Tutorial Preparation Sheet

Exercise: ........................................... Date: ..........................................................

What are the purposes of this exercise for students?
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

Possible questions to probe student understanding:
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

Possible questions to stimulate discussion:
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

Queries/concerns that I need to follow up:
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

What worked well during this session:
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................

How may I have improved this session:
................................................................................................................................................................
................................................................................................................................................................
................................................................................................................................................................
# Tutorial/Lab Class Preparation

## Unit of Study: ..........................................................  For Week Commencing .............

## Tutorial/Lab Title:

## Objectives:
At the end of this session students will have:

**Objectives expressed in terms of the outcomes expected for students** ..........................................................

........................................................................................................................................................................

........................................................................................................................................................................

........................................................................................................................................................................

........................................................................................................................................................................


<table>
<thead>
<tr>
<th>Step</th>
<th>Content</th>
<th>Comments</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparation</strong></td>
<td>Review of preparation that was expected.</td>
<td>Sample questions to 'get the ball rolling'</td>
<td>How long in minutes</td>
</tr>
<tr>
<td></td>
<td>Setting the context for this tutorial/lab</td>
<td>Some genuine motivation related to learning objectives, student expectations or vocational demands</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Explain the objectives of this particular session</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Provide some motivation (other than 'you will need to know this for the exam')</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Body</strong></td>
<td>There may be one or more steps in the body of the tutorial or lab. Steps correspond to activities or discussion which focus on one single idea</td>
<td>For each step there may be points that you need to note, such as the answers to particular questions, extension work for 'clever clogs', reminders about what you need to do or say, or not.</td>
<td>How long in minutes</td>
</tr>
<tr>
<td></td>
<td>Step 1:</td>
<td>Step 1:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 2:</td>
<td>Step 2:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Step 3:</td>
<td>Step 3:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc</td>
<td>etc</td>
<td></td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td>Make some statement about what has taken place so that students can feel that they have achieved the objectives set out above.</td>
<td>Actual statement of conclusion is helpful. Don’t forget to allow time for this before the tutorial ends (on time, i.e. xx:50!)</td>
<td>How long in minutes</td>
</tr>
<tr>
<td><strong>Next Week</strong></td>
<td>Indication where you are going next. Directions for preparation for further exploration and preparation for next session.</td>
<td>Details</td>
<td>How long in minutes</td>
</tr>
</tbody>
</table>
### Tutorial/Lab Class Preparation

**Unit of Study:** …ASTR2003…………………………………… **For Week Commencing** 17-Mar-03…

**Tutorial/Lab Title:** …Predicting the future for Sagittarians…………………………………………………………

**Objectives:** At the end of this session students will have:

1. Appreciated the nature of the task of predicting the future generally, but especially for Sagittarians …………

2. Experienced writing predictions in suitably vague terms and for specific publication types …………………


<table>
<thead>
<tr>
<th>Step</th>
<th>Content</th>
<th>Comments</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparation</strong></td>
<td>Students have read Swami article. Details of Sagittarian attributes were discussed in lectures. Explain the objectives of this particular session. Provide motivation.</td>
<td>What did Swami claim was the most important criterion? You will soon be writing horoscopes for money. What do you need to know?</td>
<td>5</td>
</tr>
<tr>
<td><strong>Body</strong></td>
<td>Step 1: Buzz groups discuss the general structure of horoscope predictions. Length, tone, etc.</td>
<td>Step 1: Use Rushman’s list of criteria as a guide</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Step 2: Individual work. Write three horoscope entries for Sagittarians: (i) for a women’s magazine (ii) for a daily news paper (iii) for an astrology weekly.</td>
<td>Step 2: Briefly discuss the three different styles of publication Make sure there is no collusion. Students to work alone.</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Step 3: Class discussion. Selected student reads horoscopes. Class evaluates on the basis of the Swami criteria. Students criticise horoscopes read out.</td>
<td>Step 3: Briefly review Swami’s criteria (have OHP slide available) Try to reach consensus. What makes this horoscope believable? Would this horoscope appeal to the target audience?</td>
<td>20</td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td>Need to understand specific attributes Differences in style required for particular publications</td>
<td>You have seen the importance of understanding the star sign attributes You have applied the Swami criteria to evaluation of horoscopes</td>
<td>3</td>
</tr>
<tr>
<td><strong>Preparation</strong></td>
<td>Next week we will look at meeting the challenge of sceptics. Further practice “The Aquarians”.</td>
<td>Read “How to deal with cynicism” Jamad T.M., Astrol. Rev. Mar 1999, 21-8</td>
<td>2</td>
</tr>
</tbody>
</table>
## Tutorial/Lab Class Preparation

