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Introductory Guide for Laboratory Demonstrators



Faculty of Science, Medicine and Health

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Useful acronyms

AC	Academic Consideration
AD(E)	Associate Dean Education – SMAH: Assoc. Prof. Dominique Parrish
AD(I)	Associate Dean International – SMAH: Prof. Dianne Jolley
AD(R)	Associate Dean Research – SMAH: Prof. Jenny Beck
AI	Academic Integrity
AIO	Academic Integrity Officer
AQS	Academic Quality and Standards – Director: Dominic Riordan
CLO	Course Learning Outcome
CPD	Continuing Professional Development
DVC(A)	Deputy Vice Chancellor Academic – Prof. Joe Chicharo
Exec. Dean	Executive Dean – SMAH: Prof. Alison Jones (DVC Health and Communities)
FMD	Facilities Management Division
HOS	Head of School
HOS _t	Head of Students
IMTS	Information Management and Technology Services – Director: Fiona Rankin
LTC	Learning, Teaching and Curriculum unit – Director: Prof. Maarten De Laat
PASS	Peer Assisted Study Sessions
PODS	Professional and Organisational Development – Director: Lorraine Denny
PVC	Pro Vice-Chancellor
RA	Reasonable Adjustment
SLO	Subject Learning Outcome
SMAH	Faculty of Science, Medicine and Health
SMP	Student Management Package
SSA	Student Support Advisor
SSD	Student Services Division
STF	Science Teaching Facility – Building 43
TAPS	Teaching and Assessment Policy Suite
TEQSA	Tertiary Education Quality and Standards Agency
TO	Technical Officer (a Professional member of staff)
UOW	University of Wollongong
VC	Vice-Chancellor – Prof. Paul Wellings, CBE
WATTLE	Wollongong Academy for Tertiary Teaching and Learning Excellence – Chair: Assoc. Prof. Sarah O’Shea
WHS	Workplace Health and Safety

Introduction

“Demonstrators are the most significant resource applied to the laboratory experience”

Rice, Thomas, O’Toole, 2009 p.71

Research has shown that how students interact with their laboratory demonstrator consistently ranks highly as a contributing factor toward their interest in and attitudes to their science courses (Osborne, Simon, and Collins 2003). *You* play a vital role in students’ learning and you are a very important and valued member of staff. In most cases teaching in a subject is conducted by a team of full-time and casual academic staff, with support from professional staff, including technical staff. You are a valuable member of this teaching team and the success of this team relies on your input, open communication and mutual respect amongst all members.

This Laboratory Guide has been designed for you as a new demonstrator and aims to provide practical ideas and teaching strategies to help you confidently engage and communicate with your students and facilitate effective learning outcomes. We encourage you to take a reflective approach to your teaching and to discuss your practice, and issues that arise, with each other and with the practical coordinator.

The Laboratory Guide is designed as a general reference. Discipline-specific structures, practices and support will be provided to you at your local School level. The Guide is recommended to be used *in conjunction* with other University of Wollongong resources available from the [Casual Teaching](#) webpage of the Learning, Teaching and Curriculum (LTC) Unit.

TOP TIPS

- Communicate regularly with your subject coordinator.
- Conduct an engaging demonstration by being prepared.
- Be knowledgeable about all emergency, health and safety procedures.
- Be familiar with all equipment, materials and procedures for experiments.
- Enjoy your teaching and remember you play a vital role in the students’ learning.

1. Role of a laboratory demonstrator

What do *you* think makes a good laboratory demonstrator? Below are some of the characteristics that have been identified as making an effective demonstrator in science laboratory classes:

- Be approachable to students.
- Provide clear explanations to student questions.
- Give clear explanations of what is expected of students.
- Mark without bias towards individuals and be consistent with other markers.
- Set a good example for students in their preparation and behaviour in the laboratory.
- Show good knowledge of the theory as well as demonstration techniques and skills.
- Be able to link the material presented in the laboratory with theory presented in lectures, tutorials, clinical sessions and assessment tasks.
- Provide constructive criticisms and suggestions to students as they work in the laboratory, as well as via student feedback verbally in class and formal written assessment.

Whatever you do as a demonstrator should *support learning*, so the question, “Is this the most effective way for this student to learn?” should be continually posed.

Teaching involves much more than knowledge in your discipline and running practical classes. Teaching requires careful planning, monitoring of student progress, taking responsibility for Workplace Health & Safety, assessing students’ work, providing feedback and evaluating your own effectiveness.

One of the most important things teachers do is provide *feedback*. At university students should be taking control of their own learning but they can do this effectively only if they have good feedback. If you see your job as helping students develop their ability to learn, you will give them a different kind and quality of feedback than if you think you are just presenting a topic or determining a mark.

You are also a lifelong learner and as a demonstrator you will experience the satisfaction of facilitating a group of students learning together. Your students bring their own experiences, knowledge and skills to the learning situation. With your facilitation they will learn from each other and you will learn from them – about your discipline and about learning and teaching.

As a professional you will be further developing your pedagogy through seeking feedback, discussion of ideas with others, reading, reflecting on your teaching and possibly in University staff development workshops or formal teaching courses.

