CHEM30009 Inorganic Chemistry IIIA

Credit Points:	12.50
Level:	3 (Undergraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: Year Long, Parkville - Taught on campus. Lectures, tutorials and practical work
Time Commitment:	Contact Hours: Three 1-hour lectures per week for 4 weeks (semester 1); one 1-hour tutorial per week for 4 weeks (semester 1); Three 1-hour lectures per week for 4 weeks and up to four 1-hour tutorials (semester 2); 7-hours of practical class per week for 4 weeks (semester 1). Total 60 hours. Total Time Commitment: Estimated total time commitment of 120 hours
Prerequisites:	One of **Subject** / **Study Period Commencement:** / **Credit Points:** CHEM20025 Physical and Inorganic Chemistry 2 — Year Long — 12.50 CHEM20023 Inorganic Chemistry 2 — Year Long — 12.50 CHEM20024 Organic and Inorganic Chemistry 2 — Year Long — 12.50 # 610-240 Inorganic and Bio-inorganic Chemistry A (prior to 2009) Or both of # 610-241 Inorganic and Bio-inorganic Chemistry B (prior to 2009) # 610-245 Inorganic Chemistry Practical (prior to 2009)
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:** CHEM30010 Inorganic Chemistry IIIB — Year Long — 12.50 CHEM30011 Inorganic Chemistry Practical III — April — 6.25 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 610-354 Specialised Topics in Chemistry A. However enrolment in 610-354 Specialised Topics in Chemistry A (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.
Coordinator:	Assoc Prof Uta Wille
Contact:	Director of Third Year Studies

	Email: third-year-director@chemistry.unimelb.edu.au (mailto:third-year-director@chemistry.unimelb.edu.au)
Subject Overview:	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 course 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. This subject will provide the student with the opportunity to establish/develop the following generic skills: an advanced understanding of the changing knowledge base, problem-solving and critical thinking skills, an ability to evaluate the research and professional literature, a capacity to apply concepts developed in one area to a different context, and the ability to use conceptual models to rationalise observations, a capacity to articulate knowledge and understanding in written presentations, a capacity to manage competing demands on time, including self-directed work.
Objectives:	Refer to Overview.
Assessment:	Ongoing assessment of practical work in the form of six short (ca 1-2 hours) and one long (ca. 3-4 hours) reports due during semester 1 (30%), two to three short tests each of duration of less than 1 hour conducted on-line during the semester using the learning management system (LMS) for a total of 10 %, one 1-hour exam at the end of semester 1 and one 45-min exam at the end of semester 2 (60% for both written exams). 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 potentially can be taken as a breadth subject component for the following courses: # **Bachelor of Arts (https://handbook.unimelb.edu.au/view/2010/B-ARTS)** # **Bachelor of Commerce (https://handbook.unimelb.edu.au/view/2010/B-COM)** # **Bachelor of Environments (https://handbook.unimelb.edu.au/view/2010/B-ENVS)** # **Bachelor of Music (https://handbook.unimelb.edu.au/view/2010/B-MUS)** You should visit **learn more about breadth subjects (http://breadth.unimelb.edu.au/breadth/info/index.html)** and read the breadth requirements for your degree, and should discuss your choice with your student adviser, before deciding on your subjects.
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: 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; the ability to problem-solving, and the ability to use conceptual models to rationalise observations.
Notes:	This subject is available for science credit to students enrolled in the BSc (pre-2008 degree), BASc or a combined BSc course.
Related Majors/Minors/ Specialisations:	Chemistry