### Unit of Study:
For Week Commencing:

### Tutorial/Lab Title:

### Objectives:
At the end of this session students will have:

<table>
<thead>
<tr>
<th>Step</th>
<th>Content</th>
<th>Comments</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Body</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Conclusion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Next week</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Tutorial Vignettes

You are tutoring an evening class of 22 students, most of whom are part-time, mature age students. As a result you are younger than most of your class. In a particular tutorial you have finished showing a video, and are trying to inspire a discussion when one of the students claims to ‘have worked in a job just like this, and this is not what we did’. The student proceeds to tell the class exactly what they think about the issue, is hard to interrupt, and argues quite viciously every time you or another student tries to interject. At the end of the class the student asks to have a word with you and says that they are dissatisfied with the way the class is being taught and they intend to complain if you do not change your teaching style.

What are issues here?

What action could you take?

During one of your first tutorials you notice a student holding an English-Chinese dictionary struggling to keep up. At first the student very obviously asks a colleague to translate what you are saying to them, but when this becomes too disruptive, the student interrupts and ask you to explain almost everything again. Moans are heard from several other members of the class.

What are the issues here?

What action could you take here?

A student with a degenerative illness comes to you for help in preparing an assignment that is due the following week. You already know that he has major difficulties working sufficiently fast to keep up with the class. He explains that he has only had the energy to work through two of the set problems and he still does not understand the principles.

What are the issues here?

What action could you take here?


Teaching in Laboratory Classes

Teaching in the lab involves everything already discussed but requires additional input from staff.

What’s different about lab teaching?

•

•

•

•

•

•

How to work with the tricky situations?

A student comes up to you and asks, “Is this right?” What do you do next?

A group of students asks you for help with using a piece of equipment. It’s clear that they haven’t done the preparation exercises designed to explain how it works, and you realise you’re not too sure about demonstrating it to them either. What do you do?

A group of students habitually divides up the work for any lab activity and pools results at the end of the experiment. Does this worry you, and if so, what do you do about it?

The class carries out an experiment and shares results at the end of the lab. Your student groups seem to have results very different to the rest of the class. How do you discuss these with the group, and what will you recommend they discuss in their lab report?
What do students want from their lab demonstrator?

**Someone who:**

- is infinitely patient and will explain when necessary
- speaks clearly and loudly – labs are very noisy, busy places
- can integrate the theory and practical aspects of the lab experiment or activity
- can relate the lab work to situations outside in the ‘real world’
- is organized and has time for discussion at the end of the lab
- can help when necessary, but also stand back when things are going fine
- provides a good role model as a lab scientist with regard to safety and experimental techniques
- treats the lab exercises, no matter how simple, as real investigations in science
- is excited by the science and shows a sense of discovery
Laboratory Vignettes

During the first session, you ask students to work on a problem with their neighbour. There is a pause, then a few students start mumbling to one another, not about the problem. When you ask them what is going on, they say fairly aggressively that they just want you to give them the answers and let them go home. When you suggest they would learn more by working on the problems in groups, they complain that no-one had told them that this course would involve compulsory group-work. Another group of students complain that it isn’t fair that you will not tell them how the problems are solved as they paid for this course and they consider this part of the service they can expect. The rest of the students either look out of the window, just stare into their problem sheets or are occupied playing web games.

What are the issues here?
What action could you take?

You are a demonstrator in a large laboratory class. Students work in groups of 6. This is week 5 of semester. You have introduced the objectives of the experiment and highlighted some of the experimental techniques. You notice one particular group of 6 students that are working together. While all members of the group appear to be working, you notice that two of the group seem to be particularly involved while the other four are just following their instructions. Soon the experiment is complete. You check the work and find it has been done competently. As the students are leaving you hear one of the four remark “Even though you don’t learn anything, at least you get out of the lab early”

What could be the issue here?
What action could you take?

A mature-age student with a degenerative illness comes to you for help in preparing an assignment that is due the following week. You already know that he has major difficulties working sufficiently fast to keep up with the class. He explains that he has only had the energy to work through two of the set problems and he still does not understand the principles involved.

What could be the issue here?
What action could you take?
Three things that you will take away and use in your tutoring/laboratory demonstrating this semester:

1

............................................................................................................................................... 
............................................................................................................................................... 
............................................................................................................................................... 
............................................................................................................................................... 

2

............................................................................................................................................... 
............................................................................................................................................... 
............................................................................................................................................... 
............................................................................................................................................... 