2. Interacting with students

It is important to show respect for students. If you are enthusiastic, helpful, knowledgeable, and fair, you will be creating a learning environment that supports students.

New students may feel uncertain or lack confidence, particularly if they have no recent experience of formal study. You may be a student's least threatening point of contact with the University. Students will come to you to share their joys and successes. Some will also come with their disappointments or complaints. Sometimes students have personal problems that make it difficult for them to study effectively and may seek your advice.

What is not expected of demonstrators

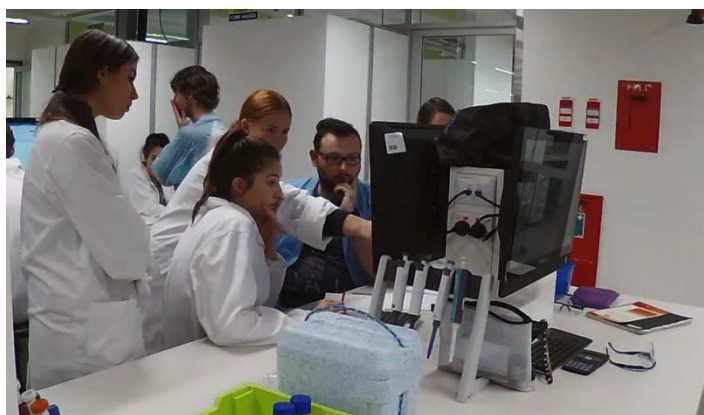
You are not expected to provide specialist help such as career guidance, academic progress advice or personal counselling. You should avoid this and refer students appropriately (see the section on [Resources](#) at the end of this document). You should consult with your subject coordinator to keep them informed and to allow follow up with the student if required. Advice should be confined to matters relating to the subject. Avoid discussing areas for which demonstrators are not qualified. Consultation out of practical times is not expected. Refer students to the subject coordinator or lecturer.

What is the role of the student?

Teaching is an interaction between teacher and student, so while the demonstrator has certain responsibilities in helping the student to learn, the student also has responsibilities for their own learning and for the learning environment they share with their peers. An outline of responsibilities of students can be found in the UOW [Student Conduct Rules](#).

A note about privacy

It is very important to discuss matters with students and seek advice, inside the teaching team. However it is not okay to discuss issues outside of this team and it is never okay to talk about students or staff on social media. Remember that you are a representative of the University. Please refer to the UOW [Privacy Policy](#) as necessary.



Students and demonstrator interacting, University of Wollongong 2017

3. Student diversity

A great strength of the University of Wollongong is the diversity of its students and staff population. The university values and encourages this diversity, respects differing beliefs and life experiences and strives to create a learning environment in which all students and staff can learn and teach effectively. The University has many policy documents in place in relation to [equity and diversity](#) which can be found on the Policy webpage.

Students with a disability

As a demonstrator you will likely teach students who have registered with Disability Services at UOW and may have a 'Reasonable Adjustment' (RA) document. This lists recommended adjustments that can be made to help the student succeed in their studies. It is the responsibility of the subject coordinator to review this document and put appropriate measures in place. The subject coordinator will also inform teaching staff of issues pertinent to them fulfilling their roles and responsibilities. All information shared with you remains strictly confidential and may not be shared or discussed outside of the immediate teaching team.

The University of Wollongong (UOW) is committed to the promotion of and adherence to the principles of the Disability Discrimination Act (DDA) 1992 (Commonwealth) and Disability Services Act (DSA) 1993 (NSW). The [Disability Policy – Students](#) is informed by the legislation and outlines the University's obligations accordingly. The purpose of the Disability Policy – Students is to support the provision of a physical, social and learning environment that complements and enhances the university experience for students with a disability on the same basis as other students, in an environment free from harassment and discrimination.

Student Support Advisers

[SSAs](#) can help students with a range of issues that are affecting their studies. They have the time to work with students to help them identify issues and to put strategies and supports in place to allow them to successfully complete their studies. SSAs may also work on Faculty specific programs that assist students.

Your [Faculty SSA](#) could:

- Refer and assist a student to access welfare and support services on and off campus e.g. Counselling, Disability Services, medical care, Housing Officer, Financial Support Services, Financial Counselling, Legal Advice, Centrelink, Tenancy Advice.
- Refer and assist students to access supports to help with their studies e.g. Learning Development, PASS, English Conversation Groups, and Head of Students etc.
- Work closely with International students on issues including; transitioning to study, language and cultural issues.
- Assist all students to understand the systems that are in place at UOW, including assistance to lodge academic considerations, late withdrawal applications, fees refunds etc.
- Give students information about grievance processes and refer them to the UOW Student Advocacy team if needed.
- Assist students to engage with extracurricular activities both on and off campus e.g. clubs and societies, URAC, unimovies, community gardens.
- Provide support to the Faculty when a student is involved in a critical incident.
- Support students experiencing financial difficulties.

4. Dealing with ‘disruptive behaviour’

It is difficult to provide a set of rules or definitive answers – each case depends on the particular context. Be aware that some of the discipline problems that arise may result from a student’s serious psychiatric disability that is not immediately apparent. When the level of disruption is low but annoying and there is a disability underlying, the situation becomes complex.

