CHEMISTRY 121 – Lecture Syllabus – FALL 2006

Time (Days)	Lecturer	Office	Phone	e-mail
8 AM (MWF)	Dr. E. Delbridge	360 Abbott	777-2495	edelbridge@chem.und.edu
10 AM (MWF)	Dr. L. Pazdernik			lpazdernik@chem.und.edu
2 PM (MWF)	Dr. T.A. Ballintine	224C Abbott	777-2241	tballintine@chem.und.edu
5:30 PM (TR)	Dr. T.A. Ballintine	224C Abbott	777-2241	tballintine@chem.und.edu

ALL Chemistry 121L (lab): Dr. E. Delbridge, 360 Abbott, 777-2495, edelbridge@chem.und.edu

GENERAL EDUCATION – REQUIREMENTS & GOALS

The combination of Chem. 121 and 121 L fulfills UND's General Education Requirement of a 4-hour science course with lab. This combination also provides 4 of a required 12 hours of Math, Science, and Technology toward graduation. These courses will (i) challenge you to use the scientific method to think critically about facts and thereby make informed choices, (ii) help you to appreciate how scientific conclusions are reached, and (iii) help you to understand connections between ideas or events in the sciences and society.

REQUIRED TEXTS AND MATERIALS

1) *CHEMISTRY; 4th ed.* by McMurry and Fay, Prentice Hall, 2004.

Bring your textbook to ALL Lectures!

2) A CALCULATOR (capable of exponential notation) will be required for assignments and exams.

OPTIONAL MATERIALS

3) Old Exams and additional materials may be available from **Blackboard Learning System™** websites associated with each class section. Ask your lecturer about the materials available.

EXAMS

Four (4) mid-semester exams will be given **on selected Monday evenings** from 7:00 – 8:30 PM. Dates and content for these exams are given in the schedule on the reverse side.

A 3" x 5" note card of information may be used during examinations. Both sides of the card may be used but it must be handwritten and no magnification may be used.

NO BOOKBAGS, CELL PHONES, PDA's ARE TO BE BROUGHT INTO THE EXAMS. IF FOUND ON YOUR POSSESSION YOUR EXAM WILL BE CONFISCATED AND YOU WILL RECEIVE ZERO FOR THE EXAM

GRADING POLICY

Letter grades (A,B, etc.) will be awarded ONLY on the basis of the total number of accumulated points.

4 Exams @ 100 pts each	400 pts
1 final exam	150 pts
other graded assignments	50 pts
total points used to derive grade	600 pts

NOTE - While attendance in lecture is at your discretion, **Chem 121L attendance is required and attendance will be taken.** Results and reports will not be accepted for labs that you did not attend. Should you miss an exam or lab contact your course instructor immediately on your return to campus.

Letter Grades will be assigned APPROXIMATELY as follows:

Percentages required for a letter grade may be lowered but will not be raised above these values.

90% or above	A
80 to 89%	B
70 to 79%	C
60 to 69%	D
less than 60%	F

DISABILITY STATEMENT

If you need accommodations in this course because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible. Contact information is at the top of the page.

CHEMISTRY 121 – Suggested End-of-Chapter Exercises – FALL 2006

From McMurry & Fay, 4th ed.

CHAP. 1	Elements and the Periodic Table	28, 30, 32 - 35, 40 - 45
	Units and Significant Figures	46, 48, 49, 51 - 54, 57, 58, 60, 62, 64, 66, 70
	Unit Conversions	76
	Temperature	82
	Density	86, 88
	General Problems	92, 94, 96
CHAP. 2	Atomic Theory	34, 36, 38
	Elements and Atoms	42, 44 - 48, 50 - 54, 56
	Compounds and Mixtures	60, 62 - 68, 70
	Acids and Bases	74 - 77
	Naming Compounds	78 - 87
	General Problems	90, 91, 99, 100, 103, 104
CHAP. 3	Balancing Equations	38, 39, 40, 41
	Molecular Masses and Moles	42 -50, 52
	Stoichiometry Calculations	58, 60, 62, 63
	Limiting Reactants and Yield	68, 70, 76
	Molarity, Dilution and Titration	78 - 80, 82, 86, 88, 90
	Formulas and Elemental Analysis	92, 94, 95, 96, 98
	General Problems	104, 108, 109, 120
CHAP. 4	Aqueous Reactions and Equations	30 - 33, 36 - 44
	Neutralization Reactions	50, 51, 52, 54
	Redox Reactions	56 - 64, 66
	Balancing Redox Reactions	70 - 76, 78, 80
	General Problems	90, 92, 93, 100
CHAP. 8	Energy and Enthalpy	43, 48, 52, 53
	Calorimetry and Heat Capacity	57, 58
	Hess's Law and Heats of Formation	28, 62, 63, 66, 69
	General Problems	97, 98, 108
CHAP. 5	Electromagnetic Radiation	30, 32, 34, 36, 44
	Orbitals and Quantum Numbers	50, 52, 54, 56 - 59
	Electron Configurations	65, 66, 68, 70 - 72, 78, 79
	Atomic Radii and Periodic Properties	82, 83, 84, 85
	General Problems	91, 92, 98
CHAP. 6	Ions, Ionization and Electron Affinity	36 - 44, 46, 48, 56
	Lattice Energy and Ionic Bonds	58, 59, 60, 64
	Main Group Chemistry	72, 76, 80, 82, 85
	General Problems	98, 110
CHAP. 7	Electronegativity and Covalent Bonds	38, 40, 42, 43
	Electron-dot Structures	46 - 50, 54, 58
	The VSEPR Model	32, 66, 67, 68, 70, 71, 72, 73, 76
	Hybrid Orbitals	35, 82, 84 - 86, 88
	Bond Dissociation Energies (Ch. 8)	8.74, 8.76, 8.102
	General Problems	36, 96, 97, 114
CHAP. 9	Gases and Gas Pressure	36
	The Gas Laws	46 - 48, 50
	Gas Stoichiometry	56, 58, 62, 64, 66
	Dalton's Law and Mole Fraction	72, 74, 76
	Kinetic-Molecular Theory	80, 84, 86, 88, 90
	General Problems	104
CHAP. 10	Intermolecular Forces	30, 32, 33, 35, 36, 38
	Vapor Pressure and Phase Changes	48, 50
	Phase Diagrams	82, 83
CHAP. 23	Functional Groups and Isomers	40, 44
	Alkenes, Alkynes amd Aromatics	46, 48, 54, 56, 62, 66, 68, 72, 74
	Polymers	102, 104, 106

