CHEM-111 INFORMATION SHEET (Sections 020D - 025D)
Fall, 2009

Lectures: Every Monday, Wednesday and Friday, 9:05-9:55A.M., Brown Laboratory 101, Dr. John Burmeister

Discussion Sections: Every Friday, as follows:

Section	Instructor	Meeting Day/Time/Place	Instructor's Office	Instructor's Telephone #/E-mail
020D	Kaitlin Papson	F 12:20 - 1:10PM QDH 004	LDL 124	831-1197 kpapson@udel.edu
021D	Kaitlin Papson	F 1:25 - 2:15PM QDH 004	LDL 124	831-1197 kpapson@udel.edu
022D	Kaitlin Papson	F 2:30 - 3:20PM QDH 004	LDL 124	831-1197 kpapson@udel.edu
023D	Mike Dao	F 12:20-1:10PM QDH 074	LDL 210	831-4518 mdao@udel.edu
024D	Mike Dao	F 1:25 - 2:15PM QDH 074	LDL 210	831-4518 mdao@udel.edu
025D	Mike Dao	F 2:30 - 3:20PM QDH 074	LDL 210	831-4518 mdao@udel.edu

Help Session:
A weekly help session (day, time, and place to be announced) will be supervised by each of the discussion section instructors. Each of the two UG CHEM-111 Teacher's Assistants will also hold weekly help sessions [Timothy Gilpatrick (BS/BIOC/12), tgilpat@udel.edu, Charles Polotti (BS/CHEM/11), cpolotti@udel.edu.

Texts:
Chemistry and Chemical Reactivity (7th Ed.), by Kotz, Treichel, and Townsend [UD BA/85] (ISBN: 978-0-495-38703-9).
Study Guide for CCR (7th Ed.), by Townsend [UDBA85] and Moran (optional)
Student Solutions Manual for CCR (7th ed.), by Banks; (ISBN: 978-0-495-38707-7)
CHEM-111 Personalized System of Instruction (2009 ed.), by Burmeister. Additional general chemistry texts, each by a different author, have been placed on reserve in the Reserved Book Room of Morris Library for your use, should you need/desire an alternative to **CCR** - see attached list.

Reading Assignments and Lecture Notes:

Background reading assignments (in *KTT*) and detailed lecture notes will be found in the eleven **CHEM-111 PSI** modules.

Problem Assignments:

Problem assignments (drawn from **KTT**, and special problem sets in the **CHEM-111 PSI**) will be found in the **CHEM-111 PSI**. Detailed answers to the Exercises in **KTT** are provided in Appendix N. Brief answers to the blue-numbered Study Questions in **KTT** are provided in Appendix O. Detailed answers to the blue numbered Study Questions in **KTT** are shown in the **Student Solutions Manual**.

Quizzes:

Short (ca. 20 min.) quizzes will be given during the discussion section periods every week that an "hour" examination is ***not*** scheduled. Coverage will be announced on a week-to-week basis.

"Hour" Examinations:

Exam I - **Wednesday, September 30, 5:00-7:00 p.m., WLF 100.** Material covered between September 2 and September 25, inclusive. Review session will be held on September 28, during the lecture period.

Exam II - **Wednesday, November 4, 5:00-7:00 p.m., WLF 100.** Material covered between September 30 and October 30, inclusive. Review session will be held on November 2, during the lecture period.

Exam III - **Wednesday, December 9, 5:00-7:00 p.m., WLF 100.** Material covered between November 4 and December 4, inclusive. Review session will be held on December 7, during the lecture period.

A four year file of past exams, with detailed answers, is included in the **CHEM-111 PSI**. The questions in these exams provide an **excellent** means for preparing for the current exams, as well as for the quizzes.

Final Examination:

Date, time and place to be announced (Final Exam period: December 11 through December 18). The exam will cover all of the material dealt with in CHEM-111.

Lecture and Quiz Schedule [CHEM-111 PSI Guide module numbers in square brackets]:

Week 1 (2 lectures): Course Overview, Tools of the Trade (Sig. Figs., Exponential Notation, Logs, Units, Temperature Conversions), The Mole Concept, Formulas (Empirical and True) [Module I]

Week 2 (2 lectures): The Gaseous State [Module II] (Quiz I)

Week 3 (3 lectures): Real Gas Behavior, The Solid State [Modules II and III] (Quiz II)

Week 4 (3 lectures): Nomenclature, Stoichiometry (including Hess's Law) [Modules III and IV] (Quiz III)

Week 5 (2 lectures): Concentration Calculations (including Titrations) [one lecture period devoted to Exam I review][[Module V]

Week 6: (3 lectures): Colligative Properties, The Periodic Table, Oxidation Numbers, Balancing Redox Reactions [Modules III, V, and VI] (Quiz IV)

Week 7: (2 lectures): Nature of the Atom (Classic Experiments, the Bohr Model), Dual Nature of Light and Matter [Module VII]