First

Be aware of the [Teaching and Assessment: Code of Practice - Teaching](#) and the [Student Conduct Rules](#) that make clear what is expected of teachers and students. Staff have a responsibility to: be aware of all Rules, standards, codes, policies, guidelines and procedures relating to student conduct; encourage acceptable student conduct and discourage unacceptable student conduct; and identify and act whenever student misconduct is suspected.

Be aware of the [Disability Policy – Students](#) which makes clear that staff have a responsibility to ensure the policy is applied so that all students are treated fairly and equitably. This includes constructively managing behavior arising from disability which impacts upon others. Make sure your practical classes offer interest, motivation, relevance, active learning and your approach is on an adult-to-adult level that treats students with dignity and respect. Regardless of their behavior, always avoid humiliating students, particularly in front of others.

Are you sure it is only the student that is the problem? Sometimes problems arise from the student/demonstrator combination.

If necessary, use assertive discipline procedures, e.g. agree on guidelines for behaviour at the beginning of the semester.

If a problem arises

Speak to the student privately after the practical class. If the problem is clearly affecting other students you may need to address this during class. Ask the student what they think the problem is and what they are looking for when they come to the practical class. Clearly describe the behaviour that is disrupting your class and why it is disrupting. Ask the student for a commitment to appropriate behavior. You should alert the lecturer/subject coordinator of the problem.

If there is still a problem

With guidance from the lecturer/subject coordinator hold a formal face-to-face meeting with the student and the lecturer/subject coordinator, citing the problem behaviour clearly and requesting for it to stop. With guidance from the lecturer/subject coordinator you should follow up in writing to the student, noting the time and date of the conversation, the request, and the actions to be taken by the student. This needs to be a true record of what transpired.

It is never wise to publicly instruct a student to leave a teaching space unless it is overwhelmingly clear that they are breaching the Student Conduct Rules and the problem is entirely in their hands. That is, they have not been intimidated or insulted, the teaching has been at least adequate, they really will not listen to reason and are preventing learning from happening or causing danger to themselves or others.

Never use physical force. If you are concerned about threatening behaviour you should call Security (4221 4900) and seek support from other staff.

5. Tips for international demonstrators

Every new demonstrator faces a great challenge. For the international demonstrator the demands of demonstrating include reaching across different cultural values and assumptions, different educational systems, different native languages, and non-verbal communication systems. Thus, the challenge is greater, but so is the opportunity. As a demonstrator you have the chance to develop a truly sophisticated command of English to which you may have already devoted a great deal of effort. You also have the opportunity to become part of the important Australian education system and enter into a meaningful, cooperative relationship with your students and the teaching team. Although this section refers to international demonstrators, much of this is relevant when teaching international students.

Language skills

If you have trouble expressing yourself in English, if students have trouble understanding you, or if you have trouble understanding them, make every effort you can to improve your English. Specifically, make sure that you speak English as much as possible, every day. Seek out English speaking co-workers, and friends. In addition, openly acknowledge on the first day of class that you and your students may have some difficulty communicating with each other because English is not your native language.

Ensuring your students understand you

1. do not speak quickly; 2. repeat and paraphrase to emphasise important ideas; 3. ask your students to raise their hands when they don't understand what you are saying; 4. check the dictionary for pronunciation of key words, and practice them; 5. practice your presentation out loud; 6. watch yourself speak into a mirror or record yourself.

Cultural differences

You may also be surprised at the informal behavior of students in class and in other interactions with their lecturers and demonstrators. For instance, students may wear casual clothes to class, during the practical they may talk with their friends, they may arrive or leave early, they may call their demonstrator by his/her first name and ask questions which seem to challenge the demonstrator. Such behavior may shock or offend you, if you are accustomed to a culture in which students are overtly deferential and respectful toward their lecturers and demonstrators. Recognise that your students are not acting disrespectful of you personally; rather, their behavior is normal for them. Indeed many students may behave informally with demonstrators they like and respect. However this does not mean that you must tolerate any behavior that appears disruptive to the class, such as students shouting.

Student expectations

Students expect and appreciate a variety of things from their demonstrators, some of which may be unlike the expectations of students in your country. Here are some examples.

1. students expect teachers to explain everything fully, particularly the details of what they are expected to do in the course and how grades are assigned; 2. students value demonstrators who are friendly and open; 3. students want demonstrators to interact with them in class, encouraging student participation and dealing gently with incorrect responses; 4. students prefer interesting classes with relevant and intriguing examples; 5. students respect demonstrators who are knowledgeable, but who are also willing to admit they don't know something when that is the case. Discuss any concerns with your supervisor.

6. The aims of laboratory work

In order to teach and assess a laboratory class successfully, it is important to understand the aims and anticipated learning outcomes of each topic. In the short term the typical aim of a session spent in the laboratory is to provide a context to explore concepts from lecture material as well as allowing the students to produce an assessable report or worksheet. The long-term goals of laboratory classes include:

- Fostering an ongoing interest in the course.
- Introducing students to future career options.
- Providing students with specialised technical skills.
- Encouraging student interaction, exchange of views and open communication.
- Reinforcing the theory presented in lectures by providing students with hands-on practical experiences.
- Improving students' understanding of the methods of scientific enquiry through experiments and project work.
- Developing general skills such as measurement, observation, recording, reasoning, problem-solving, note-taking, team work, and written and oral presentation skills.



