CHEM22600S: The Demonstrator's role

Introduction

Thank you for agreeing to serve as a post graduate demonstrator in the second year synthesis laboratory. In this 12 week laboratory course we wish to equip the student with practical skills which will enable them to work efficiently and safely in a laboratory setting and to prepare them for more advanced investigation in year 3. The laboratory component of the course accounts for 25% of second year marks. Students must attend regularly and a record of the attendance will be taken. The laboratory should not be viewed by the student as a separate unit to be taken alongside theory lectures – it is an integral part of the second year course. It has been designed not only to exemplify material discussed in lectures, but also to test analytic skills, enable them to present experimental findings in a coherent manner and to apply knowledge and appropriate theory to the solving of problems.

Your duty as a demonstrator is to assist both staff and students in the laboratory by providing advice, checking that what students are doing is safe and sensible and that they make the best use of time. You need to read and understand the experiments and to be aware of safety protocols and risks associated with them.

In the lab we are teaching the students how to prepare, separate and characterise compounds; how to do this in a safe and scientific manner, and how to make notes, interpret & report what they have done. We are not just testing to see what they can do without assistance.

Demonstrating is a professional undertaking.
You need to be active, vigilant and well informed in order to help the students.

- Before each experiment you will be asked to discuss and sign COSHH forms. Check that all substances used & prepared (including solvents and by-products) are entered on the CoSHH form. If an assessment is incomplete then either guide the student through its completion or tell them where they can find the answers. **If in doubt refer to a member of staff.**

Safety is paramount …

- **ALL STAFF and STUDENTS <u>MUST</u> wear eye protection and a laboratory coat while in the lab.**

- We insist students have a valid, signed COSHH form **BEFORE** they do an experiment – students may be asked at any time to show their COSHH form for the experiment that they are doing, if they can't, let a member of staff know. Students not handing in completed COSHH forms will be given zero marks.

- We are trying to encourage good habits; students need to work in a clean and methodical fashion – benches, balances should be kept clean; lab-books must be used to make a note of measurements and quantities, scraps of paper will not do! Samples must be labelled, name date *etc.*

- Students, demonstrators & staff MUST wear safety glasses and conform to acceptable safety and professional behaviours at all time in the lab.

- Make a point of knowing where safety equipment is in the lab. This includes fire, extinguishers and escape routes)

- **If an incident occurs then inform a member of staff at the earliest opportunity.**
- Be proactive: demonstrating is not a passive duty. By all means discuss mechanisms of reactions and spectral data with the students. Make use of the white boards at the end of each BAY for impromptu mini-tutorials and discussions. Please try and ensure that students understand underlying theory. I will be uploading background information on each experiment to the Staff/Demonstrator area for CHEM22600S on Blackboard. You should be able to access this material and use it for the basis of your discussions.

- Students are requested to answer a series of questions in the formally assessed write-ups: you can give help and assistance with these – but do not supply them with "the answer". You can for example direct the students to a useful text etc. and **guide** them to a solution but their answers form part of their formal assessment so the **final analysis should be their own**. We are not looking for vast amounts of discussion – but some proof that they have had do a little reading.

- Do not be badgered into giving m.p. data *etc.* to students: they are required (with your help) to find literature values from **primary sources** (not Aldrich!) using SciFinder.

- Encourage students to make molecular models of products – this is particularly important in those experiments where stereochemical features are to be discussed.

- **THE ARRANGEMENTS**

- Students are required to complete 5 experiments in semester 2: **FOUR C** experiments (starting with **C1** I week 1) and finishing with their **D** experiment in week 12. If a student is absent please ensure that they completer a "Lab Absence form". Students should complete 1 experiment per week in semester 2 and submit their reports to Blackboard as per the Laboratory Timetable (below). Students will also be required to complete **TWO** unknown identifications: **E1** (which will be a group exercise to be completed bay each BAY, which will not be formally assessed) and **E2** (which will be marked by Organic tutors). The **E** exercises can be attempted during any part of weeks 1-6 (Group 2) or 7-12 (Group 1): it is up to the students to decide when to complete these exercises.

- **Marking**

  A. You will be asked to give the students in your BAY **formative** "Feedback" for Experiments C2/C4 and during the laboratory class. Please use the general

guidelines which you can find on the Staff/Demonstrator area of the CHEM22600S website for this purpose.

Make sure that the student includes reasonable aims/objectives; a discussion section (which is to be written in English); a proper written experimental section (*JCS* style) and a conclusion (including lit. refs.). Students will be given a comprehensive write-up guide which they should follow: please encourage students to read this before they attempt their write-ups.

B. You will also be assigned specific experiments which are to be marked online: the marking rota can be found in the Staff/Demonstrator area of the website. **Please complete this task as rapidly as possible as the students value the feedback.**

Samples from each experiment will also be assessed for quality/yield (marked out of 10) by BAY demonstrators. Demonstrators should complete the appropriate S-Lab form (1 per experiment), return the "yellow copy to the student and retain the "top copy" in the Student's S-Lab folder. Mike will then collate these marks on BlackBoiard (marking guidelines are appended).

Please be vigilant as plagiarism/miscalculation of yields *etc.* can sometimes be a problem.

- **Attendance**

The students will need to be in the labs most of the time – and an attendance register will be taken. If someone is regularly missing or regularly turning up for just a short while please make a note of that and bring that to the attention to Graham Booth or myself (please send an e-mail to me so that I have a record). It is imperative that both staff and PG demonstrators arrive punctually for the start of the lab. Planning plays a key part of the lab: students should leave the laboratory by 12.30/4.00 pm as appropriate.

- **Absence**

If a student is absent please ensure that they complete a "Lab Absence form". Students are required to complete all 13 exercises during the course of the year. Any missed experiments are to be completed when time permits during the time that they are in the synthesis laboratory. The synthesis lab **does not** operate a "catch-up-week (unlike measurements) so they should consult BAY demonstrators, Mike Hughes and the staff demonstrator in order to complete missed assignments before the end of the laboratory course.

- **Credits**

You should remind students that a failed lab course (<40%) will result in immediate expulsion from the course at the end of year 2. Students must attend at least 75% of laboratory sessions in order to fulfil the School's progression requirements.

P. Quayle, June 2014