CHEM 411/511 Advanced Inorganic Chemistry-CrsRvs-2017-01-20

- The workflow icon is no longer available. Please click on the Page Status after the orange circle icon near the page title. *

Form Information

The page you originally access is the global template version. To access the template document that progresses through the workflow, please complete the following steps:

First Step: **ONLY** change the text in the [brackets] so it looks like this: **CRIM 101 Intro to Criminology-CrsRvs-2015-08-10**

- ***If DUAL LISTED list BOTH courses in the page title***

Second Step: Click **"SAVE"** on bottom right

- ***DO NOT TYPE ANYTHING INTO THE FIRST PAGE OTHER THAN THE TEXT IN BRACKETS***
- ***Please be sure to remove the Brackets while renaming the page***

Third Step: Make sure the word ***DRAFT*** is in yellow at the top of the proposal

Fourth Step: Click on "**EDIT CONTENTS**" (not EDIT) and start completing the template. When exiting or when done, click **"SAVE"** on bottom right

When ready to submit click on the workflow icon and hit approve. It will then move to the chair as the next step in the workflow.

**Indicates a required field*

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Proposing Department/Unit*	Chemistry	**Contact Phone***	7-2361

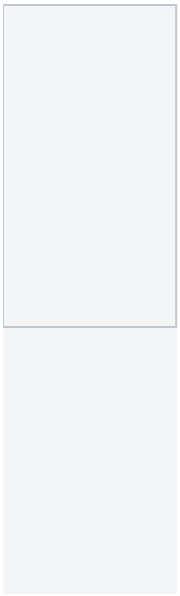
Course Level*	graduate-level, undergraduate-level

Course Revisions

(Check all that apply;fill out categories below as specified; i.e. if only changing a course title, only complete Category A)

Category A:	Category B:
	add dual level ** Teacher Education: Please complete the Teacher Education section of this form (below)* ** Liberal Studies: Please complete the Liberal Studies section of this form (below)* ** Distance Education: Please complete the Distance Education section of this form (below)*

Rationale for Proposed Changes (All Categories)	
(A) Why is the course being revised /deleted:*	We are revising this course so that Graduate students in the Professional Science Masters (PSM) program can take advantage of this advanced level course. At the graduate level, this dual listed course will act as introduction to the Inorganic lab course.



(I) Repeatable Course	If YES, please complete the following: Number of Credits that May be Repeated: Maximum Number of Credits Allowed to be Repeated:
Proposed Repeatable Course	If YES, please complete the following: Number of Credits that May be Repeated: Maximum Number of Credits Allowed to be Repeated:
(J) Number of Credits	Class Hours: Lab Hours: Credits:
Proposed Number of Credits	Class Hours:Lab Hours:Credits:
(K) Current Course (Student Learning) Outcomes	
Proposed Course (Student Learning) Outcomes	
(L) Dual Listed Courses Only:	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.

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Dual Listed Courses Only: **List Proposed Learning** **Outcomes for the** **Higher-Level Course**	Upon successful completion of this course, the student will be able to: 1. Assign point groups and use character tables 2. Explain some of the properties of molecules that are symmetry-driven using Group Theory 3. Construct molecular orbital diagrams for diatomic and polyatomic molecules/ions using symmetry 4. Describe the reactions of coordination complexes including the implications of ligand substitution kinetics and the classification of reaction types (associative and dissociative) and relate them to the mechanism of these reactions. 5. Evaluate the thermodynamic considerations of the chelate effect. 6. Plan a synthetic route to a particular square planar complex using the trans-directing series of ligands 7. Predict the stereochemical outcome of ligand substitution in octahedral complexes. 8. Correlate the modification of ligands in reactions of coordination complexes to the reactions in organotransition metal chemistry. 9. Describe the chemistry of metal carbonyls, metal-olefin complexes and the metallocenes 10. Use the principles of oxidative addition and reductive elimination to describe examples of homogeneous and heterogeneous catalysts 11. Describe cluster compounds and their importance 12. Prepare of a variety of inorganic compounds. 13. Characterize a variety of inorganic compounds by spectroscopic methods. In addition, the Graduate students will be able to: 1. Independently design and develop a research plan related to synthesis characterization or studies of inorganic compounds 2. Perform experiments in the laboratory to validate proposed research plan 3. Summarize research findings
(M) Brief Course Outline *(It is acceptable to copy* *from old syllabus)*	*As outlined by the federal definition of a "credit hour", the following should be a consideration* *regarding student work - For every one hour of classroom or direct faculty instruction,* *there should be a minimum of two hours of out of class student work.* 1. Review of Atomic Structure. 2. Spectra and orbitals, ionization energy, electron affinity, shielding and effective nuclear charge. 3. Covalent Molecular Substances 4. Review of Lewis structures and Valence Shell Electron Pair Repulsion Theory, Deviations from Ideal Geometries, Valence Bond 5. 6. 7. 8. 9. 10.

Brief Course Outline For each outcome, describe how the outcome will be (o outcome)T.83	1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.

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For each outcome in the course, describe **how the outcome will be achieved using** **Distance Education technologies.**	
How will the instructor-student and **student-student interaction take place?** **(if applicable)**	
How will student achievement be evaluated?	
How will academic honesty for tests **ar 0v3.63 1mignbe es55.88 533.85 Tm (for tests)Tj ET BT /i7 1 173.63 569.85 Tm ( )Tj ET BT /F1 7.5 Tf 1 0 0 1 55.4eadress**	