A Biology Teaching Laboratory at the University of Wollongong 2017

7. Preparation before a laboratory class

It is important to make time to consider what you are trying to achieve and how you will approach this. Your approach will be partly shaped by the topic being taught. Speaking with the subject coordinator, laboratory technicians and other laboratory demonstrators about each of the topics will help you prepare and align your approach. Two helpful questions to ask are:

- Am I teaching concepts, facts, skills or a mix of these?
- How can I enable the students to have an active role in their learning?

Many subject coordinators will hold regular planning meetings with demonstrators. Preparing for and attending the planning meetings will help you identify potential problems or difficult questions you may encounter *before* the session starts. Before you attend these meetings, ensure that you have read all the relevant material in the course manual and that you understand the aims of the next laboratory demonstration. Arrive at the meeting with any specific questions you have about the concepts, methodology or equipment that will be used.

Make sure you know how to use all pieces of equipment and identify the person to contact if there are problems or if equipment malfunctions. It is very important to find out from the course coordinators where the students are in their learning and what material is currently being presented in the lectures. If you have not been given access to the subject eLearning site and other resources then ask the subject coordinator for access. This will help you link the material presented in the practical class with the theory being taught. Make the most of these meetings - the better prepared you are for the class, the more you will get out of your students.

It is equally important that you give some consideration to the motivation of the students you are going to be teaching. For many new students university is an intimidating experience. Try to remember *your* first few weeks at university and how you may have felt when you were new and less familiar and experienced with university life. Think about these questions:

- Why are the students studying this topic?
- What can I do to help facilitate their learning?
- What do the students expect of themselves?
- What do the students actually want to learn?
- What do they expect of me to help them be successful?
- How might I encourage students to be active, self-motivated and independent learners?

8. Preparation for teaching your laboratory class

For each lab demonstration session you need to develop an outline of how you will conduct the class with time-lines for each activity. You may be given a laboratory guide by your subject coordinator in which case you need to go through each step, or in rare cases you may need to prepare your own lesson plan.

The key point for you to consider is how you can give clear explanations and demonstrations to students so they can successfully complete each particular laboratory task. How can the allotted time best be used to achieve the final learning outcomes? Remember you are familiar with the material but it is all *new* for the students. So to help you give clear explanations to the students remember your:

(a) Communication Skills

Speak clearly, precisely and confidently, at a steady pace, not too fast or too slow and at a good volume, not too loud or too soft. Refer to the *Resources – Teaching and Learning – see Ice-breaker Ideas* available from the [Casual Teaching](#) webpage.

(b) Written Instructions

If your topic already has a set of written instructions for a task before your first practical class or laboratory demonstration it is best to work through them. Do they work? If not, why not? Where do changes need to be made? If you find the instructions need amendment or are not operational, first tactfully bring this to the attention of your course coordinator before making any changes. Together you can revise the parts which are unclear and go through them again or ask another demonstrator to go through the re-written format.

(c) Presentation Plan

Organize your information in a logical manner, tell the students *how* you have organized the laboratory class and describe the purpose for each activity. Where possible make references to the theory and material covered in the lecture. For example, if you want to:

- Describe a reaction - you can list the individual features and then move from feature to feature.
- Analyse a problem for causes - list the causes in a logical sequence from simple to complex or from specific to general.
- Contrast or use pros and cons - demonstrate how to argue a particular position in a process.
- Demonstrate a process - you need to separate all the steps in the process and present them in the order in which they occur.
- Summarize - move chronologically from the start to the finish revising the major topics covered.

You can go to *Resources – Teaching and Learning – see Plan a Lesson* available from the [Casual Teaching](#) webpage.

(d) Conveying Ideas

You need to alert students to the purpose of the laboratory session and the ideas to be introduced and learned. This information may be presented by the laboratory supervisor/lecturer at the start of the class so be aware of what has been covered. Help prepare your students by using phrases such as:

'Today we are going to look at the 5 main features of x.'

'What I'm going to do is to list the steps of the operation so that you know how it works.' 'There are at least two ways to argue for this process. Let's explore each one in detail.'

'The laboratory session today is going to focus on the 3 key concepts covered in the lecture, and we are going to explore in greater depth each of these concepts.'

Also, you need to connect ideas throughout the laboratory demonstration class and use multiple sources of input. The best way to indicate and connect ideas is by using certain phrases such as:

'Next I will review ...'

'Now I'd like to move on to ...'

'What I'd like to do next is focus on...'

'Now that we have explained the first part of the process, let's focus on the second part...'' 'Let's go back and look at...'

Another helpful strategy is to use *multiple approaches* when teaching new ideas. Students tend to remember images longer than they remember words. Vivid images or appropriate examples can assist students understanding and comprehension for example:

- Charts and graphs can easily depict differences, comparisons and contrasts.
- Showing a photograph or a video rather than just describing a process can be clearer.

Students have varying learning styles and for ideas about inclusive teaching you can go to *Resources – Teaching and Learning* – see *Inclusive Teaching* available from the [Casual Teaching](#) webpage.