3

............................................................................................................................................... 
............................................................................................................................................... 
............................................................................................................................................... 
...............................................................................................................................................
Reflecting on your experiences as a tutor

‘Reflection’ — one of today’s education buzzwords — is something you already do everyday. You might think about your day’s work as you make your way home, or relate problem you’ve had recently with friends or colleagues at the pub. As a tutor, perhaps you discuss a tutorial or lab with your colleagues afterwards, trying to figure out why the group up the back insists on sending SMS messages instead of doing their work. In all of this, you will more than likely think about what you have done, what you might have done differently, and how you feel about it all.

So it shouldn’t come as a surprise that reflecting on your experiences is a vital component of learning. There is a large body of evidence to support the idea that we learn much more efficiently and much more deeply when we take the time to reflect on what and how we are learning.

As part of this Tutor Training Program you are asked to reflect on your experiences as a tutor. This means taking the time to think about your tutoring, and deciding on a procedure for recording your thoughts and experiences. One popular way of doing this is by keeping a reflective journal. You should write in your journal after each lab, tutorial or class you are involved with — and more often, if you like.

Your journal could include your writings about the following:

- What happened in the session? (This could be a description or a sequence of events)
- What were the highlights or notable events? (What happened that you felt was important for the students or for you? Were there any difficulties or problems? Where there any successes?)
- Did the students achieve the objectives of the session? (What were the objectives? How did you help the students to achieve them? How successful were they? How successful were you?)
- How did you feel about the session?
- If you were to tutor that session again, what would you do differently? What would you do the same?
- What have your learned about your teaching or your students today?

Over the page we have included a template for your reflective journal. Feel free to use this for your own writing, or to find your own style.

Some further resources on reflective learning and reflective journals are:

- Learning and the Reflective Journal in Computer Science – a paper from Flinders University on using reflective journals in science education http://crpit.com/confpapers/CRPITV4George.pdf
Reflective Learning Journal

Exercise: ................................................................. Date: ......................................................

- What happened in this session?

- What were the highlights or notable events?
  What happened that you felt was important for the students or for you? Were there any difficulties or problems? Were there any successes?

- Did the students achieve the objectives of the session?
  What were the objectives? How did you help the students to achieve them? How successful were they? How successful were you?

- How did you feel about the session?

- If you were to tutor that session again, what would you do differently? What would you do the same?

- What is one thing you have learned about your teaching or your students today?
What it Means to be a Tutor in the Faculty of Science

The many facets of being a tutor

Teaching role
The success of courses in the Faculty of Science at The University of Sydney depends very much upon the efforts of the tutors and laboratory demonstrators. They provide the most effective learning opportunities because they deal with the students on an individual basis. To ensure the quality of the teaching program we try to select tutors and demonstrators who are suitably qualified and experienced. Because we place so much reliance on the work of the tutors and demonstrators we now provide this training course to give you some pointers to bear in mind when you are conducting tutorials or laboratory classes.

Laboratory and tutorial classes are usually organised in such a way that there is a specific amount of material to be covered in each session. The presentation of material should generally be covered in lectures but the follow-up and individual tuition is carried out by you, the tutors.

Role Model
Students will look to you as experts in the area and for advice in their learning. You will serve as a role model for the students in your groups. You can leave quite a lasting impression – be sure that it is a good one!

Provider of Evaluation and Feedback
It is important that you respond appropriately to the work of students in your group. They require feedback to let them know how they are going and to assure them that they have grasped concepts correctly. Positive reinforcement is a very effective teaching aid.

Mentor
As tutors and laboratory demonstrators you will be able to get close to the students in your group and to serve as a mentor, not only for you discipline area, but more generally too. Many of your students will be just beginning at university, and may be under considerable pressure. Listen to what your students say, and help them to cope with the pressures of this and other courses.

The Faculty of Science and the Institute for Teaching and Learning acknowledge material prepared by Dr Mauro Mocerino and Prof Marjan Zadnik and their team from Curtin University of Technology, WA, which has been reprinted in this document with their permission.
Students’ views on important qualities of a tutor or laboratory demonstrator

After asking students to choose the level of importance of twenty qualities of tutors and laboratory demonstrators, their ten most important were:

1. gives clear explanations when asked questions;
2. demonstrates practical techniques clearly;
3. has good knowledge of the theoretical subject matter;
4. marks work consistently;
5. provides a safe workplace;
6. gives the same attention to all, without bias towards individual students;
7. is friendly;
8. is experienced in teaching your unit;
9. organises everyone so they know what to do; and
10. supports students and helps their self-confidence.

