TEACHING ASSISTANT’S Guide to What to do in the Laboratory

The information below was taken from the UVic TA Manual (which can be found at http://www.ltc.uvic.ca/servicesprograms/taprod/documents/UVicTAManual.pdf). Not all suggestions below may be applicable in all departments on campus. Please use the information as a guide only.

When you teach in the laboratory program, you have additional responsibilities beyond the course content. You will be required to manage the laboratory setting (both students and experiments) and ensure student safety. Remember that the students will look to you for guidance and leadership in the event of an emergency. Make sure that you know how to respond in an earthquake, evacuation, fire or other emergencies (http://www.uvic.ca/emergency/index.html). Incidentally, this is true for whatever room you teach in.

Most lab classes meet once on a weekly basis for the duration of an academic term. As a TA you may be required to:
- Present short pre-laboratory talks.
- Give demonstrations on theoretical and practical aspects of experiments.
- Coach the students one-on-one while they are performing their experiments.
- Help trouble-shoot experimental problems.
- Give quizzes and tests.
- Mark quizzes, laboratory assignments and reports.
- Meet with students during office hours, and attend meetings with the course supervisor and other TAs.
- Meet with the course supervisor to discuss specific duties.

Getting Ready
You will usually meet before the first laboratory with your fellow TAs and course supervisor to:
- Discuss the nature of your laboratory teaching responsibilities (i.e. are you responsible for pre-lab talks, are you there to answer questions, etc.).
- Confirm the dates and times you are expected to be teaching or demonstrating in the lab. Do you have to be there early? Do you clean up at the end? Do you have to set anything up for the next section?
- Find out details of marking assignments and departmental policies on cheating, non-attendance, and reports not handed in. Refer to your department’s policy book, or ask your course coordinator.
- If you are to lead field trips, ask what transportation arrangements are in place: will you be expected to drive students? What is the insurance arrangement? Must you use your own vehicle? If so, how will you be compensated? Do you need a special license? Contact your department for more specific information.
- Familiarize yourself with emergency and safety procedures in your department, including emergency phone numbers, location of safety equipment, first-aid facilities, how to keep lab areas clean, procedures for handling chemicals, and disposing of waste.
- Contact Occupational Health and Safety for details.

Information for Your Students
- Inform your students about lab safety rules (e.g. lab coats, closed-toe shoes, etc.) during the very first class. If there is a departmental or course hand-out on lab safety, make sure every student receives a copy.
- Tour the lab with your students making sure they know the location of first-aid kits and safety equipment.

Student Performance
- Explain how lab performance is to be marked and how the labs tie in with other parts of the course.
- Talk about attendance at labs and the policy for make-up labs if any.
- Explain what kind or reports are expected and in what format; explain the marking scheme, due dates and penalties for late reports. The above information should also be given to students as a handout.
- Explain exactly what advance preparation you expect from your students before the lab, e.g. reading the lab manual.
- Talk about what is and what is not acceptable, i.e. collaboration, acknowledgement, plagiarism, etc. Ideally, give some examples specific to your course or discipline.

Before the Lab
- Understand the purpose and objectives of the experiment so you know what your students are supposed to learn.
- If you are unfamiliar with a lab exercise or procedure, try it out before the class.
- Make sure you have analyzed the data or performed the experiment so you are able to check student answers.
- Plan your lab. Write an introduction, prepare handouts and background material.
- Examine all samples and specimens making sure to locate key structures. Remember that diagrams and pictures often look very different from actual samples so know what you are looking at.
- Be prepared if the experiments don’t work. Brainstorm possible reasons why it may not work so you are prepared for the worst.

During the Lab
- Begin with a review of last week’s lab and connect with this week’s lab. Explain where the links to lecture material occur. There may not be any, but this is also worth explaining - emphasizing why the material is included in the lab program.
- Give a short pre-lab talk to explain the lab organization, timing management issues, safety precautions, relevance, etc. Pre-lab talks are not meant to be a lecture (i.e. give new material) but can highlight important concepts on a practical basis.
- Create a “To Do” list where you highlight important items for the students to cover in the lab.
- Check to see if there are any questions from your students.
- Think about working with students in small groups rather than addressing the whole class.
- Circulate and check on your students frequently. If results are not as expected, encourage students to speculate about reasons why.
- Finish with a post-lab talk to summarize the important results of any experiments.
- Make sure students leave the lab clean and the equipment is put away properly.
- Do a routine check at the end of the lab: turn off lights, lock equipment cabinets; check air, gas, and steam taps. Lock up the laboratory. Does the department/course have a checklist for ending labs?

**Interaction with Students**
- Circulate among students during the lab to answer questions or give assistance. Don’t wait for students’ questions, ask “What stage are you at?” or ask how things are going. Try not to hover.
- Don’t be quick to solve students’ problems. Ask probing questions to help them think it through.
- Rather than answering the same individual questions repeatedly, address the class (or small group) as a whole. The frequency of the question probably means that everyone is confused at that point.
- If you don’t know or are unsure of an answer to a student’s question, say you will find out for them. Don’t bluff.
- Never let students think they asked a stupid question.
- Treat your students with respect and be approachable.
- Work hard at creating an environment in which the students feel comfortable in learning from you.
- Be approachable. Find the answers together.