SCIE912: Fundamentals of Science Laboratories

Subject Outline
Autumn 2016
On-Campus
Wollongong

Subject Information
Credit Points: 6
Pre-requisite(s): Nil
Co-requisite(s): Nil
Restrictions: Nil
Contact Hours: As per subject database

Subject Contacts
Subject Coordinator/Lecturer

<table>
<thead>
<tr>
<th>Name:</th>
<th>Dr Katarina Mikac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Building 41, Room 173</td>
</tr>
<tr>
<td>Telephone:</td>
<td>61 2 4221 3307</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:katarina_mikac@uow.edu.au">katarina_mikac@uow.edu.au</a></td>
</tr>
<tr>
<td>Consultation mode and times:</td>
<td>Email for appointment</td>
</tr>
</tbody>
</table>

Student Support and Advice
For general enquiries please contact StudentHub 41:

Location: 41.138B
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.
## Table of Contents

Section A: General Information ............................................................................................................... 4  
Subject Learning Outcomes .................................................................................................................. 4  
Subject Description ................................................................................................................................. 4  
eLearning Space ....................................................................................................................................... 4  
Lecture, Tutorial, Laboratory Times ...................................................................................................... 4  
Readings, References and Materials ..................................................................................................... 5  
  Textbooks........................................................................................................................................ 5  
  Prescribed Readings (includes eReadings) ......................................................................................... 5  
  Materials ........................................................................................................................................ 5  
  Recommended Readings ..................................................................................................................... 5  
Recent Changes to this Subject ............................................................................................................ 5  
Laboratory Safety Guidelines .................................................................................................................. 5  
List of Topics Covered ............................................................................................................................. 5  

Section B: Assessment ............................................................................................................................... 6  
Assessment Summary ............................................................................................................................... 6  
Details of Assessment Tasks .................................................................................................................. 6  
Minimum Requirements for a Pass in this Subject .............................................................................. 7  
  Minimum Student Attendance and Participation ............................................................................... 7  
Scaling .................................................................................................................................................. 7  
Late Submission .................................................................................................................................... 7  
  Late Submission Penalty – at 5% ....................................................................................................... 7  
Supplementary Assessments .................................................................................................................. 8  
System of Referencing Used for Written Work .................................................................................... 8  
Use of Internet Sources ......................................................................................................................... 8  
Plagiarism ............................................................................................................................................. 8  
Submission of Assessments ................................................................................................................... 8  
Assessment Return ................................................................................................................................. 9  

Section C: General Advice .......................................................................................................................... 10  
University Policies .................................................................................................................................. 10  
Student Support Services and Facilities ............................................................................................... 10  
Student Etiquette ................................................................................................................................. 10  
Version Control Table ............................................................................................................................ 10
Section A: General Information

Subject Learning Outcomes

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

1. Demonstrate an understanding of the scientific method;

2. Consolidate and synthesise knowledge related to a science discipline;

3. Demonstrate advanced skills in investigating, analysing and synthesising experimental data gathered through scientific methods;

4. Demonstrate advanced skills in communicating the experimental data distilled and gathered through the scientific method;

5. Apply the knowledge and skills of the scientific method in a research context.

Subject Description

This subject aims to ensure that all students entering the Master of Science (by course work) are aware of, and have the opportunity to develop competency in standard laboratory techniques and field skills that are necessary for successful engagement in science subjects at UOW. Fundamentals of Science Practice (SCIE912) draws upon the use and understanding of standard laboratory and field techniques while incorporating the use of scientific language (spoken and written) skills learnt in SCIE911 (Fundamentals of Communicating the Sciences) and the numeracy and statistical skills developed in SCIE913 (Fundamentals of Science Data & IT). Scientific reports in this subject will be based on laboratory (and field) practical exercises conducted in class. The emphasis is on the development of practical skills in the laboratory (and field) and consolidation of these skills with finding and interpreting scientific data, in using academic English and in teamwork, as well as on understanding the design and marking criteria of assessment tasks encountered throughout the degree.

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. http://www.uow.edu.au/student/index.html

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.

Refer to discipline specific (Earth and Environmental Sciences, Chemistry or Biology) Subject Outline

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

Refer to discipline specific (Earth and Environmental Sciences, Chemistry or Biology) Subject Outline

Materials
Refer to discipline specific (Earth and Environmental Sciences, Chemistry or Biology) Subject Outline

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

Refer to discipline specific (Earth and Environmental Sciences, Chemistry or Biology) Subject Outline

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
Nil

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 laboratory supervisor).
- Never use any equipment or attempt any experiment without checking the safety implications with your laboratory supervisor or experienced delegated laboratory worker.
- Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.