Week 8: (3 lectures): The Schrodinger Approach, Orbitals, Electronic Configurations [Modules VII and VIII] (Quiz V)

Week 9: (3 lectures): Electronic Configuration of Ions, Atomic Structure and Periodic Properties, Ionic vs. Covalent Bonding [Modules VIII and IX] (Quiz VI)

Week 10 (2 lectures): Electronegativity, Lewis Structures, Oxidation Numbers (revisited), Formal Charges [one lecture period devoted to Exam II review] [Module IX]

Week 11 (3 lectures): VSEPR Theory, Bond and Molecular Polarity [Module IX] (Quiz VII)

Week 12 (3 lectures): Valence Bond Theory (including Hybridization) [Module X] (Quiz VIII)

Week 13 (2 lectures): Molecular Orbital Theory [Module X]

Week 14 (3 lectures): Symmetry in Chemistry (Point Groups, Polarity, Optical Activity) - all of this is BONUS material [Module XI] (Quiz IX)

Week 15 (0 lectures): [one lecture period devoted to Exam III review, one lecture period devoted to Final Exam review]

Please note that all aqueous equilibria calculations (weak acids, weak bases, buffers, solubility products) are covered in the co-requisite CHEM-115/120 courses, which include all of the lab work. The freshman CHEM-111/112/115/120 sequence for our CHEM and BIOC majors totals 12 credits, instead of the customary 8.

Absences from Quizzes and Exams:
Unexcused absences will count as zeroes. Make-up quizzes and exams will be required for **excused absences**, i.e., those for which an acceptable **written** excuse is provided, e.g., illness, death in the family, job conflicts, jury duty.

Grading Policy:

Average of **all** quizzes	20%	
Exam I	20%	
Exam II	20%	of final grade
Exam III	20%	
Final Exam	20%	

CHEM-111 course grades will be determined as follows:

Course Grade	Required Performance Level Overall Average
A	85 and above
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	64-69
C	56-63
C-	50-55
D+	47-49
D	43-46
D-	40-42
F	39 and below

Course Evaluation:
Your evaluation of your CHEM-111 experience (instructor, TAs and course) will be executed on-line during a two-week period at the end of the fall semester. You will be given detailed instructions in due course.

Burmy Award:
A **CRC Handbook of Chemistry and Physics** will be given to the student having the highest overall average for CHEM-111/112.

Model Kit:
You will find that a molecular model kit is a very valuable accessory in CHEM-111. You will be permitted to use these model kits (excluding all associated written material)

during all relevant quizzes and exams. Make sure that your molecular model kit is designed for **general chemistry, NOT** organic chemistry.

Calculator:

You will find a non-programmable electronic calculator to be a necessity in CHEM-111.

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Appointments: call Linda Staib
Brown Lab, Rm. 102, 831-2465
Email: lstaib@udel.edu

Texts on Reserve for CHEM-111/112
Reserve Room
Morris Library

Baird, ***Environmental Chemistry,*** Freeman (1995)
Brady and Senese, ***Chemistry: Matter and Its Changes,*** 4th Ed., Wiley (2004)
Brown, LeMay, and Bursten, ***Chemistry: The Central Science,*** 10th Ed., Prentice-Hall (2006)
Averill and Eldridge, ***Chemistry: Principles, Patterns and Applications*** (vol. 1), Pearson/Benjamin Cummings (2006)
Chang, ***Chemistry,*** 7th Ed., McGraw-Hill (2002)
Ebbing and Gammon, **General Chemistry** (9th Ed.), Houghton Mifflin (2009)

Gilbert, Kirss, and Davies, ***Chemistry: The Science in Context,*** Norton (2004)
Fine, Beall, and Stuehr, ***Chemistry for Scientists and Engineers,*** Brooks/Cole, (2000)
Hill, Petrucci, McCreary and Perry, ***General Chemistry,*** 4th Ed., Prentice Hall (2005)
Keiter, Mosher, and Scott, **Chemistry: the Practical Science**, Houghton Mifflin (2008)
Liska, **Drugs and the Human Body, with Implications for Society**, 4th Ed., Macmillan (1994)

* Mahan and Myers, ***University Chemistry,*** 4th Ed., Benjamin/Cummings (1987)
McMurry and Fay, ***General Chemistry: Atoms First,*** Prentice-Hall (2010)
* Munowitz, ***Principles of Chemistry,*** Norton (2000)
Silberberg, ***Principles of General Chemistry,*** McGraw Hill (2007)

Spencer, Bodner, and Rickard, ***Chemistry: Structure and Dynamics,*** 2nd Ed., Wiley (2003)
Tro, **Chemistry: A Molecular Approach**, Pearson/Prentice Hall (2008)
Whitten, Davis, Peck, and Stanley, ***General Chemistry,*** 7th Ed., Thomson Brooks/Cole (2004)

* Zumdahl, ***Chemical Principles,*** 6th Ed., Houghton Mifflin (2009)

* Honors-level text