COURSE OUTLINE

CHM210 Inorganic Chemistry

Course Coordinator: David McKay (dmckay@usc.edu.au) **School:** School of Science, Technology and Engineering

2021 | Semester 2

USC Sunshine Coast USC Moreton Bay	ON CAMPUS	Most of your course is on campus but you may be able to do some components of this course online.

Please go to the USC website for up to date information on the teaching sessions and campuses where this course is usually offered.

1. What is this course about?

1.1. Description

Inorganic chemistry explores the diversity of the periodic table and the applications of its elements from power generation, to new materials for lighting and metal-based drugs. In this course you will learn about the chemistry of the Transition Metals and selected Main Group Elements, and how they influence everyday life. You will investigate redox reactions theoretically by balancing equations and practically by constructing electrochemical cells.

1.2. How will this course be delivered?

ACTIVITY	HOURS	BEGINNING WEEK	FREQUENCY
ON CAMPUS			
Tutorial/Workshop 1	1hr	Week 1	13 times
Laboratory 1	3hrs	Refer to Format	5 times
Lecture – Online lecture	2hrs	Week 1	13 times

1.3. Course Topics

1. Redox chemistry
2. Valence bond theory
3. Molecular orbital theory
4. Coordinate bonding
5. Ligands and nomenclature
6. Geometry and Isomerism
7. Crystal field theory
8. Nuclear chemistry
9. Representative elements
10. Solubility

2. What level is this course?

200 Level (Developing)

Building on and expanding the scope of introductory knowledge and skills, developing breadth or depth and applying knowledge and skills in a new context. May require pre-requisites where discipline specific introductory knowledge or skills is necessary. Normally, undertaken in the second or third full-time year of an undergraduate programs.

3. What is the unit value of this course?

12 units

4. How does this course contribute to my learning?

COURSE LEARNING OUTCOMES On successful completion of this course, you should be able to...		GRADUATE QUALITIES Completing these tasks successfully will contribute to you becoming...
1	Analyse inorganic chemistry information.	Creative and critical thinker
2	Demonstrate and apply knowledge of inorganic chemistry.	Empowered
3	Communicate in scientific writing.	Empowered Engaged

5. Am I eligible to enrol in this course?

Refer to the USC Glossary of terms for definitions of “pre-requisites, co-requisites and anti-requisites”.

5.1. Pre-requisites

SCI105

5.2. Co-requisites

Not applicable

5.3. Anti-requisites

CHM212

5.4. Specific assumed prior knowledge and skills (where applicable)

Not applicable

6. How am I going to be assessed?

6.1. Grading Scale

Standard Grading (GRD)

High Distinction (HD), Distinction (DN), Credit (CR), Pass (PS), Fail (FL).

6.2. Details of early feedback on progress

There is a set of questions and answers for each week's lecture, providing feedback for that material. These questions will form the basis of the final exam.
There is a set of on-line questions for each practical, providing feedback on progress. These questions will form the basis of the practical quizzes.

6.3. Assessment tasks

DELIVERY MODE	TASK NO.	ASSESSMENT PRODUCT	INDIVIDUAL OR GROUP	WEIGHTING %	WHAT IS THE DURATION / LENGTH?	WHEN SHOULD I SUBMIT?	WHERE SHOULD I SUBMIT IT?
All	1	Written Piece	Individual	10%	Up to 500 words with diagrams and references	Week 4	Online Assignment Submission with plagiarism check
All	2	Quiz/zes	Individual	20%	10 minutes each: 50 min total	Throughout teaching period (refer to Format)	Online Test (Quiz)
All	3	Report	Individual	30%	1500-2000 words	Week 13	Online Assignment Submission with plagiarism check
All	4	Examination - Centrally Scheduled	Individual	40%	2 hours (1500 words)	Exam Period	Exam Venue

All - Assessment Task 1: Literature Assignment

GOAL:	Analyse a paper from the primary literature dealing with the preparation of a transition metal complex and effectively communicate your findings.
PRODUCT:	Written Piece
FORMAT:	Title, structure of compound, its preparation and use.
CRITERIA:	

No.		Learning Outcome assessed
1	An analysis of a paper from the primary literature dealing with the preparation of a transition metal complex.	1 3

All - Assessment Task 2: Practical Quizzes

GOAL:	Demonstrate knowledge of the theory underpinning laboratory chemistry.
PRODUCT:	Quiz/zes
FORMAT:	Students will complete 5 quizzes (10 min. each) on-line based on the theory underpinning practical work.
CRITERIA:	

No.		Learning Outcome assessed
1	On-line multiple-choice quizzes about the theory underpinning each practical.	1 2

All - Assessment Task 3: Practical Report

GOAL:	Produce data arising from participation in the laboratory and write a report showing effective understanding, analysis and communication.
PRODUCT:	Report
FORMAT:	The report will include: Title, abstract, introduction, methods, results, discussion, conclusion, references- with focus on discussion of results.

CRITERIA:	No.		Learning Outcome assessed
	1	Produce data arising from participation in the laboratory and write a report showing effective understanding, analysis and communication.	1 2 3

All - Assessment Task 4: Final exam

GOAL:	Demonstrate and apply knowledge of inorganic chemistry.
PRODUCT:	Examination - Centrally Scheduled
FORMAT:	Short and extended answer, problem solving, calculations based on material from lectures, tutorials and laboratory activities.

CRITERIA:	No.		Learning Outcome assessed
	1	A final exam containing questions requiring written answers.	1 2

7. Directed study hours

A 12-unit course will have total of 150 learning hours which will include directed study hours (including online if required), self-directed learning and completion of assessable tasks. Directed study hours may vary by location. Student workload is calculated at 12.5 learning hours per one unit.

