FACULTY OF SCIENCE
SCHOOL OF MATHEMATICS AND STATISTICS

SESSIONAL TUTORS

INFORMATION HANDBOOK

Last updated July 27, 2017

Contents

General information

Welcome to the School of Mathematics and Statistics.

Taking tutorials in Mathematics or Statistics is regarded by the School as a very important part of our teaching and we expect a high standard of teaching and a careful and thoughtful presentation of the material.

Tutorials commence in Week 2 and conclude at the end of Week 13. (Lectures conclude at the end of Week 12.)

We expect all tutors to have carefully prepared the tutorial material for each week and be prepared to answer any student questions. You should think carefully about how to present the ideas in a simple but logically correct manner, and to set our your solutions so that they become good models for students to emulate.

Our courses are generally rather solid and contain quite a deal of material. It is therefore important for you to keep up to date and use the tutorial time wisely. This does not require you to do every question in the booklet, but rather to concentrate on key problems and use the time efficiently.

All tutors must be aware that they are not allowed to engage in **private tuition** in ANY Mathematics subject. This ruling was the result of the 2011 Enterprise Agreement, so if you are unhappy with this you should contact your Union.

Your main contact persons are:

A/Prof. Norman Wildberger RC-4108, 9385 7098, `n.wildberger@unsw.edu.au`

Jonathan Kress RC-3703, 9385 7055, `j.kress@unsw.edu.au`

Chi Mak RC-4073, Ph. 9385 7073, email `chi.mak@unsw.edu.au`

Student Services, Ms. Markie Lugton RC-3072, 9385 7011, `m.lugton@unsw.edu.au`

OR the course convenor.

Please note that some of the detail which follows is relevant only to those tutoring First Year Mathematics. If you are tutoring a higher year subject, or MATH1041, then you will need to check some of the details with your course convenor.

House keeping

Ms. Markie Lugton will be looking after your contracts and payment forms. She will discuss with you in detail what you need to do.

Pleae make sure that you set up and check your UNSW email address as soon as possible because that is our main means of communication. The School Office can also arrange Library Access, and access to the photocopy room. Please use the photocopiers sparingly. If you are handing out solutions to class tests, then try to

fit solutions onto one page. You will also receive information via the pigeonholes in the photocopy room. The School has weekly research seminars which you are welcome to attend.

We have set aside RC-4066 to be used by casual tutors who do not have an office here in the School. Please feel free to make use of it.

You are very welcome to make use of the tea/coffee facilities in the School of Mathematics and Statistics Tea Room. Each Wednesday at 10.45am there is a School morning tea which you are most welcome to attend.

All teaching rooms are supposed to be opened each day. If you are teaching in a room that happens to be locked, contact the School Office.

Administration

In addition to teaching, we also require a certain amount of important administration to be performed by the tutors.

Course packs

A course pack for the subject you are tutoring is available from the Mail Room on Level 3. (Just under the long bench as you walk in or to the left of the pigeonholes). You will receive in your pigeonhole a provisional roll for each class that you are teaching. Tutorials begin in Week 2 and continue until the end of Week 13. The lectures conclude in Week 12.

At the start of each session you should be clear about the assessment pattern for the course and your role in this.

Roll Books

Before the first tutorial you will receive a list of students who are enrolled in your class. For Weeks 2 and 3 use this to record attendence. Do NOT glue or copy this list into your roll. Before the tutorial in Week 4 you will receive an updated list enlarged to the correct size to stick directly into your roll. You must NOT add students to your roll unless they have a note from the Office.

In most classes you will be required to mark the roll each week. This is best done at the end of the tutorial, since students may arrive late. It also provides a deterent for those who may wish to leave early.

In courses where you mark tests you should keep a record of the test marks in the roll. The first year rolls are to be handed in to Student Services at the end of the Session.

Class Tests and Marks

In most First Year subjects, there will be class tests held in tutorials or in a special class test class. The dates for the tests are in the course information booklet relevant to the given course.

Students are generally **NOT** allowed to use calculators in these tests.

If calculators or other aids are allowed, then you will be explicitly told this by the course authority.

Note that

- Students must take each test **in their own class**.
- Normal exam conditions apply in tests i.e. there should be no talking or communicating between students and no additional material should be on the desk unless explicitly permitted. Note that in most cases students will need to provide their own paper. Students should have their student card (or other clear identification) on the desk. If a student does not have this, you should not be too draconian.

