CHEM 654—ADVANCED INORGANIC CHEMISTRY II: STRUCTURE AND BONDING

Class Time: Monday 6:30 – 9:30 pm, 116 Brown Lab
Instructor: Svilen Bobev
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Phone: × 8720 / Lab: × 8848
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Office Hours: Anytime really, but official office hours will be Mon and Wed, 1 to 2 pm

Text: 'Molecular Symmetry and Group Theory' R.L. Carter (**ISBN 0-471-14955-1**). The text will probably be loosely followed, there will be some aspects in which I will not follow this text at all and will provide handouts. Any comprehensive inorganic textbook (advanced level) would be suitable for background reading.

Grading: 15% Unannounced quizzes and participation in class
5% Homework and independent study (will not be assigned weekly)
30% 1 (one) in-class exam – November 2 – see below
50% Final (comprehensive) – TBA

Learning goals: http://www.chem.udel.edu/assessment-learning-goals-and-outcomes

Schedule of classes(SUBJECT TO CHANGE)*

September 14	FIRST CLASS, introduction, recap of some basic concepts, isoelectronic principle, VSEPR
September 21	Molecular shape, and symmetry elements and operations
September 28	Symmetry point groups, use of character tables
October 5	Group representations, projection operator, SALC's
October 12	Bonding in diatomic and linear/bent triatomic molecules
October 19	Walsh-type correlation diagrams, polyatomic molecules
October 26	Polyatomic molecules – frontier orbitals approach
November 2	MIDTERM EXAM
November 9	Polyatomic molecules – fragment formalism
November 16	Molecular vibrations, selection rules
November 30	Electronic spectroscopy, vibronic coupling
December 7	LAST CLASS, symmetry and bonding in extended structures
December ??	TBD (IN-CLASS FINAL)

PROTOCOL

• Class attendance is expected.
• Only in the case of 'excused absences' as defined by the University handbook, there will be an allowed 'make-up' exam or quiz.
• During quizzes and exams, the University policy of no cheating and honorable work will be applied.

*This syllabus and course outline is subject to change at any time at my discretion