School of Chemistry

CHEM104: Foundation Chemistry: Properties of Matter

Subject Outline
Autumn, 2016
On-Campus
Wollongong

Subject Information
Credit Points: 6
Pre-requisite(s): Nil
Co-requisite(s): Nil
Restrictions: Not available to students who have completed NSW HSC Chemistry with a mark of 65% or greater, or equivalent
Contact Hours: 3 x 1 hr Lecture and Tutorial; 1 x 3 hr Practical or 1 x 3 hr Tutorial (fortnight cycle)

Subject Contacts

Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name:</th>
<th>Dr Glennys O'Brien</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Building 18, Room 112</td>
</tr>
<tr>
<td>Telephone:</td>
<td>61 2 4221 3072</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:glennys_obrien@uow.edu.au">glennys_obrien@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times:</td>
<td>Refer to CHEM104 Moodle site for consultation details.</td>
</tr>
</tbody>
</table>

Student Support and Advice
For general enquiries please contact the Student Centre:

Location: 41.152
Telephone: 61 2 4221 3492
Email: smah-students@uow.edu.au
Student Consultation and Communication

University staff receive many emails each day. In order to enable them to respond to your emails appropriately and in a timely fashion, students are asked to observe basic requirements of professional communication:

**Consider what the communication is about**

- Is your question addressed elsewhere (e.g. in the subject outline or, on the eLearning site)?
- Is it something that is better discussed in person or by telephone? This may be the case if your query requires a lengthy response or a dialogue in order to address. If so, see consultation times above and/or schedule an appointment.
- Are you addressing your request to the most appropriate person?

**Specific email subject title to enable easy identification of issue**

- Identify the subject code of the subject you are enquiring about (as staff may be involved in more than one subject) put this in the email subject heading. Add a brief, specific query reference after the subject code where appropriate.

**Professional courtesy**

- Address the staff member appropriately by name (and formal title if you do not yet know them).
- Use full words (avoid ‘text-speak’ abbreviations), correct grammar and correct spelling.
- Be respectful and courteous.
- Allow 3 – 4 working days for a response before following up. If the matter is legitimately urgent, you may wish to try telephoning the staff member (and leaving a voicemail message if necessary) or inquiring at the School Office.
- Please ensure that you include your **full name and student number** and identify your practical class or tutorial group in your email so that staff know who they are communicating with and can follow-up personally where appropriate.
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Section A: General Information

Subject Learning Outcomes
On completion of this subject, students should be able to:

1. Apply chemical language and symbology and basic chemical concepts including quantity calculations, molecular level shape and bonding, material properties, reaction energetics and rate to contexts within their chosen field of science.

2. Perform basic chemical laboratory procedures from written instructions safely and effectively, and record, interpret and communicate results from these chemical procedures.

3. Have gained experience of communicating and working effectively in small groups.

Subject Description
The subject provides an introduction to core chemistry knowledge and skills as required for studies of biology and applied sciences. The subject incorporates explicit development of use of chemistry language, symbols and other representations, and the quantitative (numeracy, mathematical) skills required. The concepts include matter, introduction to atoms, ions and molecules, chemical nomenclature and quantities in chemistry; molecular scale concepts, electrons and the chemical bond, molecular shape, intermolecular forces; matter macroscale, the nature and properties of materials resulting from their molecular level character, with specific biological / polymeric / new materials based examples. Concepts about changing matter follow, considering the energetics and rate of chemical change. The topics are presented in contemporary contexts exploring chemical phenomena and specifically designed for students without senior high school chemistry.

eLearning Space
This subject has materials and activities available via eLearning. To access eLearning you must have a UOW user account name and password, and be enrolled in the subject. eLearning is accessed via SOLS (student online services). Log on to SOLS and then click on the eLearning link in the menu column. For information regarding the eLearning spaces please use the following link:
http://uowblogs.com/moodlelab/files/2013/05/Moodle_StudentGuide-1petpo7.pdf

Lecture, Tutorial, Laboratory Times
All timetable information is subject to variation. Check latest timetabling information on the 'Current Student' webpage on UOW website or log into SOLS to view your personal timetable prior to attending classes.

