



The University of Southern Queensland

Course specification

Description: Chemistry 2

| Subject | Cat-nbr | Class | Term | Mode | Units | Campus |
|---------|---------|-------|---------|------|-------|-----------|
| CHE | 2120 | 54255 | 2, 2006 | ONC | 1.00 | Toowoomba |

| | |
|-----------------------------------|--------|
| Academic group: | FOSCI |
| Academic org: | FOS002 |
| Student contribution band: | 2 |
| ASCED code: | 010599 |

STAFFING

Examiner: Ray Marshall

Moderator: Tania van den Ancker

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 and Chemistry.

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.

OBJECTIVES

On successful completion of this course students will be able to:

1. apply the basic principles of thermodynamics, reaction rates and colligative properties;
2. describe the chemistry of metallo-organic molecules;
3. apply the basic principles of stereochemistry and chirality in organic chemistry;
4. demonstrate an understanding of the organisation of organic functional groups;
5. describe simple organic reactions and functional group interconversions;
6. utilise appropriate laboratory techniques in basic organic, inorganic and physical chemistry.

TOPICS

| | Description | Weighting (%) |
|----|--|---------------|
| 1. | Organic Chemistry - naming of simple organic compounds; stereochemistry and chirality and their implications; functional groups and their interconversions. | 45.00 |
| 2. | Physical Chemistry - thermodynamics; reaction Rates/Kinetics; equilibria; colligative properties. Inorganic chemistry - metallo-organic compounds; coordination complexes; oxidation states; - naming and stereochemistry. | 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.

McMurry, J 2004, *Organic chemistry*, 6th edn, Brooks/Cole, Pacific Grove.

McMurry, J 2004, *Study guide and solutions manual for organic chemistry*, 6th edn, Brooks/Cole, California.

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 | 4.00 |
| Laboratory or Practical Classes | 24.00 |
| Lectures | 26.00 |
| Private Study | 70.00 |
| Report Writing | 30.00 |
| Tutorials | 13.00 |

ASSESSMENT DETAILS

| Description | Marks out of | Wtg(%) | Due date |
|------------------------------|--------------|--------|-----------------------------|
| 2HR RESTRICTED TEST TOPIC 1 | 45.00 | 45.00 | 19 Jul 2006 (see note 1) |
| LABORATORY REPORTS | 1.00 | 10.00 | 19 Jul 2006 (see note 2) |
| 2 HR RESTRICTED EXAM TOPIC 2 | 45.00 | 45.00 | END S2 (see note 3) |

NOTES

1. Lecturer will advise the date of the 2hr Restricted Test Topic 1 early in the Semester.
2. Lecturer to advise due dates for Laboratory Reports
3. 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 maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration. To maximise 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 the practical component satisfactorily, students must submit all nominated practical reports and obtain a passing grade (mark of 1) overall for the lab component. To complete the examination and test satisfactorily, students must obtain at least 50% of the marks available for the examination and test.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.
- 4 Requirements for student to be awarded a passing grade in the course:

To be assured of receiving a passing grade a student must submit all of the summative assessment items, achieve at least 50% in the examination and test and overall achieve the 1 mark for the laboratory reports.

- 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:
In a Restricted Examination, candidates are allowed access to specific materials during the 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. With the Examiner's approval, candidates may, take an appropriate non- electronic translation dictionary (but not technical dictionaries) into the examination. This will be subject to perusal and, if it is found to contain annotations or markings that could give the candidate an unfair advantage, it may be removed from the candidate's possession until the appropriate disciplinary action is completed.
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Supplementary work for this course must be submitted by the end of week 2 of the following semester. Any Deferred examinations for this course must occur at a time suitable to both the student and the course examiner but no later than the next semester's 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.
- 10 Students who do not perform satisfactorily in an examination, may, at the discretion of the examiner, be granted a supplementary examination. Students will be granted a deferred examination only if they perform satisfactorily in all other assessment items.