School of Chemistry

CHEM340: Chemistry Laboratory Project

Subject Outline
Summer 2014/2015
On-Campus
Wollongong

Subject Information
Credit Points: 8
Pre-requisite(s): Four 200-level Chemistry subjects. Restricted entry. Admission by application to Head of School of Chemistry
Co-requisite(s): Two 300-level Chemistry subjects
Restrictions: Nil
Contact Hours: 6Hr Practical / Week + Seminars

Subject Contacts
Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name:</th>
<th>A/Prof Aaron Oakley</th>
</tr>
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<tbody>
<tr>
<td>Location:</td>
<td>Building 18, Room G25</td>
</tr>
<tr>
<td>Telephone:</td>
<td>61 2 4221 4347</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:aaron_oakley@uow.edu.au">aaron_oakley@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times:</td>
<td>Wednesday 2pm-5pm</td>
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Project Supervisor
It is the responsibility of the student to identify a suitable research supervisor and project to be undertaken as the core component of this subject. Students should contact the subject coordinator in the first instance for advice, and then consult various potential supervisors for an outline of projects that are on offer. Prospective students are encouraged to discuss possible projects with a range of potential supervisors before deciding on a project. A useful starting point is the school website which outlines the research interests of all members of academic staff. A project and supervisor must be agreed with the subject coordinator no later than the first week of the session in which the project is to be undertaken. Supervision of a project will depend in part on the availability of resources.

Student Support and Advice
For general enquiries please contact SMAH Central:

| Location: | 41.152 |
| Telephone:| 61 2 4221 3492 |
| Email:    | smah-students@uow.edu.au |
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Section A: General Information

Subject Learning Outcomes

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<th>On completion of this subject, students should be able to:</th>
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<tr>
<td>a) Manage and plan experiments given a project topic</td>
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<td>b) Understand background literature concerning their topic</td>
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<tr>
<td>c) Relate results from their project area in both written and oral form to an audience of their peers</td>
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Subject Description

Research projects are undertaken under the direct guidance of an academic supervisor, chosen after consultation with academic staff and the Head of School. The projects will introduce students to a range of advanced experimental techniques, and familiarise them with the scientific approach to research. Students must attend School seminars. Selection for this laboratory project is based on merit, and intending students should consult with the Head before enrolment.

Graduate Qualities

The University of Wollongong has developed five graduate qualities (http://www.uow.edu.au/student/qualities/index.html), which it considers express valuable qualities that are essential for UOW graduates in gaining employment and making an important contribution to society and their chosen field. Student development of the following graduate qualities will be enhanced by their participation in this subject:

1. **Informed**: Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas.
2. **Independent learners**: Engage with new ideas and ways of thinking and critically analyse issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.
3. **Problem solvers**: Take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards.
4. **Effective communicators**: Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognise how culture can shape communication.
5. **Responsible**: Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.

eLearning Space

This subject does not utilise eLearning

Lecture, Tutorial, Laboratory Times

All timetable information is subject to variation. Check the latest information on the university web timetable via the Timetable link under Study Resources on the Current Students webpage or log into SOLS to view your personal timetable prior to attending classes.

Readings, References and Materials

**Textbooks:**
The following text(s) will need to be purchased by students enrolled in this class.

*Nil*
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.

Relevant reading material may be allocated by the project supervisor.

Materials:
The availability of any necessary materials to undertake the project is to be agreed upon in consultation between the student and the academic staff member supervising the project.

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

Nil

Recommended readings are not intended as an exhaustive list, students should use the Library catalogue and databases to locate additional resources.

Recent Changes to this Subject
i. In 2014 the subject learning outcomes have been included to provide clear information for students on subject requirements.

Ethical Objection to the Use of Animal and Animal Products
Specific learning objectives may require the use of animals, animal tissues, and or animal-derived products (such as sera). Students with conscientious objections to this use should choose a project not requiring the use of such materials. Students should make specific enquiries with potential research supervisors.

Students who intend to avoid a particular learning activity on the basis of conscientious objection should notify the subject coordinator in writing as soon as possible and not later than the end of Week 1 of the session. Students who do not participate in a particular learning activity are required to complete an alternative exercise (a CD-ROM is available) or attend the practical and “observe”. The material involved is examinable and the prac must be written up and completed in your workbook. For further information, refer to http://www.uow.edu.au/about/policy/UOW058708.html

Laboratory Safety Guidelines
The rules below are general rules that are required in laboratories.

• Before commencing your project you are to ensure that you understand specific procedures for the laboratory in which you work.
• You will need to fill out a risk assessment form before commencing any experiments (confer with your supervisor).
• Never use any equipment or attempt any experiment without checking the safety implications with your supervisor or experienced delegated laboratory worker.
• Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.

Timetable of Topics/List of Topics Covered
As this is a research subject this section is not applicable. These will be decided on by the Student and their Project Supervisor.
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>Written Report</td>
<td>5 pm on the first Monday of the examination period</td>
<td>80%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>Seminar</td>
<td>By consultation</td>
<td>20%</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**

- **Report on project and literature review**
- **Due date**: 5 pm on the first Monday of the examination period
- **Weighting**: 80%
- **Submission**: Submit two (2) hardcopies of your assignment to the Subject Coordinator.
- **Type of Collaboration**: Individual Assessment.
- **Length**: 20-30 pages

**Details**

The report will be evaluated on various aspects including:

a) clarity, precision and conciseness,
b) the general arrangement and organization of the material presented, and
c) the quality and relevance of illustrations and tabulated data.