Timetable information can be accessed from

Key University Dates can be accessed from

Readings, References and Materials
Textbooks
The following text(s) will need to be purchased by students enrolled in this class.

Blackman et al, Chemistry Core concepts. 1st edn, 2016, Wiley.

Prescribed Readings (includes eReadings)
The following texts are prescribed for this subject, but students are not expected to purchase these. They are available to students through the library on the subject’s eLearning site.

Nil
Materials
Laboratory coat Safety glasses
Subject handbook / Laboratory Manual (Hard copy with perforated lift out lab report templates, from UniShop, or pdf version from eLearning)

Recommended Readings
The following references complement the prescribed readings and textbooks:

Essential Skills for Science and Technology Revised Edition. Authors: Zeegers and Deller-Evans


Recent Changes to this Subject
i. Nil

List of Topics Covered
The following are examples of the topics to be covered in this course. This is not an exhaustive list and will be subject to change.

1. Fundamentals for chemical study: chemistry language, symbols and other representations, and the quantitative (numeracy, mathematical) skills; concepts include matter, introduction to atoms, ions and molecules, chemical nomenclature
2. Quantities in chemistry: mass, mole, concentration
3. Molecular scale concepts: electrons and the chemical bond, molecular shape, intermolecular forces
4. Reactions: the energetics and rate of chemical change
5. Matter macroscale: properties of materials resulting from their molecular level character, gases, liquids, solids, mixtures and solutions.
Section B: Assessment

Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Laboratory Practical reports (5) and week 13 lab test</td>
<td>End of practical class</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Workshop Quick Quizzes (6)</td>
<td>At completion of that workshop</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Online assessments (4)</td>
<td>Friday Week 4, 6, 10, 13</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 4</td>
<td>Mid-session test</td>
<td>TBA</td>
<td>10%</td>
</tr>
<tr>
<td>Assessment 5</td>
<td>Final Examination</td>
<td>During exam period</td>
<td>50%</td>
</tr>
<tr>
<td>Assessment 6</td>
<td>SMAH Risk Management Unit</td>
<td>Friday 13.03.2015 (end Week 2)</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total Marks 100%

Details of Assessment Tasks

Assessment tasks will be marked using explicit criteria that will be provided to students prior to submission.

**Assessment 1**
- **Laboratory Practical reports (5) and week 13 lab test**
- **Due date**: End of practical class
- **Weighting**: 20%, being average of best four reports and lab test.
- **Submission**: Submit hardcopy of your report / test to your demonstrator at the end of that Lab class
- **Type of Collaboration**: Individual Assessment
- **Length**: See lab manual, templated reports; week 13 lab test max 4 pages
- **Details**: Marks for any templated lab will be no greater than 12/20 if that prelab is not completed, serial offenders not completing prelabs will be refused entry to the lab class.
- **Style and format**: Templated Report and short answer Qs, short answer Qs for lab test week 13
- **Subject Learning Outcomes**: 1-3

**Assessment 2**
- **Workshop Quick Quizzes (6)**
- **Due date**: At completion of that workshop
- **Weighting**: 10%, being average of best five QQ
- **Submission**: Submit the hardcopy of your Quick Quiz to your tutor/demonstrator in class
- **Type of Collaboration**: Individual Assessment
- **Length**: < 1 page
- **Details**: Short Answer Qs, 10 min mini Quizzes; If Preworkshop not completed, then QQ = 0. serial offenders not completing preworkshops will be refused entry to the workshop.
- **Style and format**: In-class test
- **Subject Learning Outcomes**: 1-3
<table>
<thead>
<tr>
<th>Assessment 3</th>
<th>Online assessments (4)</th>
</tr>
</thead>
</table>
| **Due date** | Assessment 1 Fri week 4  
|              | Assessment 2 Fri week 6  
|              | Assessment 3 Fri week 10  
|              | Assessment 4 Fri week 13  |
| **Weighting** | 10%  |
| **Submission** | Submit an electronic copy of your assessment via upload to eLearning  |
| **Type of Collaboration** | Individual Assessment  |
| **Length** | 10-12 Online questions = 1-2 pages  |
| **Details** | Calculation questions or MCQ  |
| **Style and format** | Online quiz  |
| **Subject Learning Outcomes** | 1-3  |

