

# Chemistry – The Study of Matter

## Chemistry C051

Fall 2005

Mondays 6:10-10:00pm

This is an introductory chemistry course designed for non-science majors or those who may wish enter a scientific field in the future but feel that they need a better background before doing so. The course will meet for a total of four hours per week: Mondays from 6:00 to 10:00pm in Beury Hall 166. The format of the class periods will include lecture, demonstrations, discussion, and quizzes. The instructor for the course is Dr. Jayakumar Gilbert, whose office is Beury 230, phone (215) 204-7140; he is best reached by email at [jgil@temple.edu](mailto:jgil@temple.edu) Office hours for Dr. Gilbert are Mondays 1:30-3:00pm Tuesdays & Thursdays 9:00-10:00am, although he will be happy to help you with problems at other times if he is not already busy with another student.

**Text and tools:** The text for this course is *Chemistry for Changing Times*, by John W. Hill and Doris K Kolb, Tenth Edition, Pearson Prentice Hall, Upper Saddle River, New Jersey, 2004. There will be additional handouts covering special topics; these will be distributed in class. Lecture slides used in class will be posted on **Blackboard**, but the lectures will not be recorded (unless, of course, you chose to do so yourself.) You will need a notebook for recording lecture notes and the data collected during the lecture demonstrations. Most students find a hand calculator to be helpful. Although this does not need to be a highly sophisticated “scientific” calculator, it should be one, which has the ability to deal with exponential (sometimes called “Scientific”) notation and logarithms.

**No absence/No lateness/No early departure:** Chemistry is a discipline which requires, not surprisingly, discipline. Therefore, you will be expected to attend all classes, arrive on time, and not leave until the class is over. See Dr. Gilbert if you encounter an emergency; you may be asked for documentation to support your claim. Attendance will be taken at the beginning of every class by means of a short **quiz** (*closed book, notes, and mouth*), based on material discussed previously in the course. If you arrive late, you will miss the quiz (there will be no make-up), and may be marked absent for the day. Two or more absences will result in a recommendation that you drop the course. Early departures will be dealt with on an individual basis.

**Quizzes, Exams, and Grades:** Each of the daily quizzes will be worth 5 points, the first and second exams will each be worth 125 points, and the final exam will be worth 200 points. The quizzes will generally be based on the most recent material covered; the exams will be based upon all material from the beginning of the course up through (and including) the material discussed one week prior to the day of the exam. Letter grades will not be assigned for individual quizzes and exams, but a letter grade for the course will be assigned at the end of the term based upon the total of all homework, quiz, and exam scores. The letter grades will be dependent upon how well each student’s score compares to the scores of the other students in the class. (In other words, there will be a curve.)

**Privacy Concerns:** In order to protect your privacy, and at the same time allow us to publicly post results of exams and quizzes you will be identified in this course by a six-digit number. This will comprise the last six digits of the ID number assigned to you by the University. Students at Temple prior to this past summer should note that all old ID numbers have been changed; you will need to memorize a new number. If you do not know what this number is in your case, see Dr. Gilbert.

**Homework:** You can never be comfortable with the concepts of a discipline unless you can deal with questions and problems easily. There is no way to do this but to practice. It is, of course, essential that you do your own work, and do not depend upon others for the answers. However, we recognize that students often work together, and in fact, may actually profit from such collaboration. In order to encourage you to actually do the end of chapter questions and problems in the text, we have set up five written homework sets. They will be due on the dates listed in the attached calendar; no late work will be accepted. Your papers should be neat and clearly printed or written; papers that are difficult to read will not receive credit. **Homework 1** will be worth a maximum of 15 points; **Homework 2**, 10 points; **Homework 3**, 15 points; **Homework 4**, 10 points; and **Homework 5**, 20 points.

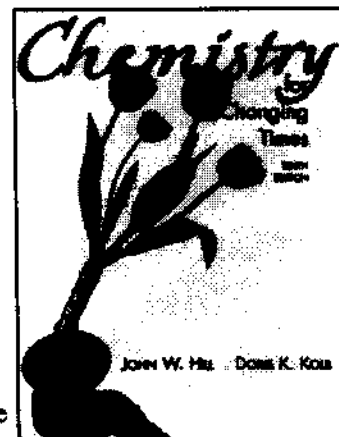
Hmwk 1: *Chapter 1*: 2, 8, 10, 12, 22, 24, 34, 36, 38, 40, 42, 44, 50, 52, 54, 56, 58, 60, 62, 64, 68, 70, 72, 74

Hmwk 2: *Chapter 2*: 7, 10, 18, 22, 24, 26, 28, 34, 36, 38, 40, 42, 44

Hmwk 3: *Chapter 3*: 4, 10, 11, 16, 18, 23, 24, 28, 30, 32, 34, 36, 42, 44, 50, 52, 54, 56, 58, 60, 62, 64, 68, 70, 76, 80

Hmwk 4: *Chapter 4*: 2, 6, 8, 10, 12, 14, 16, 18, 26, 36, 38, 42, 44, 46, 48, 54, 60, 66

Hmwk 5: *Chapter 5*: 2, 4, 5, 6, 8, 10, 12, 14, 16, 20, 22, 24, 26, 32, 34, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 62, 64, 66, 68, 72, 74, 76, 78, 80



# Chemistry C051 - Fall 2005

This calendar is tentative; changes may be made if the progress of the course requires. Topics in lecture will sometimes be presented in a different order than they appear in the text.

