



The University of Southern Queensland

## Course specification

The current and official versions of the course specifications are available on the web at  
<<http://www.usq.edu.au/coursespecification/current>>.  
Please consult the web for updates that may occur during the year.

### Description: Chemistry 2

Subject	Cat-nbr	Class	Term	Mode	Units	Campus
CHE	2120	90999	2, 2009	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS002
<b>Student contribution band:</b>	6
<b>ASCED code:</b>	010599

### STAFFING

Examiner: Mark Lynch  
Moderator: Bernadette McCabe

### REQUISITES

Pre-requisite: CHE1110

### RATIONALE

This course provides students with the basic principles and skills of physical, inorganic and organic chemistry as they relate to the study of Biology and Chemistry. The course builds upon the material covered in Chemistry 1 (CHE1110) and is essential for further studies in Biology.

### SYNOPSIS

This course addresses the important basic principles and concepts of physical, inorganic and organic chemistry. The course covers basic thermodynamics, reaction kinetics, equilibria, colligative properties, organic functional groups, IUPAC naming, basic stereochemistry, and simple reactions. This course has a compulsory laboratory component. This course involves a compulsory Residential School for external students only.

### OBJECTIVES

On completion of this course students will be able to:

1. apply the basic principles of thermodynamics, reaction rates and colligative properties; (restricted test)
2. describe the chemistry of metallo-organic molecules; (restricted test)
3. apply the basic principles of stereochemistry and chirality in organic chemistry; (restricted exam)
4. demonstrate an understanding of the organisation of organic functional groups; (restricted exam)
5. describe simple organic reactions and functional group interconversions; (restricted exam)

6. utilize appropriate laboratory techniques in basic organic, inorganic and physical chemistry.  
(Laboratory)

## TOPICS

Description	Weighting (%)
1. Physical Chemistry - thermodynamics; reaction Rates/Kinetics; equilibria; colligative properties. Inorganic chemistry - metallo-organic compounds; coordination complexes; oxidation states; naming and stereochemistry.	45.00
2. Organic Chemistry - naming of simple organic compounds; stereochemistry and chirality and their implications; functional groups and their interconversions.	45.00
3. Laboratory Practical classes will give students a practical understanding of the concepts within the lectures. At the conclusion of the practical, students will: - demonstrate an understanding of the need for laboratory safety and safe work habits; show mastery of basic laboratory skills; and have become familiar with the use of some common pieces of laboratory equipment.	10.00

## TEXT and MATERIALS required to be PURCHASED or ACCESSED

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

*Chemistry 2 practical manual*, USQ Publication, Toowoomba.

Blackman, Bottle, Schmid, Mocerino & Wille 2008, *Chemistry 1*, 1st edn, Wiley PLUS, Wiley & Sons,  
(ISBN 9780470818510)

## REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Aylward, G & Findlay, T 2002, *SI chemical data*, 5th edn, John Wiley & Sons, New York.

Ebbing, DD & Gammon, SD 2005, *General chemistry & solution manual*, 8th edn, Houghton Mifflin, Boston, MA, ISBN: 04 708 075 39.

Hughes, KJ 1999, *Study guide for Umland/Bellamas general chemistry*, 3rd edn, Brooks/Cole, Pacific Grove.

Umland, JB & Bellama, JM 1999, *General chemistry*, 3rd edn, Brooks/Cole, Pacific Grove.

Yates, P 1997, *Chemical calculations*, Blackie Academic and Professional, London.

## STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Examinations	3.00
Laboratory or Practical Classes	24.00
Private Study	109.00
Report Writing	30.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg (%)	Due date
1.5HR RESTRICTD TEST TOPIC 1	35.00	35.00	20 Jul 2009 (see note 1)
LABORATORY REPORTS	10.00	10.00	20 Jul 2009 (see note 2)
QUIZZES	20.00	20.00	20 Jul 2009 (see note 3)
1.5HR RESTRICTD EXAM TOPIC 2	35.00	35.00	END S2 (see note 4)

### NOTES

1. Examiner to advise due dates for Online Quizzes, laboratory reports and mid-semester test.
2. Examiner to advise due dates for Online Quizzes, laboratory reports and mid-semester test.
3. Examiner to advise due dates for Online Quizzes, laboratory reports and mid-semester test.
4. Examination dates will be available during the Semester. Please refer to the examination timetable when published.

## IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:  
It is the students' responsibility to attend and participate appropriately in all activities (such as lectures, tutorials, laboratories and practical work) scheduled for them, and to study all material provided to them or required to be accessed by them to maximize their chance of meeting the objectives of the course and to be informed of course-related activities and administration. To maximize their chances of satisfying the objectives of the practical component of the course, students should attend and actively participate in the laboratory sessions in the course.
- 2 Requirements for students to complete each assessment item satisfactorily:  
To complete each of the assessment items satisfactorily, students must obtain at least 50% of the marks available for each assessment item. (Depending upon the requirements in Statement 4 below, students may not have to satisfactorily complete each assessment item to receive a passing grade in this course).
- 3 Penalties for late submission of required work:

If students submit assignments after the due date without (prior) approval of the examiner then a penalty of 5% of the total marks gained by the student for the assignment may apply for each working day late up to ten working days at which time a mark of zero may be recorded.

- 4 Requirements for student to be awarded a passing grade in the course:  
To be assured of receiving a passing grade a student must achieve at least 50% of the total weighted marks available for the course.
- 5 Method used to combine assessment results to attain final grade:  
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
- 6 Examination information:  
Candidates are allowed access only to specific materials during a Restricted Examination. The only materials that candidates may use in the restricted examination for this course are: writing materials (non-electronic and free from material which could give the student an unfair advantage in the examination); calculators which cannot hold textual information (students must indicate on their examination paper the make and model of any calculator(s) they use during the examination).
- 7 Examination period when Deferred/Supplementary examinations will be held:  
Any Deferred or Supplementary examinations for this course will be held during the next examination period.
- 8 University Regulations:  
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

## **ASSESSMENT NOTES**

- 9 In order to attend laboratory classes, students must provide and wear appropriate personal protective equipment. This shall include a laboratory coat, closed in shoes, and safety glasses. Such equipment must be approved by supervising staff. Failure to provide and wear the appropriate safety equipment will result in students being excluded from classes.

## **OTHER REQUIREMENTS**

- 1 It is expected that students in this course have access to a computer with internet capabilities for accessing relevant course materials as they become available. The system used should be able to handle files generated as pdf's, powerpoint or word. Additional useful freeware software that may be beneficial yet not a formal requirement may be discussed during class.
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