(e) Rehearsal

Once you have completed these steps it is always helpful to rehearse your class in your head or out loud. This will not only help confirm you are prepared but also build your confidence and reduce any nervousness. Make sure you give yourself enough time in case you need to go back and clarify or review a few aspects of the class. At this point it is also a good idea to try and pre-empt possible questions students may ask. It is helpful before each class to go through this set of questions and write notes for yourself.

Summary Checklist - Teaching Preparation

<i>Questions to Consider</i>	<i>Your Notes</i>
Are you clear what the tasks of the lesson are?	
What concepts do the students need to have mastered before starting the class and what actions will you take if some students have not mastered these concepts? Is there a pre-lab exercise and/or quiz? Have you reviewed this?	
Do the students need any particular skills to be able to complete the task?	
Is there a written set of instructions with examples available for the students?	
Have you got all the necessary equipment available and set-up for the laboratory demonstration?	
Is the task to be completed and assessed during class time?	
Are there any accommodations that need to be made for a student with a disability? Have you reviewed their documentation or discussed this with the subject coordinator?	
Are you familiar with all necessary WH & S procedures for this class?	

9. Teaching strategies for laboratory classes

It is absolutely natural to feel nervous before any class and even very experienced teachers can still feel a little anxious before teaching. The following section aims to help you not remove but reduce some of your anxiety and manage any nervousness.

(a) Beginning the Laboratory Class

Always arrive early and if there is no class in the lab before you enter, review as much of the equipment and teaching resources as possible. Welcome students as they arrive, this is a good way to get to know students names and establish a friendly classroom atmosphere. Also ask students about the previous lecture, often a laboratory class is timetabled straight after a lecture and this will assist you to be in-sync with the students.

(b) Introductory Talk

In most demonstrations the lab supervisor/lecturer will introduce the class, however, if this is your responsibility then you need to start the laboratory class with a pre-lab talk or introduction where you may include:

- A demonstration of how the equipment works.
- A rough timetable of how the session will progress.
- An outline of all Workplace, Health and Safety guidelines.
- Definitions of terms and jargon that may be unfamiliar to students.
- Details of any assessment tasks during the class and what is expected.
- Explanation of concepts fundamental to successfully completing the session.
- The aims of the session and how these relate to the lecture and course materials.
- Details of clean-up procedure, including disposal of any harmful chemicals and sharps.

At the end of this section and *before* the laboratory commences provide the opportunity for students to ask questions and clarify the purpose and direction of the tasks of the practical.

(c) Main Practical Session

Now it is time to start the session and this will depend a lot on the type of ideas, demonstrations or experiments that are being conducted. Guide the students through each process, allowing and encouraging them to ask questions throughout the class. It is very important that students are given the opportunity to make their own discoveries and learn to reason and problem-solve. Use your own knowledge of the topic in the laboratory to facilitate them to find their own answers rather than *'just giving them a solution'*. This may mean explaining a concept or theory in a number of different ways, helping them to get started, moving them forward when they get stuck, providing anecdotal evidence or practical experience scenarios or re-directing them back to the lecture notes or text book to clarify and better understand the concepts.

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Student support

Providing assistance to *all* students means:

- Making sure you get around to all students and not missing anybody.
- Ensuring no one student or group of students takes up all of your time.
- Being sensitive to students who are struggling – offer guidance and encouragement.
- Remembering to be inclusive of all students, acknowledging each student will be coming from their own particular level of understanding and particular learning style.
- Be aware of adjustments required for disability students or students with other special needs.

Here are some ideas to help you manage the class while students are working on their task:

- Walk around the class rather than only standing at the front.
- Create a checklist-system to make sure you get to see each student or group.
- Always be visible so you can observe all students and they can get your attention.

Managing time

Managing time when teaching can be challenging, particularly when you have a diverse group of students. Sometimes you may feel you have too much time or too little time. Being prepared will help minimise this feeling as well as help you find the balance between teaching students who understand new ideas quickly and those who need more practice. If for example you feel you don't have enough time for lots of question during the lab, you could offer to answer questions via email or answer questions on the subject eLearning discussion forum/blog. If you feel you have too much time, always have extra questions prepared or start to introduce next week's topic.

Active learning and questioning

Students learn best when they are actively engaged, and the laboratory is a perfect place to foster active learning. Reward questions as much or more than answers, and remind students there are no silly questions. Encourage students to question and reflect on their own thoughts, processes and conclusions, other student's findings, as well as the steps outlined in any given text. You can share one student's questions with the class and discuss them as a group, as they may be questions of common interest to the entire class. For more information on the importance of questions and ideas on how to use them, refer to the *Resources – Teaching and Learning – Active Learning Strategy Handbook* (specifically the section on Questions and Answers, p6-8) from the [Casual Teaching](#) webpage.

In addition, consider the following techniques:

- *Pausing* - allows students time to think about a question before responding.
- *Re-phrasing* - students genuinely may not understand the original question.
- *Probing* - helps stimulate thinking skills. You can probe for clarification or examples.

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- *Reacting* - always react positively to student contributions. If an answer is clearly wrong or inadequate, try re-phrasing and clarifying the question.