CHEMISTRY 121 – Tentative MWF Lecture & Exam Schedule – **FALL 2006**

Wed	Aug 23	Introduction to course; course policy; Ch. 1 – Matter & Measurements
Fri	25	Ch. 1
Mon	28	Ch. 1
Wed	30	Ch. 1
Fri	Sept 1	Ch. 2 – Atoms, Molecules, and Ions
Mon	4	Labor Day Holiday — NO CLASS
Wed	6	Ch. 2
Fri	8	Ch. 2
Mon	11	Ch. 2
Wed	13	Ch. 2
Fri	15	Ch. 3 – Formulas, Equations, and Moles
Mon	18	Ch. 3
		7:00 PM, EXAM #1: Chapters 1 & 2
Wed	20	Ch. 3
Fri	22	Ch. 3
Mon	25	Ch. 3
Wed	27	Ch. 4 – Reactions in Aqueous Solution
Fri	29	Ch. 4
Mon	Oct 2	Ch. 4
Wed	4	Ch. 4
Fri	6	Ch. 8 – Thermochemistry
Mon	9	Ch. 8
		7:00 PM, EXAM #2: Chapters 3 & 4
Wed	11	Ch. 8
Fri	13	Ch. 8
Mon	16	Ch. 5 – Periodicity and Atomic Structure
Wed	18	Ch. 5
Fri	20	Ch. 5
Mon	23	Ch. 5
Wed	25	Ch. 6 – Ionic bonds
Fri	27	Ch. 6
Mon	30	Ch. 6
Wed	Nov 1	Ch. 7 – Covalent Bonds and Molecular Structure
Fri	3	Ch. 7
Mon	6	Ch. 7
		7:00 PM, EXAM #3: Chapters 8, 5, 6
Wed	8	Ch. 7
Fri	10	Veteran's Day Holiday — NO CLASS
Mon	13	Ch. 7
Wed	15	Ch. 7
Fri	17	Ch. 9 – Gases
Mon	20	Ch. 9
Wed	22	Ch. 10 – Liquid and Solids
Fri	24	Thanksgiving Holiday — NO CLASS
Mon	27	Ch. 10
Wed	29	Ch. 10
Fri	Dec 1	Ch. 10
Mon	4	Ch. 23 – Organic Chemistry
		7:00 PM, EXAM #4: Chapters 7, 9, 10
Wed	6	Ch. 23
Fri	8	READING AND REVIEW DAY
Mon	Dec 11	**10:15 AM, FINAL EXAM: Chapters 1-10, 23 comprehensive**

CHEMISTRY 121 – Tentative TR Lecture & Exam Schedule – **FALL 2006**

Tue	Aug 22	Introduction to course; course policy; Ch. 1 – Matter & Measurements
Thr	24	Ch. 1
Tue	29	Ch. 1
Thr	31	Ch. 2 – Atoms, Molecules, and Ions
Tue	Sept 5	Ch. 2
Thr	7	Ch. 2
Tue	12	Ch. 2
Thr	14	Ch. 3 – Formulas, Equations, and Moles
Mon	18	**7:00 PM, EXAM #1: Chapters 1 & 2**
Tue	19	Ch. 3
Thr	21	Ch. 3
Tue	26	Ch. 4 – Reactions in Aqueous Solution
Thr	28	Ch. 4
Tue	Oct 3	Ch. 4
Thr	5	Ch. 8 – Thermochemistry
Mon	9	**7:00 PM, EXAM #2: Chapters 3 & 4**
Tue	10	Ch. 8
Thr	12	Ch. 8
Tue	17	Ch. 5 – Periodicity and Atomic Structure
Thr	19	Ch. 5
Tue	24	Ch. 6 – Ionic bonds
Thr	26	Ch. 6
Tue	31	Ch. 7 – Covalent Bonds and Molecular Structure
Thr	Nov 2	Ch. 7
Mon	6	**7:00 PM, EXAM #3: Chapters 8, 5, 6**
Tue	7	Ch. 7
Thr	9	Ch. 7
Tue	14	Ch. 9 – Gases
Thr	16	Ch. 9
Tue	21	Ch. 10 – Liquid and Solids
Thr	23	Thanksgiving Holiday — NO CLASS
Tue	28	Ch. 10
Thr	30	Ch. 10
Mon	Dec 4	**7:00 PM, EXAM #4: Chapters 7, 9, 10**
Tue	5	Ch. 23 – Organic Chemistry
Thr	7	Ch. 23
Fri	8	READING AND REVIEW DAY
Mon	Dec 11	**10:15 AM, FINAL EXAM: Chapters 1-10, 23 comprehensive**