Each test has (at least) two versions for any one time slot. As you will have more than one class, make sure you give the correct test to the class by checking the tutorial code. Papers should be distributed alternately around the room. The question papers will be placed in your pigeon hole at least one day before the test.

Please check before the test that you have the correct tutorial code and a sufficient number of scripts. If you can't find your papers contact the lecturer in charge, course authority or Student Services.

Marks should be entered in the roll book in correctly labelled columns in the correct order as indicated for that subject. Marks must be **integer** marks (if necessary round **up**). The mark of **zero** is only for those who have submitted work but have been awarded zero. To the student who does not do a test or assignment award **A** (Absent). If the student shows you a medical certificate for the correct date record **M** (medical).

In addition to keeping a complete roll book of marks, you will also need to enter marks directly into our Student Record System (SRS).

This is done via the Web Portal.

On any page in the School of Mathematics and Statistics Website, click on the *Staff Intranet* link at the very bottom of the page and then log in using your zID and zPass. Then click on "Mark Entry" tile. You may need to log in again. You will then see a list of classes you are teaching and the tasks that will need marks entered. Clicking on a task will take you to the mark entry page for that task. Fill in the

marks and click "Submit information". If you need to change a mark, you can return to this page at a later time and enter just the changed mark.

Marks should be entered this way as soon as possible as we want students to be able to check their marks online as early as possible so that errors can be corrected sooner rather than later.

Consultation

All full time staff teaching first year tutorials are asked to give a 1 hour consultation time for each 2 tutorials taken. A roster of those available is displayed various notice boards and the School's website. Students seeking extra help could be directed there. If sessional staff wish to tell their students when and where they are available for extra help they can but are **not** obliged to.

Mathematics Drop-in Centre

The School of Mathematics and Statistics runs a Mathematics Drop-in Centre for students needing extra assistance. The location is adjacent to the Main Office on level 3 of the Red Centre and the opening hours are clearly listed there. If you have students who are struggling, they can be referred there. The service is **free** for all students and is paid for by the School.

Tutorial evaluation

You can opt to have an on-line evaluation form available for your class. See Julie Hebblewhite (RC-3088) before the end of session to arrange for this to happen. Results of this survey will be available only to you via myUNSW. You may, if you wish, show your survey results to your mentor. It is advisable that you do (at least) one per Semester over a twelve month period.

Preparation

Tutorials are paid on the assumption of 3 hours work: 2 hours of preparation, 1 hour delivery. In some cases, marking is also expected of tutors. This is paid separately. As part of the preparation, tutors should be familiar with the notation and approach currently used in the School.

Returning work

Marked work is normally returned to students at the **next** tutorial. Student work should **NOT** be left in boxes in the corridors nor should you give a student's work to another student. If the work is still unclaimed at the end of the session it can be given to Student Services.

Help and advice

We strongly encourage everyone, of however many years experience, to attend someone else's tutorial and as a courtesy check with the tutor beforehand. For new tutors this will be mandatory. Each new tutor will have a mentor to assist and advise them.

For questions regarding administrative details or subject matter see the lecturer in charge.

Visits

Each new tutor will have (at least) one of their classes visited by a member of staff, generally the person appointed to mentor them through their first teaching session with us. This will happen as early as possible in the session, normally about Week 4 or 5. In almost all cases one visit is sufficient. The purpose of this is to offer advice to you on your teaching; to point out the good features of your work and to offer some helful suggestions as to how you could improve. You should view this visit as a positive opportunity to develop as a teacher.

Complaints

Very occasionally students will make a complaint. They do this by visiting the First Year Director (RC-3073). If there are several complaints about a tutor, the Director of First Year Studies, who will discuss it with the tutor concerned. He may then ask another staff member to visit the tutorial.

Absence

If you are going to miss a tutorial please contact Student Services (RC-3090, Ph. 9385 7011) as soon as possible and arrangements will be made for the class to be covered. If there is no-one at Student Services, then try the Main Office or Jonathan Kress (RC-7073, `j.kress@unsw.edu,au`). Second year Statistics tutors should contact their course convenor.

On no account should tutors make arrangements between themselves to cover classes. **All** tutor substitutions must go through Student Services.

Tests and Evacuations

The School's policy on what to do in case an evacuation emergency interrupts a class in which a test is to be sat, or is being sat, is outlined below.

Basic rules:

If a test can go ahead, it will.