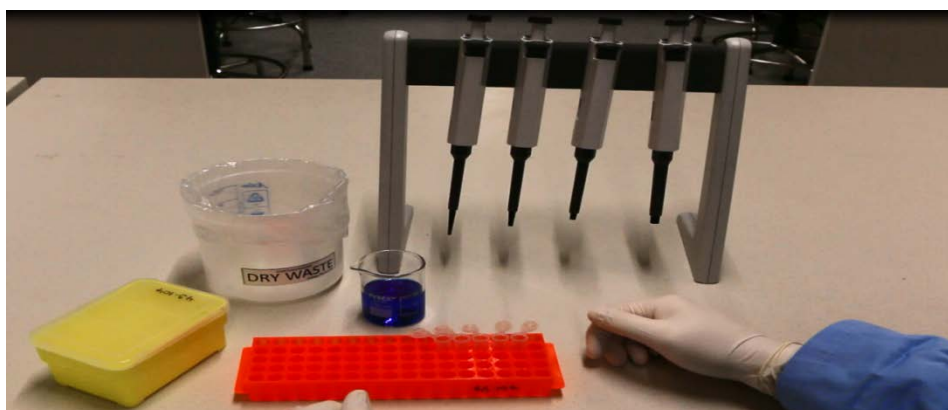
Keeping records

In most cases you will be required to maintain accurate records including attendance roles and marks. Your record keeping system will need to be one that others on the team can readily access, understand and use. Keep a record of student names, contact details, student numbers, attendance, assessments and consultations. Please consult with the subject coordinator on their record keeping requirements. It is recommended that your record attendance at the end of each laboratory class as students show you adequate completion of all required work. It is most important that these records are kept up-to-date throughout the session. Be aware of the limits of your authority, e.g. medical certificates should always be cited by the supervisor or coordinator and your subject may require students to submit an application for Academic Consideration in relation to missed classes and/or assessments.

(d) Summarising the Laboratory Lesson and Cleaning-up

When planning your laboratory demonstration it is important to always leave enough time for *summarising* the day's lesson and *cleaning-up* the laboratory. First gather *all* the students as one group and when you have their attention briefly summarise/review the key concepts covered in the lesson. When summing-up you need to:

- Remind students of any assessments, due dates and submission format.
- Summarise the key concepts of a task or experiment and suggest further readings.
- Emphasise the links between the lectures, course materials and laboratory exercises.
- Reinforce the clean-up procedure, including the disposal of any harmful or hazardous chemicals/sharps.



Laboratory samples, University of Wollongong 2017 (Courtesy of James Scifleet and Sue Curtis)

10. Guide to student assessment

The assessment of laboratory tasks serves two important purposes:

- To assess students learning and grade students on set tasks.
- To provide immediate feedback to specific problems so students become aware of gaps in their understanding.

In general you will be expected to mark in accordance with a specific set of assessment criteria, marking scheme or rubric. Subject outlines provide information to students about assessment requirements and how assignments will be marked. If you are unsure about any aspect of marking, always check with your subject coordinator, your fellow laboratory demonstrators and ask yourself the following questions:

Summary Checklist - Assessment

<i>Questions to Consider</i>	<i>Your Notes</i>
Am I clear about what the students are being assessed on in each task?	
Do I have a copy of and understand the marking criteria and marking scale?	
Do I take marks-off for poor grammar, spelling and English and what do I do with poor referencing methods?	
What are the guidelines for granting students extensions? Are there penalties for late submissions?	
Do I know what to do if students argue or want to appeal the marks they have been given?	
Do I know what to do if I suspect students have submitted work other than their own?	

Academic Integrity

The University of Wollongong regards academic dishonesty as a very serious matter. Remind students that every subject outline clearly shows links to the university's academic integrity policy and the role and responsibility of each student to adhere to this. If you suspect students of plagiarism then you need to contact your subject coordinator immediately. You can also provide students with the following links:

- [Academic and Research Integrity](http://www.uow.edu.au/academic-integrity/index.html)
<http://www.uow.edu.au/academic-integrity/index.html>
- [Academic Integrity Policy](http://www.uow.edu.au/about/policy/UOW058648.html)
<http://www.uow.edu.au/about/policy/UOW058648.html>
- [Student Conduct Rules](http://www.uow.edu.au/about/policy/UOW058723.html)
<http://www.uow.edu.au/about/policy/UOW058723.html>

The University of Wollongong classifies [Academic Misconduct into 6 separate types](#): Cheating; Collusion & Facilitation, Fraud, Misrepresentation & Fabrication, Obstruction & Interference, and Plagiarism.

As a laboratory demonstrator you might detect plagiarism in laboratory reports or academic misconduct during in class exam supervision. You may also need to be aware of students inappropriately 'sharing' experiment results. If you notice what you think may be academic misconduct you need to **consult and be guided** by your subject coordinator in how to respond and manage this. Some tips that may help you notice plagiarism include:

- Generally poor referencing techniques.
- Lack of quotation marks or correct referencing.
- Noticeable repetition from one student paper to another.
- Language that seems inconsistent with the student's other work.
- Inconsistencies in writing style or fonts within a piece of written work.

