

# Chemistry 142-004

## Chemical Principles II

### Spring 2012

**Instructor:** Dr. Cielito "Tammy" D. King      **Lecture:** TR, 8:00-9:15 AM, CON124  
**Office:** Room 405 Conant Science  
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**Office Hours:** M 11-12, T 3-4 pm or by appointment

Email communication is encouraged. Appointments can also be scheduled, but please call or email ahead of time. I *strongly* encourage you to talk to me if you are struggling with the material.

**Text:** "Chemistry: A Molecular Approach" N.J. Tro, Prentice Hall, 2<sup>nd</sup> ed. (2011).

#### Course description, goals and objectives:

**Course Description:** CHEM142 Chemical Principles II (4 credits). This is the second semester of a one-year course in introductory college chemistry designed for students majoring in biology, chemistry, earth science, and physics; three hours of lecture and four hours laboratory weekly. *CHEM141 (or equivalent) with a minimum grade of C- is a prerequisite to CHEM142.* All students are expected to have a background in high school math and algebra, including: fractions, percents, exponents/logarithms, scientific notation, writing and solving algebraic equations, plotting and reading graphs, and general problem solving methods.

The *primary goal* of this course is to provide the student with a solid foundation in the basic facts and concepts of chemistry. This will be accomplished through the following *objectives* in the lecture and laboratory:

- 1) The course should build a solid footing of factual knowledge and fundamental principles upon which the theoretical models of chemistry can be constructed.
- 2) The course will help the student develop skills in rational thinking, problem solving, and decision making.
- 3) In the laboratory portion of the course students will develop the skills used by professionals in the field to gain new knowledge in chemistry.
- 4) The student should gain an appreciation of the importance of chemistry in society and in our everyday life.
- 5) Students will experience the benefits of working together in a group, cooperatively solving problems and learning new material.

**Attendance:** *Your attendance in each class period is mandatory and is included in the grading system* (see below). In addition, you are expected to arrive in class ready to work by 8:00 AM. If you miss class due to illness, participation in official college activities, personal emergencies, or religious holidays, you are responsible for obtaining lecture notes and missed assignments. *Class attendance will be taken on a regular basis starting at 8:05 AM.* Points will be subtracted from your final grade after you have missed *more than 2 classes*. The number of points subtracted will be proportional to the number of absences. However, if you miss more than 5 lectures, you will be asked to withdraw from the course.

Habitual tardiness will not be tolerated. For each time that three tardiness have accumulated, one absence will be counted. Some of the information provided in class, but not necessarily all, will also be available on the website. *Laboratory attendance is mandatory.*

**Grading:** Course grades will be evaluated based on the following:

Exams (3 one-hour and 1 final)	50 %
Homework and Recitation Worksheet	20 %
Class participation and attendance	10 %
Laboratory	<u>20%</u>
<i>Total</i>	100 %

Your course grade will be assigned at the end of the semester, based *roughly* on the following scale: A's (90+), B's (80-89), C's (70-79), D's (60-69), F (<60). Each exam will be assigned a numerical raw score that will not be curved. There is no reason not to cooperate with other students in the learning process, as the success of other students in the class does not diminish your own work (i.e., everyone can get an "A"!).

"+ / -" grades will be used to help differentiate borderline scores. Class participation is strongly encouraged as it is one of the criteria for grading, together with attendance (discussed above). If the class average is significantly below 75%, minor adjustments to the grading scale will be made. In *no instance* will the scale be increased if the class average is above 75%.

**Exams:** Make up exams will generally **not** be given. If you have a conflict with a scheduled exam, you *must* contact me *well* in advance. Remedies for an excused absence will be handled on a case-by-case basis. Excused absences include those for medical reasons (obtain a note from physician), family emergency (obtain note from the Dean) or participation in an official College sanctioned activity (obtain note from the sponsor/director). If for any reason you miss an exam, you must contact me immediately if not sooner. While exams may not be moved to earlier dates, there is the possibility that an exam could be postponed to a later date.

