

1. **DOCUMENT TITLE:** COURSE SYLLABUS
2. **COURSE NUMBER/DESIGNATION/SECTION:** CHM 467.01
3. **COURSE TITLE:** Advanced Inorganic Chemistry
4. **CREDIT HOURS:** 3
5. **SEMESTER, YEAR:** Spring 2008
6. **LOCATION OF CLASS MEETING:** CFS 102
7. **MEETING TIMES:** 9:30-10:50 Tuesday, Thursday
8. **OFFICE LOCATION:** CFS 304
9. **OFFICE HOURS:** Monday - Friday 11:00-11:50
10. **OFFICE PHONE and E-MAIL ADDRESS:** 294-1525; CHM_PAL@SHSU.EDU,

11. COURSE DESCRIPTION

Properties of atoms and ions, bonding theory and structure, acid-base theory, reactions of inorganic compounds, nonaqueous solvents, and coordination chemistry are studied. Emphasis is on the underlying theoretical concepts involved. Junior standing in Chemistry. Prerequisite: CHM 458. Spring even years.

12. COURSE OBJECTIVES

Chemistry 467 is a culmination of chemistry courses taken over the first two or three years of an undergraduate curriculum thus the material covered in each course, to include, periodic properties of the elements, chemical reactivity of various classes of compounds, mechanisms of organic reactions, chemical thermodynamics, acid-base theories and bonding theories constitute required material in this course. The student will build on the success of an undergraduate program by mastering the principles and concepts associated with inorganic chemistry. The student will continue to develop his/her skills related to solving abstract problems in chemistry and applying chemical principles to enhance the understanding of the abstract world of atoms and molecules.

13. TEXTBOOK(S) AND ALL REQUIRED SUPPLIES

- (1) **Inorganic Chemistry: Principles of Structure and Reactivity**, Huheey, et. al.
- (2) **Chemistry: The Central Science** by Brown, Lemay, and Bursten, 9th or 10th Ed.

14. COURSE REQUIREMENTS

- **Exams**

What type of questions should we expect on the tests? The exams will include short answer questions such as vocabulary or chemical reactivity as well as discussion questions which lend themselves to detailed essay responses. Each test will begin with a vocabulary section, a nomenclature section, and a chemical reaction section. Following these will be a short answer section which will require simple recall or association and then a long answer section in which the student will need to develop a comprehensive discussion, applying various principles or concepts to a difficult chemical problem.

- **Grading Plan**

How is my grade to be determined? Each exam will be graded by the instructor and this subjective evaluation will be converted to a numerical scale in which the A range is 4.0-4.99; the B range is 3.0-3.9; the C range is 2.0-2.9, the D range is 1.0-1.9 and the F range is <1. Because the format of the course is a discussion/seminar course the instructor will also evaluate the student's performance during each section with an assessment of how well the student appears to grasp the material and how much of a contribution the student makes to the groups' discussions.

The sum of the scaled grades can be correlated to the course grade:

Attendance	=	5%
Mid-term examinations (3)	=	56.25%
Fourth and final exam	=	18.75%
Homework	=	10%
<u>Class discussion/participation</u>	=	<u>10%</u>
Course Total	=	100%

Course Grade Weighted Average = 5% Att'n + 20% Class + 75% Exams

- **Assignments**

Notice that there are no points specifically associated with homework or in-class exercises. The homework provides the necessary practice for the exams. These problems and questions will be discussed during class. The in-class exercises provide an active learning cycle as well as immediate feedback indicating contemporary preparedness. These exercises will be collected and an appropriate sample evaluated. These data will contribute to the class participation and thus will be represented in the course grade.

All students are required to refer to their **Blackboard** for course documents and assignments.

- **Attendance**

- *The Faculty Handbook provides that regular and punctual class attendance is expected of each student.*
- Each student will attend class. The university allows a student to miss one week of class but holds the student responsible for the work done or assigned during the missed class(es). Class attendance is a binary function. Any excuse judged as a "good excuse" by the student will be accepted by the professor.
- The attendance grade will be "A" or "4.5" for three or fewer missed classes and will be "F" or "0.0" for six or more absences.
- Homework is due at the beginning of the designated period. Multiple page assignments **MUST** be stapled in the upper left hand corner. No late homework is accepted. (This is an organizational dictate or an entropy driven stipulation...just look at my desk!) No comprehensive make-up will be given but the comprehensive fraction of the final will count twice iff a student has passing grades on other exams.

- **On-line Syllabus Resource:**

Please refer to the following link by Academic Affairs that addresses (1) students with disabilities, (2) observance of religious holy days, (3) visitors in the classroom, and (4) classroom decorum:

<http://www.shsu.edu/mailler/coursesyllabus.pdf>

Tentative Schedule- Spring 2008

Week	Tuesday Lecture		Thursday Lecture	
1	Class Review: Reactions		Electronic Structure & Simple Bonding	
2	VSEPR - VBT - MOT		VSEPR - VBT - MOT	
3	Acid-Base: BLABT, Lewis ABT; Kf(cpx)	22	Acid-Base: BLABT, Lewis ABT; Kf(cpx)	44
4	Ch 7: Solid State (-)	66	Ch 7: Solid State (87)	88
5	Exam-I	110	Ch 8: Acid-Base(-)	110
6	Ch 8: Acid-Base(128)	132	Ch 11: Coordination Chem.I, Bonding(-)	154
7	Ch 11: Coordination Chem.I, Bonding(-)	176	Ch 11: Coordination Chem.I, Bonding(-)	198
8	Ch 11: Coord. Chem.I, Bonding(213)	220	Exam-II	220
9	Ch 12: Coordination Chem.II, Structure	242	Ch 12: Coordination Chem.II, Structure	264
10	Ch 12: Coord. Chem.II, Structure(278)	286	Ch 13: Coordination Chem.III, Reactions	308
11	Ch 13: Coordination Chem.III, Reactions	330	Ch 13: Coord. Chem.III, Reactions(318)	352
12	Exam-III	374	Ch 15: Organometallic Chm.(-)	374
13	Ch 15: Organometallic Chm.(-)	396	Ch 15: Organometallic Chm.(-)	418
14	Ch 15: Organometallic Chm.(433)	440	Ch 19: Inorganic-Biological Systems(-)	462
15	Ch 19: Inorganic-Biological Systems(-)	484	Ch 19: Inorganic-Biological Systems(504)	506

