CHEM30009 Inorganic Chemistry III

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	This subject is not offered in 2014. Lectures, tutorials and practical work
Time Commitment:	Contact Hours: 24 one-hour lectures throughout the semester; 28 hours of practical classes on average 7 hours per week. Total 52 hours. Total Time Commitment: Estimated total time commitment of 120 hours
Prerequisites:	**This subject is available for exchange students only**, who are required to have successfully completed an approved inorganic chemistry subject at 2 nd year university level, which includes laboratory work. Students are required to contact the subject coordinator prior to enrolment.
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	Credit cannot be gained for this subject and any of:

Subject	Study Period Commencement:	Credit Points:
CHEM30016 Reactivity and Mechanism	Semester 1	12.50
CHEM30015 Advanced Practical Chemistry	Semester 1	12.50

An additional non-allowed subject combination normally exists between this subject and CHEM30017 Specialised Topics in Chemistry B. However enrolment in CHEM30017 Specialised Topics in Chemistry B (with a restricted choice of topics) and this subject, may be approved by the subject coordinator.

Core Participation Requirements:	It is University policy to take all reasonable steps to minimise the impact of disability upon academic study and reasonable steps will be made to enhance a student's participation in the University's programs. This subject requires all students to actively and safely participate in laboratory activities. Students who feel their disability may impact upon their participation are encouraged to discuss this with the subject coordinator and the Disability Liaison Unit. http://www.services.unimelb.edu.au/disability/
Contact:	Director of Third Year Studies **Email: third-year-director@chemistry.unimelb.edu.au (mailto:third-year-director@chemistry.unimelb.edu.au)**
Subject Overview:	The subject includes lecture and practical components. This lecture component is based on the Inorganic Chemistry lectures from the CHEM30016 course (12 lectures) and those from an approved module relating to Inorganic Chemistry chosen from the topics offered in CHEM30017 (12 lectures). A limited selection of the following topics will be offered, from which students choose one module: • Organometallic Chemistry and Catalysis, • Metal chemistry: Principles and applications • Complex Materials and Biophysical Chemistry, • Supramolecular and Structural Inorganic Chemistry, • Metal Ions in Biology and Medicine
Learning Outcomes:	Upon completion of this subject, students should comprehend the concept of coordination for bonding and metal-ion reactivity, cluster molecules, organometallic species and metal-ion containing biomolecules. They should gain knowledge about the chemical processes occurring at the metal ion centre in catalytic processes ranging from synthetic and technological applications to biologically important enzymatic processes (for example photosynthesis, nitrogen fixation and fuel cells); understand the reasons for the different types of structures

	observed for such molecules and have developed a knowledge of the procedures for determination of the structures via spectroscopic and related techniques. In addition, students should have an appreciation of the electronic structure of metal complexes; the structure of the solid state; and apply concepts developed in relation to small molecule chemistry to catalysis in biological and non-biological systems. The practical component of this subject will consist of a number of experiments involving the synthesis and/or chemical and/or instrumental investigations of important classes of main group and transition metal coordination and organometallic compounds, chosen from practical experiments offered within the CHEM30015 course.
Assessment:	Practical component: Ongoing assessment in the form of up to 5 reports due during semester 1 (30%). Lecture components: To address the diversity of material taught in the various modules of this subject, there will be several options for assessment. The assessment for the specific module will be announced in the first lecture. Option 1: One one-hour end of semester exam (80%) and one to two assignments conducted during the module (20%). Option 2: Several assignments (written and/or oral) conducted during the module (100%). Satisfactory completion of both theory and practical work is necessary to pass the subject.
Prescribed Texts:	C E Housecroft and A G Sharpe, Inorganic Chemistry, 3rd Ed. Pearson Prentice-Hall, 2008.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	This subject will provide the student with the opportunity to establish and develop the following generic skills: • an advanced understanding of the changing knowledge base, problem-solving and critical thinking skills; • the ability to comprehend complex concepts and effectively communicate this understanding to the scientific community and in a manner accessible to the wider community; • the ability to connect and apply the learnt concepts to a broad range of scientific problems beyond the scope of this subject; • the ability to think critically and independently, and a capacity to manage competing demands on time, including self-directed work; • the ability to problem-solving, and the ability to use conceptual models to rationalise observations; • an ability to evaluate the research and professional literature; • a capacity to articulate knowledge and understanding in written presentations
Related Majors/Minors/ Specialisations:	Science credit subjects* for pre-2008 BSc, BASc and combined degree science courses