11. Providing student feedback

In order for students to learn and to make the most of the learning and assessment process it is essential to provide students with feedback. Often students are unsure of what constitutes feedback and only see marks and written feedback on individual reports as feedback. It is helpful to explain that in addition to comments on individual assignments, answering questions in class, on email or in forums is also feedback. Effective feedback:

- Is specific and timely and given as close to task completion as possible.
- Allows students to adapt and adjust their learning strategies.
- Leads students to being capable of assessing their own work.
- Gives students a clear indication of how work can be improved.
- Focus students on fulfilling the task rather than effort or time spent.
- Addresses students' misconceptions and gaps in their understanding.

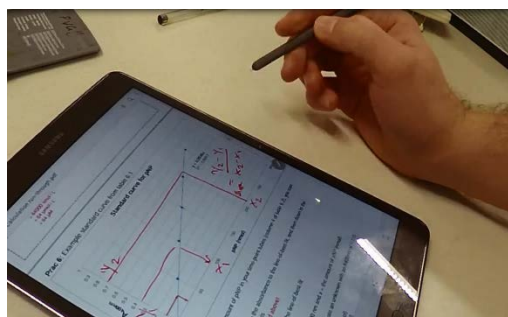
If students are to learn from written comments on individual/group assignments they must read, understand and act upon what you have written and respond accordingly in their next piece of work. All students need to receive feedback, not only those who did not do so well. Students who do well need to know why they achieved a high mark and what is needed to progress further.

Remember to:

- Try to sign off on a positive and encouraging note.
- Make *constructive* criticisms on potential improvements.
- Clearly explain why you have awarded a particular mark.
- Where applicable, encourage students to come and discuss the report with you.
- Use positive reinforcement and congratulate students on what they have done well.

As well as individual written feedback, it is also useful to provide some general feedback to the whole class. This can be done either during a class or at the start of the next week's class by drawing attention to common problems and questions asked during the week or from assignments that have been recently assessed. Discuss this with the lab supervisor/lecturer.

Providing feedback to students online,
University of Wollongong 2017



12. Evaluating your laboratory class

As a laboratory demonstrator you are not formally evaluated on your teaching. However, your teaching contributes to the overall student experience in any subject and each subject is formally evaluated on an ongoing basis. During the laboratory demonstration or towards the end, you may wish to get some immediate feedback on how the laboratory was perceived by the students. You could ask for a show of hands or request that students complete anonymously a simple 5 scale-checklist, which you can prepare before class and students drop into a box on their way out. The statements could be written to match the topic or be more general.

You may also choose to have a formal Teacher Evaluation conducted at the end of the teaching semester. You will need to consult with the subject coordinator.

STUDENT QUESTIONNAIRES

The scale for these statements is: Strongly Agree, Agree, Mildly Agree, Mildly Disagree, Disagree, Strongly Disagree and Unable to Judge/Not Applicable.

The following 22 questions are for practical/clinical classes:

1. This teacher is well prepared for the subject.
2. This teacher presents the subject matter clearly.
3. This teacher organises and sequences the subject matter well.
4. This teacher presents an appropriate amount of material for the time available.
5. This teacher stimulates me to think about the subject.
6. This teacher appears to be interested in assisting me to learn.
7. This teacher is helpful in response to my questions or problems.
8. Because of this teacher I have felt enthusiastic about studying this subject.
9. This teacher ensured that time spent in practical/clinical classes was used

Sample laboratory teacher evaluation questions at University of Wollongong 2017

Feedback on your teaching will guide you to improve your planning and delivery and therefore gradually build your confidence. You can work on improving your teaching by yourself, with peers, as well as with more experienced staff. Refer to *How Can I Get Feedback From My Students?* available from the [Casual Teaching](#) webpage.



Peer to peer discussion in laboratory teaching, University of Wollongong 2017

13. Workplace health and safety

As a laboratory demonstrator you are responsible for supervising your students at all times and for ensuring that the students are aware of the health and safety policies of your discipline, school and the university. You must have completed UOW's online induction course '[Casual Academic Staff Induction](#)' as well as any of your School's Workplace Health and Safety Induction sessions. You also need to be familiar with [UOW WH&S policies and procedures](#).

The rules governing behaviour in laboratories may differ depending on the type of session but there are a few standard rules that should be pointed out to all students.

- Long-hair must be tied back.
- No eating or drinking in the laboratory.
- Naked flames should not be left unattended.
- Close-toed shoes should be worn at all times.
- Personal protective equipment such as labcoats and protective eye wear should be worn at all times.
- Hands should be washed at the end of the session.
- Sharps should be disposed of only in marked containers.
- Hazardous chemicals should be disposed of in marked containers and *not* into the sewage system i.e. down the sink.

At all times lead by example and model exceptional WH&S practices.

You need to talk to students about general health and safety issues, as well as those specific to each laboratory session. If you are in **any doubt** about any health and safety issues within the laboratory, you should approach the laboratory technician or your subject coordinator for advice.

14. Policies and procedures

As a laboratory demonstrator you are a valuable member of the teaching team. As a member of this team you must be aware of, and conform to, the policies and procedures that govern learning and teaching at the University of Wollongong. These policies and procedures consistently undergo review so you must stay abreast of these changes.

The UOW [Policy Directory](http://www.uow.edu.au/about/policy/index.html) can be found at: <http://www.uow.edu.au/about/policy/index.html>

A special note about Teaching and Assessment

Following policy review the Teaching and Assessment Policy Suite was introduced in 2016. The Code of Practice - Casual Academic Teaching is currently under review.