List of Topics Covered
A Timetable of Topics will be available from the eLearning site in week 1 of session.
### Section B: Assessment

#### Assessment Summary

<table>
<thead>
<tr>
<th>Assessment Item</th>
<th>Form of Assessment</th>
<th>Due Date</th>
<th>Return/Feedback Due Dates</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment 1</td>
<td>Laboratory Exercises/Reports</td>
<td>Weeks 4 &amp; 6</td>
<td>Within 14 days from date of submission</td>
<td>20%</td>
</tr>
<tr>
<td>Assessment 2</td>
<td>In-session Tests/Quizzes</td>
<td>Various throughout session</td>
<td>Within 14 days from date of submission</td>
<td>40%</td>
</tr>
<tr>
<td>Assessment 3</td>
<td>Report</td>
<td>Exam week 1</td>
<td>Release of results</td>
<td>40%</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.

<table>
<thead>
<tr>
<th>Assessment 1</th>
<th>Laboratory Exercises/Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>Weeks 4 and 6</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>20%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Submit an electronic copy of your assessment via upload to eLearning</td>
</tr>
<tr>
<td><strong>Type of Collaboration</strong></td>
<td>Individual Assessment</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>See eLearning site for more information</td>
</tr>
<tr>
<td><strong>SLO</strong></td>
<td>1-5</td>
</tr>
<tr>
<td><strong>Marking Criteria</strong></td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment 2</th>
<th>In-session Tests/Quizzes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>Various throughout session – Students are advised to check eLearning for specific dates based on their specialisation area.</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>40%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Test/quiz 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>See eLearning for more information</td>
</tr>
<tr>
<td><strong>SLO</strong></td>
<td>1, 2, 4</td>
</tr>
<tr>
<td><strong>Marking criteria</strong></td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment 3</th>
<th>Report – Project Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Due date</strong></td>
<td>Exam week 1</td>
</tr>
<tr>
<td><strong>Weighting</strong></td>
<td>40%</td>
</tr>
<tr>
<td><strong>Submission</strong></td>
<td>Submit a hardcopy of your assessment to Katarina Mikac (41.173)</td>
</tr>
<tr>
<td><strong>Type of Collaboration</strong></td>
<td>Individual Assessment</td>
</tr>
<tr>
<td><strong>Length</strong></td>
<td>1500 words</td>
</tr>
<tr>
<td><strong>Style and format</strong></td>
<td>Scientific Report or Literature Review</td>
</tr>
<tr>
<td><strong>SLO</strong></td>
<td>1-5</td>
</tr>
<tr>
<td><strong>Marking Criteria</strong></td>
<td>The marking criteria will be made available on your eLearning site by week 1 of session.</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:

- pass all assessment tasks

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 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:


Late Submission Penalty – at 5%

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 5% 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 5 marks per day (5% of 100 possible marks per day). The formula for calculating the late penalty is: the total possible marks x 0.05 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 7 days late. This means that a late penalty of 35 marks will apply (100 x 0.05 x 7). 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 50/100 for the assignment (85 (original mark) – 35 marks (late penalty) = 50/100 (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 3 marks will apply ((20 x 0.05 x 3). The report is marked as per normal out of 20 and is given a mark of 17/20, and then the late penalty is applied. The result is that the student receives a final mark of 14/20 for the report (17 (original mark) – 3 marks (late penalty) = 14/20 (final mark)).

No marks will be awarded for work submitted either after the assessment has been returned to the students or more than two weeks after the due date, whichever is the sooner. This does not apply to
situations 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. In this case no marks will be awarded for work submitted more than two weeks after the due date.

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 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/](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 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 assessments in the event that re-submission is required.
Assessment Return

Students will be notified when they can collect or view their marked assessment. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.
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. Student Charter

c. Academic Integrity and Plagiarism Policy

d. Student Academic Consideration Policy

e. Course Progress Policy

f. Graduate Qualities Policy

g. Academic Complaints Policy (Coursework and Honours Students)

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

i. Intellectual Property Policy

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”.

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

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>20151201</td>
<td>Dr Katarina Mikac – Subject Coordinator</td>
<td>Mrs Sonia Losinno – ADE Nominee</td>
<td>FINAL SCIE912 Autumn 2016 Subject Outline</td>
</tr>
</tbody>
</table>