

**Wednesday, March 16**  
Last day to withdraw from courses

| 10    | 3/16       | Energy Thermochemistry Study Packet 6 | Chapter 11 |
|       |           | Quiz # 3 (Recitation) | |
| 11    | 3/23       | Electrons in Atoms Study Packet 7 | Chapter 12 |
|       |           | Trends in the Period Table | Chapter 13 |
| **Friday 3/27** | | Exam # 3 (TBA) | |
| 12    | 4/06       | Chemical Bonding (Covalent Bonding) | Chapter 14 |
|       |           | Quiz # 4 (Recitation) | |
| 14    | 4/13       | Chemical Bonding (VSEPR Theory) | Chapter 15 |
|       |           | Quiz # 5 (Recitation) | |
| 15    | 4/20       | Review for Final Cumulative Exam | |
| 16    | 4/27       | Last day of lecture | |
|       | 4/38-29    | Study Days | |

**Cumulative Final Exam (TBD)**

***Note that it may be necessary to alter the course schedule due to inclement weather or for instructional purposes. It is the student’s responsibility to take note of any announcements. ***
1027/1031 SPRING 2020 CLASS SCHEDULE AND OFFICE HOURS

1027 LECTURE BE 162  
1027R BE 119

1031 BE 164  
1031R M: BE 121  
1031R F: BE 119

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