All students will be treated equally and fairly as far as possible – those whose tests are disrupted and those whose tests are not. Once started, a test will never be resumed after an evacuation.
Rooms must be evacuated if an alert sounds, and as quickly as possible. Note that in all cases, a student who fails to show (or return) for the test will be marked absent.

What may happen:

The Course Authority will make a decision on exactly what action will be taken if the test is disrupted by an emergency. What the Course Authority decides is up to them, and is not limited to the possibilities suggested below.

If the emergency happens before the test papers are handed out and there is time to fit in the test before the end of the class, it will usually go ahead. We allow five minutes to return to the classroom after the all-clear.

Even if there is not enough time to complete the test, the tutorial or lab will be continued after the all-clear.

If there is not enough time to complete the test, it may be rescheduled to the following class. If rescheduling is not practical for some reason, the Course Authority may decide that the test is to be scrapped, and all students who attended the test will be given an M as if they were absent sick. Marks in other tests will then be scaled up to compensate. Alternatively, if enough time (typically 50%) has passed for an assessment to be made on what has been done, the Course Authority may instruct tutors to mark the work that was done and, to compensate for the lost time, scale up the mark in that test to a maximum of whatever the original maximum mark was. If there are only a few minutes left in the test, then the Course Authority may decide to ignore the interruption and the test will be marked as if the emergency

had not happened.

Computing

In some courses students may have an on-line computing test and/or a laboratory computing test. These may be printed out and, after marking, given to the relevant tutors to distribute. In some statistics courses you the tutor may be asked to mark the lab test. You will be given detailed information regarding this later in the session.

Computer Tutorials

Some of the tutorials in our School (particularly in MATH1041 and in some other Statistics Courses) are held in the computer labs. Computer tutorials are held for a variety of reasons but usually to explore concepts from lectures (like confidence intervals) or for data analysis. Computer classes pose their own particular challenges, compared to a more usual black board and chalk tutorial, but they can be particularly satisfying because most students genuinely engage with the tutorial material and there is an opportunity to talk to each student about their work. In the course surveys for MATH1041, for example, students often cite the computer labs as the best part of the course and comment that they learn a great deal from them.

Most of our computer labs are well equipped with whiteboard, overhead projector, microphone, and the facility to demonstrate using the computer and projection onto the screen at the front of the class. If you do not know how to access the equipment or the account, then ask! **Please turn off the projector when you finish your class.** Students all have their own computer accounts. Details of how students set their passwords may change from year to year.

- The lab will have been booked for your tutorial. If the class does not fill the room you may allow other students to work at computers in the room if they do so quietly. Ask them to move to the back and ask your class to log on to the computers in the front of the room.
- I do not allow other students to work in the lab during computer tests, and in this case there is a "sandwich board" to put up advising other students to go elsewhere. **Please put the "sandwich board" away when your class finishes!**
- As with any tutorial, be well prepared beforehand. Work through the exercises yourself.

- You may have particular instructions from the course convenor, in which case follow them!
- Do not just sit at the front in case someone wishes to ask you a question. Be active! Sometimes, particularly at the start of session, it seems natural to demonstrate something first to start the class, but otherwise I usually let the students get started on their own, encouraging them to help each other. I walk around the class having a word with every student to establish how things are going in the course and in this tutorial. If many people are having trouble with the same thing I go back to the front and give a short demonstration, but otherwise I keep on round the room engaging with each student or group of students. I find I usually get round the whole class twice in the hour. If a student has nothing to ask me or to comment then I might look at their screen and ask a question eg "'Is that what you expected?", " How would you describe that graph?", " Do you think it is plausible that that sample came from a normal distribution?", " You have got this result and your friend has got that result.. they are different.. is that ok? did you expect them to be the same or different?". Encourage the students to explore the capabilites of whatever package they are using.

Tutorial exercises

You will need to look carefully at the course pack and tutorial problems for your course.

Tutorials

Tutorials play a vital role in effective teaching in the School.

Tutorials should provide an essential opportunity to achieve a number of important educational goals.

1. Summarise and explain lecture material
2. Answer students' questions
3. Go through solutions to problems based on the lecture material
4. Clarify ideas and sort out any problems of understanding which students may have
5. Relate current material to earlier material or concepts
6. Encourage student interest in the material

7. Encourage and provide opportunities for students to suggest different ways of tackling problems

8. Show students some related sideline which is relevent and interesting

Not all of the above are relevant in all tutorials. There is more than one way to run a tutorial. If your course convenor wishes the tutorial to be run in a different way, they will let you know. However, in the School of Mathematics and Statistics, it is expected that tutors will be engaged in active instruction.