8. What resources do I need to undertake this course?

Please note: Course information, including specific information of recommended readings, learning activities, resources, weekly readings, etc. are available on the course Blackboard site– Please log in as soon as possible.

8.1. Prescribed text(s) or course reader

Please note that you need to have regular access to the resource(s) listed below. Resources may be required or recommended.

REQUIRED?	AUTHOR	YEAR	TITLE	PUBLISHER
Required	Flowers et al.	2017	Chemistry	OpenStax, Chemistry. OpenStax CNX. 23 Nov 2017 http://cnx.org/contents/85abf193-2bd2-4908-8563-90b8a7ac8df6@9.524.
Recommended	Blackman, Bottle, Schmid, Mocerino, Wille	2019	Chemistry,	Wiley

8.2. Specific requirements

Laboratory coat, safety glasses, closed in footwear.

9. How are risks managed in this course?

Risk assessments have been performed for all laboratory classes and a moderate level of health and safety risk exists. Moderate risks are those associated with laboratory work such as working with chemicals and hazardous substances. You will be required to undertake laboratory induction training and it is also your responsibility to review course material, search online, discuss with lecturers and peers and understand the health and safety risks associated with your specific course of study and to familiarise yourself with the University's general health and safety principles by reviewing the online induction training for students, and following the instructions of the University staff

10. What administrative information is relevant to this course?

10.1. Assessment: Academic Integrity

Academic integrity is the ethical standard of university participation. It ensures that students graduate as a result of proving they are competent in their discipline. This is integral in maintaining the value of academic qualifications. Each industry has expectations and standards of the skills and knowledge within that discipline and these are reflected in assessment.

Academic integrity means that you do not engage in any activity that is considered to be academic fraud; including plagiarism, collusion or outsourcing any part of any assessment item to any other person. You are expected to be honest and ethical by completing all work yourself and indicating in your work which ideas and information were developed by you and which were taken from others. You cannot provide your assessment work to others. You are also expected to provide evidence of wide and critical reading, usually by using appropriate academic references.

In order to minimise incidents of academic fraud, this course may require that some of its assessment tasks, when submitted to Blackboard, are electronically checked through SafeAssign. This software allows for text comparisons to be made between your submitted assessment item and all other work that SafeAssign has access to.

10.2. Assessment: Additional Requirements

Eligibility for Supplementary Assessment

Your eligibility for supplementary assessment in a course is dependent of the following conditions applying:

The final mark is in the percentage range 47% to 49.4%
The course is graded using the Standard Grading scale
You have not failed an assessment task in the course due to academic misconduct

10.3. Assessment: Submission penalties

Late submission of assessment tasks may be penalised at the following maximum rate:
- 5% (of the assessment task's identified value) per day for the first two days from the date identified as the due date for the assessment task.
- 10% (of the assessment task's identified value) for the third day - 20% (of the assessment task's identified value) for the fourth day and subsequent days up to and including seven days from the date identified as the due date for the assessment task.
- A result of zero is awarded for an assessment task submitted after seven days from the date identified as the due date for the assessment task. Weekdays and weekends are included in the calculation of days late. To request an extension you must contact your course coordinator to negotiate an outcome.

10.4. Study help

For help with course-specific advice, for example what information to include in your assessment, you should first contact your tutor, then your course coordinator, if needed.

If you require additional assistance, the Learning Advisers are trained professionals who are ready to help you develop a wide range of academic skills. Visit the Learning Advisers web page for more information, or contact Student Central for further assistance: +61 7 5430 2890 or studentcentral@usc.edu.au.

10.5. Wellbeing Services

Student Wellbeing provide free and confidential counselling on a wide range of personal, academic, social and psychological matters, to foster positive mental health and wellbeing for your academic success.

To book a confidential appointment go to Student Hub, email studentwellbeing@usc.edu.au or call 07 5430 1226.

10.6. AccessAbility Services

Ability Advisers ensure equal access to all aspects of university life. If your studies are affected by a disability, learning disorder mental health issue, , injury or illness, or you are a primary carer for someone with a disability or who is considered frail and aged, AccessAbility Services can provide access to appropriate reasonable adjustments and practical advice about the support and facilities available to you throughout the University.

To book a confidential appointment go to Student Hub, email AccessAbility@usc.edu.au or call 07 5430 2890.

10.7. Links to relevant University policy and procedures

For more information on Academic Learning & Teaching categories including:

- Assessment: Courses and Coursework Programs
- Review of Assessment and Final Grades
- Supplementary Assessment
- Administration of Central Examinations
- Deferred Examinations
- Student Academic Misconduct
- Students with a Disability

Visit the USC website: http://www.usc.edu.au/explore/policies-and-procedures#academic-learning-and-teaching

10.8. General Enquiries

In person:

- **USC Sunshine Coast** - Student Central, Ground Floor, Building C, 90 Sippy Downs Drive, Sippy Downs
- **USC Moreton Bay** - Service Centre, Ground Floor, Foundation Building, Gympie Road, Petrie
- **USC SouthBank** - Student Central, Building A4 (SW1), 52 Merivale Street, South Brisbane
- **USC Gympie** - Student Central, 71 Cartwright Road, Gympie
- **USC Fraser Coast** - Student Central, Student Central, Building A, 161 Old Maryborough Rd, Hervey Bay
- **USC Caboolture** - Student Central, Level 1 Building J, Cnr Manley and Tallon Street, Caboolture

Tel: +61 7 5430 2890

Email: studentcentral@usc.edu.au