The Teaching and Assessment Policy Suite (TAPS):

Code of Practice

[Teaching and Assessment: Code of Practice - Teaching](http://www.uow.edu.au/about/policy/UOW058666.html)

<http://www.uow.edu.au/about/policy/UOW058666.html>

Policies

[Teaching and Assessment: Subject Delivery Policy](http://www.uow.edu.au/about/policy/alphalisting/UOW222906.html)

<http://www.uow.edu.au/about/policy/alphalisting/UOW222906.html>

[Teaching and Assessment: Assessment and Feedback Policy](http://www.uow.edu.au/about/policy/alphalisting/UOW222905.html)

<http://www.uow.edu.au/about/policy/alphalisting/UOW222905.html>

If you are in **any doubt** about any issues within your teaching, you should approach the subject coordinator for advice.

15. Conclusion

The following checklist is a summary of points to consider when teaching a laboratory demonstrator class.

Summary Checklist – Ready to Start

<i>Key Questions to Answer</i>	<i>Y/N Follow-up</i>
Do I know who my subject coordinator is and have I met with him/her?	
Have I completed a School Induction for Workplace, Health & Safety?	
Have I attended a welcome & orientation to the course/school?	
Am I sure of what my role is as a laboratory demonstrator?	
Do I feel prepared for the laboratory class I am about to teach?	
Have I prepared 'how' I will teach the class?	
Do I know if any of the tasks are to be assessed?	
What strategies have I got in place to reflect on and evaluate the session?	
Do I know where to get extra support to develop my teaching skills?	

Enjoy your time as a Laboratory Demonstrator in the Faculty of Science, Medicine and Health

Resources

Administrative Support

[Faculty of Science, Medicine and Health](#)

<http://smah.uow.edu.au/index.html>

Key contact for pay details in SMAH:

Alexandra Groot-Koerkamp (Casual Administrative Officer – Team Leader), Email:

alexgk@uow.edu.au, Room: 28.126, Phone: 02 4221 5104

[UOW policies and procedures](#)

<http://www.uow.edu.au/about/policy/index.html?ssSourceSiteId=ancors>

Teaching Support

[Learning, Teaching & Curriculum \(LTC\)](#)

<http://www.uow.edu.au/dvca/ltc/index.html>

[Teacher Development and Recognition](#)

<http://www.uow.edu.au/dvca/ltc/teachdev/index.html>

[Wollongong Academy for Tertiary Teaching & Learning Excellence \(WATTLE\)](#)

<http://www.uow.edu.au/dvca/ltc/wattle/index.html>

[Academic Integrity](#)

<http://www.uow.edu.au/academic-integrity/index.html>

Support for your Students

[Support & Wellbeing](#)

<https://www.uow.edu.au/student/services/index.html>

[Learning Development for Students – Information for Staff \(including Learning Co-op\)](#)

<https://www.uow.edu.au/student/services/ld/staff/index.html>

[Student Support Advisors \(SSAs\)](#)

<https://www.uow.edu.au/student/services/SSA/index.html>

[StudentHub 41](#) – for SMAH students (Main Foyer Building 41, Open Mon-Fri 9am–5pm, Phone: 024221 3492, Email: smah-students@uow.edu.au)

<http://smah.uow.edu.au/current-students/index.html>

Please note that students contact StudentHub 41 to make an appointment to see one of the Heads of Students.

Introductory Guide for Laboratory Demonstrators

The **Head of Students'** Unit provides students with advice and support on many aspects of the University's Rules and Regulations. You can get assistance with:

- applying for credit - Advanced Standing
- applying to do more than the maximum credit points in a Session/Year
- taking a subject or subjects at another University - Cross Institutional Study
- monitoring and discussing your results if they are not satisfactory
- advice on appealing a mark in a subject

Professional Development Support

[Professional Development in Learning and Teaching](http://www.uow.edu.au/dvca/ltc/teachdev/profdev/index.html) – specific for L&T

<http://www.uow.edu.au/dvca/ltc/teachdev/profdev/index.html>

[Accreditation for Learning and Teaching \(CPD Portfolio\)](http://www.uow.edu.au/dvca/ltc/teachdev/cpd/index.html) – seek recognition through continuing professional development

<http://www.uow.edu.au/dvca/ltc/teachdev/cpd/index.html>

[Formal Peer Review of Teaching](http://www.uow.edu.au/dvca/ltc/teachdev/PeerReview/index.html) – receive feedback from teaching staff

<http://www.uow.edu.au/dvca/ltc/teachdev/PeerReview/index.html>

[Professional & Organisational Development Services \(PODS\)](https://intranet.uow.edu.au/pods/index.html) – generalised services

<https://intranet.uow.edu.au/pods/index.html>

[Casual Academic Staff Online Induction](https://intranet.uow.edu.au/pods/calendar/UOW054262.html) – a must for all casual staff

<https://intranet.uow.edu.au/pods/calendar/UOW054262.html>

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Notes



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***“Demonstrators are the most significant
resource applied to the laboratory
experience”***

Rice, Thomas, O’Toole, 2009 p.71

Faculty of Science, Medicine and Health