<table>
<thead>
<tr>
<th>Assessment 4</th>
<th>Mid-session test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>TBA</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>10%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Test papers and answers must be submitted at the conclusion of the test.</td>
</tr>
<tr>
<td><strong>Type of Collaboration</strong></td>
<td>Individual Assessment</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>4-6 pages</td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td>Short answers, 50 mins</td>
</tr>
<tr>
<td><strong>Style and format</strong></td>
<td>In-class test</td>
</tr>
<tr>
<td><strong>Subject Learning Outcomes</strong></td>
<td>1-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment 5</th>
<th>Final Examination</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>During exam period</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>50%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Exam papers and answers must be submitted at the conclusion of the exam.</td>
</tr>
<tr>
<td><strong>Type of Collaboration</strong></td>
<td>Individual Assessment</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>3 hrs</td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td>MCQ</td>
</tr>
<tr>
<td><strong>Style and format</strong></td>
<td>Final exam</td>
</tr>
<tr>
<td><strong>Subject Learning Outcomes</strong></td>
<td>1-3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment 6</th>
<th>SMAH Risk Management Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>Friday 13.03.2015 (end Week 2)</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>0%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Online unit with 3 modules and tests 80% pass mark</td>
</tr>
<tr>
<td><strong>Type of Collaboration</strong></td>
<td>Individual Assessment</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>30 Questions, 2 hrs</td>
</tr>
<tr>
<td><strong>Details</strong></td>
<td>MCQ</td>
</tr>
<tr>
<td><strong>Style and format</strong></td>
<td>Online quiz</td>
</tr>
<tr>
<td><strong>Subject Learning Outcomes</strong></td>
<td>1-3</td>
</tr>
</tbody>
</table>
Minimum Requirements for a Pass in this Subject

To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%.

The minimum performance requirements for this subject are:

- Obtain a grade of 40% on the final examination
- Obtain an average mark of at least 50% in Laboratory Practical Reports and Lab Test
- Pass the SMAH Risk Management Unit
- Meet the minimum participation and attendance requirements set out below

Minimum Student Attendance and Participation

It is expected that students will allocate 12 hours per week to this subject, including any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at practicals and workshops is compulsory and students must attend 100% of classes. Absences will require the submission of an application for Academic Consideration via SOLS and the presentation of suitable documentation, for example a Medical Certificate, to Student Central as soon as practical. For further details about applying for academic consideration visit the Student Central webpage: [http://www.uow.edu.au/student/central/academicconsideration/index.html](http://www.uow.edu.au/student/central/academicconsideration/index.html)

Scaling

Scaling may occur in this subject at the end of session by the Unit Assessment Committee and/or Faculty Assessment Committee (FAC). Marks will only be scaled to ensure fairness/parity of marking across groups of students. Scaling will not affect any individual student’s rank order within their cohort. For more information refer to Assessment Guidelines – Scaling: [http://www.uow.edu.au/about/policy/UOW058609.html](http://www.uow.edu.au/about/policy/UOW058609.html)

Late Submission

Late submission of an assessment task without an approved extension of the deadline is not acceptable. If you are unable to submit an assessment due to extenuating circumstances (e.g. medical grounds or compassionate grounds), you can make an application of academic consideration. Not all circumstances qualify for academic consideration. For further details about applying for academic consideration visit the Student Central webpage: [http://www.uow.edu.au/student/central/academicconsideration/index.html](http://www.uow.edu.au/student/central/academicconsideration/index.html)

Lab report / questions and workshop quick quizzes are submitted at the end of each class. Online quizzes are submitted at the end of the 3-4 week period allocated. Late submissions are not available for these assessments. Any issues arising must be addressed with the subject coordinator as soon as possible.