These were all chosen as important/extremely important from a sample size of 456 students in the fields of Chemistry, Physics, Pharmacy, Biomedical Sciences, Chemical Engineering and Biology.
Survival Tips for the First Day of Class

- Nervousness is very normal – think back to when you were a student and realise that your class might be more nervous than you are.
- Remember that you have a great deal to offer your students, both in content knowledge and in surviving the university experience.
- Wear a name tag, introduce yourself and tell the students a little about yourself.
- Clearly describe how the session fits in with the rest of the course.
- Explain your expectations of the students with respect to attitude, preparation and interaction.

[Adapted from Emerson, 1996]

Preparing for a Session

Prior to each session:
- read through the material to be covered;
- identify and make sure you understand the objectives, both obvious and implicit;
- identify any of your own queries and follow them up;
- try to anticipate where students might have concerns – work out what you can do to prevent these occurring; and
- read through any suggested readings that the students are offered.

On the day:
- turn up to the venue before the students to check out the layout of equipment and materials, to check that you can use the equipment and that all of it is working;
- check that the ventilation and lighting are satisfactory;
- know who the technical staff responsible for the venue are and where to find them; and
- find out how the material to be covered is integrated with the rest of the unit including assessment.

[Adapted from McComb (1997); Newble & Cannon (1991)]
Teaching Pointers

- Be respectful.
- Be encouraging.
- Show your enthusiasm.
- Learn students’ names and use them.
- Take care never to intimidate students nor put them down.
- Be patient and keep your cool.
- Provide direction, not dictatorship.
- Guide the conversation, but remember to limit how much you talk.
- Encourage participation.
- Summarize the ideas presented in sessions.
- Encourage interaction by having tutees answer each others’ questions.
- Ask open-ended questions.
- Rephrase questions if they do not yield comments.
- Use eye contact.
- Listen to what your students have to say.
- Help your students to help themselves and to understand.
- Use clear instructions to help students to accomplish the required results for themselves.
- Remember, different people learn in different ways, so you may need to repeat the material more than once, and to present it in more ways than one, in order to cater for everybody in your group.
- Do not allow students to intimidate you, for example older or ‘more knowledgeable’ or students of the opposite sex! You have a sound academic background and should be thoroughly prepared for the job, so believe that you have something to offer.
- Ensure that everyone gets something out of the session. Take care not to ignore anybody for too long. Above all, do not allow any one student to exploit you! Make sure that everyone in your group gets a fair share of your time. Sometimes you can use able students to help some of their colleagues while you deal with others, but be sure that the correct message is being transmitted!
- As you move around your students, a few well-chosen questions will help you to assess how well the material presented has been assimilated. Just because it has been taught does not mean that everyone has learned it.

[Adapted from Owensboro Community & Technical College, 2001; What it Means to be a Tutor in the School of Information Technologies The University of Sydney]
Effective Questioning

The main aim of effective questioning is to generate more than a yes/no answer from students. The following Questioning Stems can be used to help students realise what they already know and to probe a student’s understanding of a topic.

During a laboratory session, questions that help a student to recall information they already know

Did you notice …?
What happened when …?
How many …?
What did you find …?
Have you seen …?
What causes …?
What do we already know about …?

Getting a student to seek relationships/patterns in his/her knowledge

What is the difference between … and …?
How are … and … similar?
Compare … and … with respect to?
How does … relate to what we learned before about …?
What are the strengths and weaknesses of …?
How does … affect …?

Questions that encourage the application of students’ knowledge

What is a new example of …?
How would you use … to …?
What are some possible solutions for …?
Explain why …?
Explain how …?
Why is … important?
What is the meaning of …?
What is the best … and why is it the best?

Questions that get students to speculate on their knowledge

What might happen if …?
If we wanted to do … instead, how could … be used?
Can you find a way to …?
If … was altered, what do you predict would happen?

[Adapted from Chalmers & Fuller (1995); Kauffman (1997)]
Where do you go to get help?

Course Coordinator for your Unit of Study is:

Name: ........................................................................................................................

Contact details: .........................................................................................................

Institute for Teaching and Learning’s Tutorials and Tutoring web site

Faculty of Science Tutor Training web site
http://science.uniserve.edu.au/courses/tutortraining/

Institute for Teaching and Learning Resource Room
http://www.itl.usyd.edu.au/community/resources.htm

References


Where do your students go to get help?


Student Services http://www.usyd.edu.au/su/stuserv/

Level 7, Education Building (A35)

Accommodation Service 9351 3312
Casual Employment Service 9351 8714
Child Care Information Officer 9351 5667
Counselling Service 9351 2228
Disability Services 9351 4554
Financial Assistance Office 9351 2416

Learning Centre http://www.usyd.edu.au/lc/

Level 7, Education Building (A35)
9351 3853


Level 4, Carslaw Building (F07)
9351 4061