See the coordinator for a more complete list of assessment criteria.

**Style and format**

Tips for Report Writing:

- The report (Word document) should be about 20-30 pages long (double-spaced) including diagrams and list of references. Approach the coordinator or your supervisor to view examples of previous CHEM340 reports.
- The report should include the following:
  - Title sheet
  - Table of Contents
  - Acknowledgements
  - Abstract. One paragraph on a separate page that describes the main results from your project.
  - Introduction. Literature review of your topic that sets the scene for your project, followed by a brief list of aims.
  - Materials and Methods. Concise description of your experiments, but detailed enough so that experiments could be repeated by your peers.
  - Results and Discussion. This is the main body of your report. The Results can be a separate section followed by the Discussion, or Results and Discussion can be presented together. If possible, you should prepare Table and Figures as you work through your project (i.e. decide how you might present your data).
  - Appendix. This is not necessary for all projects, but may be required where large amounts of data in tables or spectra, for example, need to be presented.
  - References. Choose a peer-reviewed journal from the relevant field (e.g. J. Am. Chem. Soc., Chem. Rev., Biochemistry, etc) and follow that referencing style. Be consistent!

The report writing process is part of the learning process in this subject. Your supervisor will provide advice on scientific writing. Students must give the supervisor time to read the first draft of the report. Students should be acquiring a good grasp of the literature from the commencement of their project and should consider writing the introduction at least 4 weeks before the report is due. Your completed first draft should be given to your supervisor at least one week before the report is due (but consult with your supervisor to check this is compatible with their commitments).
### Assessment 2

<table>
<thead>
<tr>
<th>Due date</th>
<th>By Consultation</th>
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<tbody>
<tr>
<td>Weighting</td>
<td>20%</td>
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<tr>
<td>Submission</td>
<td>N/A – Presentation only.</td>
</tr>
<tr>
<td>Type of Collaboration</td>
<td>Individual Assessment.</td>
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<tr>
<td>Length</td>
<td>15 minutes</td>
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<tr>
<td>Details</td>
<td>Two marks are used to determine the overall seminar mark. These are presentation (10%) and content (10%). This also includes the ability of the student to competently answer questions at the end of the seminar (5 min).</td>
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</table>

### Style and format

**Tips for the Seminar**
Seminars are usually given using Microsoft Power Point (or similar). Write out an outline (e.g., dot points) for your talk based on each slide you will be presenting. For a 15 min talk, this may be 15 slides, but this depends somewhat on the project topic. Confer with your supervisor, and then prepare the slides. Practise your talk by yourself at least 3 days before the due date. Practise your talk in front of your supervisor or someone experienced from your lab. Practise your revised talk.

### 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:
- attempt all assessment tasks
- pass all assessment tasks
- pass the final assessment task
- meet the minimum participation requirements set out below.

### Minimum Student Attendance and Participation:

It is expected that students will allocate 16 hours per week to this subject, including 6 hours laboratory work per week, any required class attendance, completion of prescribed readings and assessment tasks.

Student attendance at tutorials, practicals, seminars and/or simulations is compulsory and students must attend at least 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:

### 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:
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

Late Submission Penalty
Late submission of an assessment task without an approved extension of the deadline is not acceptable. Marks will be deducted for late submission at the rate of 10% of the total possible marks for that particular assessment task per day. This means that if a piece of work is marked out of 100, then the late penalty will be 10 marks per day (10% of 100 possible marks per day). The formula for calculating the late penalty is the total possible marks x 0.10 x number of days late. For the purposes of this policy a weekend (Saturday and Sunday) will be regarded as two days.

For example:
- Student A submits an assignment which is marked out of 100. The assignment is submitted 4 days late. This means that a late penalty of 40 marks will apply (100 x 0.10 x 4). The assignment is marked as per normal out of 100 and is given a mark of 85/100, and then the late penalty is applied. The result is that the student receives a final mark of 45/100 for the assignment (85 (original mark) – 40 marks (late penalty) = 45/100 (final mark)).
- Student B submits a report which is marked out of 20. The report is submitted three days late. This means that a late penalty of 6 marks will apply ((20 x 0.10 x 3). The report is marked as per normal out of 20 and is given a mark of 15/20, and then the late penalty is applied. The result is that the student receives a final mark of 9/20 for the report (15 (original mark) – 6 marks (late penalty) = 9/20 (final mark)).

No marks will be awarded for work submitted after the assessment has been returned to the students (except where a particular assessment task is undertaken by students at different times throughout the session, but where the assessment is based on experiments or case studies specific to a student). Notwithstanding this, students must complete all assessment tasks to a satisfactory standard and submit them, regardless of lateness or loss of marks, where submission is a condition of satisfactorily completing the subject.

Supplementary Assessments
Supplementary assessment may be offered to students who apply for student academic consideration and can demonstrate suitable grounds in accordance with the Student Academic Consideration Policy. 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

System of Referencing Used for Written Work
The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assignment (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 plagiariising 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 Assignments

Refer to the submission requirements under the details of the individual assessments. Students should ensure that they receive a receipt acknowledging 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

Students will be notified when they can collect their assign or view their marked assessment. 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 Grievance 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 Assignment 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

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<thead>
<tr>
<th>Version Control</th>
<th>Release Date</th>
<th>Author/Reviewer</th>
<th>Approved By</th>
<th>Amendment</th>
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