## Mondays

<b>Aug 29</b> Chapter 1 Scientific laws & theories; physical properties	Chapter 1 Classification of matter; heat and temperature
<b>Sept 12</b> Chapter 1 Critical thinking; coming to grips with reality	Chapter 2 Homework 1 due The atom: development of the concept
<b>Sept 19</b> Chapter 2 Homework 1 due Relating chemistry to the concept of atoms	Chapter 3 Atoms – their complicated nature
<b>Sept 26</b> Chapter 3 Developing theories which explain atomic behavior	<b>Sept 28</b> <i>First Exam</i>
<b>Oct 3</b> Chapter 3 Electron configurations and the Periodic Table	Homework 2 due The nature of atomic nuclei. Isotopes: stable and unstable
<b>Oct 10</b> Chapter 4 Unstable atoms: radioactivity and the nucleus	Chapter 4 Half lives
<b>Oct 17</b> Chapter 4 Nuclear energy	Chapter 5 Homework 3 due Electrons as dots; ionic bonds
<b>Oct 24</b> Chapter 5 Covalent bonds	Chapter 5 “Stable” electron configurations; Lewis structures
<b>Oct 31</b> Chapter 5 Molecular shapes; the VSEPR method	<b>Nov 2</b> <i>Second Exam</i>
<b>Nov 7</b> Chapter 5 Intermolecular forces	Chapter 5 Homework 4 due Solutions
<b>Nov 14</b> Chapter 6 Balancing chemical equations	Chapter 6 Volume and the “mole”
<b>Nov 21</b> Chapter 6 Mass relationships	
<b>Nov 28</b> Chapter 6 Moles as measures in chemical equations	Chapter 6 Homework 5 due The behavior of gases
<b>Dec 5</b> ( <i>Last day of classes</i> ) Chapter 6 Solutions and concentration	Chapter 6 Review

## **INCOMPLETES / WITHDRAWALS:**

This course will adhere to the Department's and the University Policy regarding the last date to drop or withdraw from the course. The last date to drop is Monday, September 12<sup>th</sup>.

Withdrawals can occur until a later time. For the university policy please see

[http://policies.temple.edu/getdoc.asp?policy\\_no=02.10.14](http://policies.temple.edu/getdoc.asp?policy_no=02.10.14). For this semester this date will be Monday, 31<sup>st</sup> October. To obtain an "incomplete", the usual incomplete contract must be signed upon completion of 60% of the work. The student's accumulated total to that point should be more than 75% of the possible points. Non-attendance to the lab does not constitute "dropping" the course. Official withdrawals can only be done through the Registrar's office.

**HELP!!!** Make certain you take full advantage of all the academic support services available at Temple - on the Main Campus. These include instructor office hours; the Math and Science Resource Center (MSRC) **relocated from Curtis Hall Room 17, 13th & Montgomery, Main Campus** in addition to Supplemental Instruction sessions. The services provided at the MSRC include one-on-one tutoring, computer lab, weekly group tutorials/supplementary instruction, final exam review sessions, and a resource library. The center is open 6 days a week AND IS FREE. For additional information check <http://www.temple.edu/MSRC>.

**Disability Resources and Services:** Any student who has a need for accommodation based on the impact of a disability should contact their instructor privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215.204.1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

**Problems:** You should first attempt to resolve any problems that you are having with your laboratory or recitation instructor(s). If after speaking with the instructor you have not resolved the issue, you should speak with the course coordinator before speaking to your lecturer. As coordinator he will attempt to mediate, but the ultimate decision is often determined by department policy. **DO NOT** expect your instructor to make new policy. *However, if you are having problems with the professional conduct of your instructor you should contact the course coordinator immediately.*

**Make-ups:** There will be no make-ups of missed recitation quizzes, tests, or final examinations.

**Cheating:** All students are expected to adhere to the highest levels of academic integrity. Any students found cheating (i.e. copying answers to exam, quiz, or homework; submitting experimental data that they did not collect; presenting graphs and calculations; or otherwise taking credit for work that they did not perform) will receive a failing grade in the course. They will also be reported to the Dean's office in the College of Science and Technology.

**Miscellaneous:** 1). Cell phones are to be turned off during lecture and exams. 2). No electronic devices other than a basic "four function" calculator may be used during an exam. 3). During testing situations, you have completed the test when you leave the room. Visit the restroom facilities before sitting for your exams. 4) Photo identification may be required at any test. Be prepared.