**Final Exam:** The final exam time is listed below. The final exam will be cumulative

**TR 8:00 AM class                      Tuesday, May 8                      8:00 – 10:00 AM**

**Homework:** Throughout the semester individual homework will be assigned to supplement the lecture materials. Some homework will be assigned at the end of a class period and will be due the next class period. Others will have a due date that may be a week to 10 days in advance. To receive full credit, *you must show all work* that was done to arrive at the answer. Students may work together on the problem sets but each student must turn in their own assignment. ***Direct copying of solutions is viewed as a violation of Academic Honesty.*** Students are also not allowed to refer to solution manuals, previous year's keys or assignments (violations will be considered a violation of the honor code). It is highly recommended that you begin working on the homework questions when you receive them. Late homework will accrue *at least a 20 % penalty per meeting late.* Once a homework has been graded and returned, late ones will not be accepted; *no exceptions.* They must be turned in at the beginning of the class period on the due date.

**Academic Integrity:** From the College Handbook: “*At Bridgewater, academic honesty is expected of all students; plagiarism and cheating are not condoned and are subject to academic penalty, which may result in a failure for the course in which the violation took place. A record of the violation is kept and may result in suspension or dismissal from the college*”. Academic **dishonesty** in CHEM 142 may include cheating on exams, plagiarism, copying lab reports, problem assignments, or projects, removal of items from the course binders or bulletin board and may result in dismissal from the course with an F grade.

**Online resources:** Some information about the class will be posted online, such as homework, lecture notes, exam review guides and answer keys. It is your responsibility to check information posted in my website on a regular basis. Again, the URL for my website is <http://webhost.bridgew.edu/c2king/>

**Recitation/Lab and Room:** Recitation and pre-lab discussions are held in CON489 for both Thursday and Friday lab sections. Recitation starts the week of January 23 while labs begin a week later. In order to receive a passing grade in the course, you must pass the laboratory. *Laboratory attendance is mandatory.* There are no make-up laboratories. **Missing three laboratory periods will result in a failure for the laboratory and hence the entire course.** Prior to each laboratory period, you must read the experiment description in the manual and any assigned chapters in the text. Additional details concerning the laboratory can be found in the laboratory syllabus and on the Laboratory Webpage. You will be expected to visit the webpage often for updates and download specific experiments.

There is a 50 min. recitation period at the beginning of each laboratory, which will be used to supplement the lecture by going over review problems in the text. In this recitation period you will work in groups to discuss: 1) the study skills expected of students taking introductory chemistry, and 2) problems and concepts related to the course lecture material. Recitation worksheets based on problems and concepts related to the lecture material will be assigned by group approximately every meeting and will be collected (one per group) at the end of the recitation period. Your group grade for the worksheet will be added to your individual homework grade. See grading system above.

## CHEM142-004 Tentative Course Outline and Exam Schedule – Spring 2012

The following is a list of topics to be covered this semester. Not all chapters or topics will be covered to the same degree. The list shows the approximate order that they will be discussed in lecture and laboratory

Ch. 12: Solutions and Colligative Properties

Ch. 13: Chemical Kinetics (Reaction Rates and Mechanisms)

\*\*\*\*\* **Exam 1 – Tuesday, Feb. 21** \*\*\*\*\*

Ch. 14: Chemical Equilibria

Ch. 15: Acid and Bases

\*\*\*\*\* **Exam 2 – Tuesday, Mar. 27**\*\*\*\*\*

Ch. 16: Aqueous Ionic Equilibria

Ch. 17: Free Energy and Thermodynamics

\*\*\*\*\* **Exam 3 – Thursday, Apr. 19** \*\*\*\*\*

Continue Ch. 17

Ch. 18: Electrochemistry (time permitting)

\*\*\*\*\* **Final Exam – Tuesday, May 8, 8-10 AM** \*\*\*\*\*

### ***Other important dates:***

Jan. 25 (W): Last day to ADD/DROP courses

Feb. 20 (M): Presidents' Day holiday

Feb. 22 (W): Monday schedule of classes

March 3-11 SPRING BREAK

April 5 (R): Last day to withdraw from courses

April 16 (M); Patriots' Day holiday

April 30 (M): Classes end

May 2-8: Final Exams