Supplementary Assessments

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject, and are otherwise identified as meriting an offer of a supplementary assessment. The precise form of supplementary assessment will be determined at the time the offer of a supplementary assessment is made.

Students can log on to SOLS and click on the link titled “Supplementary Assessment” to view any applicable offers or use the following link; [http://www.uow.edu.au/student/exams/suppassess/index.html](http://www.uow.edu.au/student/exams/suppassess/index.html)
System of Referencing Used for Written Work

The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assessment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can be accessed on the Library website at: http://public01.library.uow.edu.au/refcite/style-guides/html/ 

Use of Internet Sources

Students are able to use the Internet to access the most current information on relevant topics and information. Internet sources should only be used after careful critical analysis of the currency of the information, the role and standing of the sponsoring institution, reputation and credentials of the author, the clarity of the information and the extent to which the information can be supported or ratified by other authoritative sources.

Plagiarism

The full policy on Academic Integrity and Plagiarism is found in the Policy Directory on the UOW website.

"The University's Academic Integrity and Plagiarism Policy, Faculty Handbooks and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as ‘resources’), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. This is considered academic misconduct and students place themselves at risk of being expelled from the University."

Submission of Assessments

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt/evidence acknowledging assessment submission. Students will be required to produce this in the event that an assessment task is considered to be lost. Students are also expected to keep a copy of all their submitted assignments in the event that re-submission is required.

Assessment Return

Laboratory reports will be returned to students at the next laboratory class. Moderated workshop QQ will be returned to students at the next workshop class. The Mid-session test will be returned to students at the next lab or workshop class, whichever applies. Online quizzes are assessed automatically on submission, your assessed quiz with correct answers is available immediately. In accordance with University Policy marked assignments will usually only be held for 21 days after the declaration of marks for that assignment.
Section C: General Advice

Students should refer to the Faculty of Science, Medicine and Health website for information on policies, learning and support services and other general advice.

University Policies

Students should be familiar with the following University policies:

a. Code of Practice – Teaching and Assessment  

b. Code of Practice – Research, where relevant  

c. Code of Practice – Honours, where relevant  

d. Student Charter  

e. Code of Practice – Student Professional Experience, where relevant  

f. Academic Integrity and Plagiarism Policy  

g. Student Academic Consideration Policy  

h. Course Progress Policy  

i. Graduate Qualities Policy  

j. Academic Complaints Policy (Coursework and Honours Students)  

k. Policy and Guidelines on Non-Discriminatory Language Practice and Presentation  

l. Workplace Health and Safety, where relevant  

m. Intellectual Property Policy  

n. IP Student Assessment of Intellectual Property Policy, where relevant  

o. Policy on Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects, where relevant  

p. Human Research Ethics Guidelines, where relevant  

q. Animal Research Guidelines, where relevant  
r. Student Conduct Rules and accompanying Procedures or Research Misconduct Policy for research students

Student Support Services and Facilities
Students can access information on student support services and facilities at the following link. This includes information on “Academic Support”, “Starting at University, “Help at University” as well as information and support on “Career’s and Jobs”. http://www.uow.edu.au/student/services/index.html

Student Etiquette
Guidelines on the use of email to contact teaching staff, mobile phone use in class and information on the university guide to eLearning ‘Netiquette’ can be found at http://www.uow.edu.au/student/elearning/netiquette/index.html

Version Control Table

<table>
<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20160310</td>
<td>Dr Glennys O’Brien</td>
<td>Sonia Losinno – ADE Nominee</td>
<td>Final CHEM104 Autumn 2016 outline.</td>
</tr>
</tbody>
</table>