1. Summarise and explain lecture material

This does not mean 'give another lecture' and may not be appropriate in every tutorial.

It can however be useful to quickly summarise relevant theorems or write up a formula which will be used in solving the problems you are about to look at.

Depending on the arrangement of boards, it can be useful to do this on a 'side board' which will be left up during (part of) the tutorial to refer to when needed.

I find it useful to link important theorems to some sort of diagram (if possible) or analogy which will help students to remember it.

Be imaginative!

It may occassionally be the case that the tutorial problems start at a level that is too high for your particular group. In such a case you might do a simple example illustrating the theorem or formula before starting on the tutorial problems.

2. Answer students' questions

You should always ask the students if **they** have any questions on earlier material or on the material about to be covered, and you can then incorporate their questions into the tutorial. You may find that a particular student (who may for example be misplaced) wants you to do lots of difficult (starred or H) problems while the rest of the class is struggling with the easy ones. You will have to use your own judgement as to how many such problems (if any) you do, but remember that you should be aiming at the whole class and not just the brightest (or most persistent) student(s). You can always suggest to the student that they come and see you later for the harder problems. On the other hand if you have a particularly good class who are clearly coping well with the ordinary problems then there is no reason why you should not also do **some** of the harder ones. It does take some experience to know where to pitch the level.

You ought to try to involve the whole class in the lesson as much as possible and in particular, encouraging students to ask questions during the tutorial. I have

had some excellent questions asked by students that have been a springboard for elucidating lots of ideas. The important thing is however that you give positive feedback to students asking questions "That is a really interesting question, thanks for that...", or "I was hoping someone would ask that...". You should carefully listen to the student's question. I have visited tutorials where a student has asked a very pertinent question and either been ignored or misunderstood by the tutor. Needless to say, the student asked no more questions during the tutorial. One must also be patient with the students, as, if you are really encouraging them to ask questions, then you are bound to get a number of silly questions, perhaps even asking what you thought you had just explained. Never put a student down for asking a stupid question or they will never ask another question again.

3. Go through solutions to problems based on the lecture material

This is the main purpose of the tutorial. In most first year subjects you are given a fair degree of advice as to which problems to do (but keep in mind that you should also attempt to answer any student questions as well). You should make sure you are using the same notation as the lecturer to avoid confusing the students. Solutions should be mathematically correct (without being pedantic) and clearly set out. **Remember that *you* are one of the few models the student has for how to set out mathematics and so if you set out your solution sloppily on the board you can't blame the students for doing the same.**

You should also remember that what you write will be copied by the student and that will be the main link for them (reading it later on) with what was actually **said** in the tutorial. So, if you give an absolutely brilliant exposition of a problem but don't somehow capture the main points of it (in words) on the board then chances are it was a waste of time, since most students will forget it by the end of the week.

Needless to say, you should be prepared for the tutorial, especially if it's the first time you've taught the course, or it's been a long while since last teaching it. I recall some years ago running into a very clever young lecturer who went off to a MATH1081 class unprepared. (He thought he was clever enough to do the problems at sight). He returned somewhat 'shell-shocked'. Even for very clever people, one's IQ drops about 20 points when standing in front of a class and having a mental blank. Even with mathematics that is well known you should check the arithmetic before hand, so that if you make a simple error you can spot it quickly.

Preparation does **not** simply mean knowing how to do the problems and getting the correct answers. That is the **easy** part. Thinking about how to explain the material well, pointing out interrelationships, finding useful analogies etc. also takes some time to prepare.

Your solutions should be as simple and straightforward as possible. Don't overly burden the students (especially in lower years) with unnecessarily complicated nota-

tion. You are there to 'shed light', not show off. I visited a tutorial once where the tutor took 20 minutes to find the range of $f(x) = \sqrt{9 - x^2}$ for a first year class. His method was to prove that the range was a subset of the interval $(-\infty, 3]$ and also a subset of the interval $[0, \infty)$. No diagram was drawn!, just boardfulls of abstruse inequalities.

Needless to say, you should always use diagrams and diagrammatic aids in teaching. As well as clarifying ideas they also help students to learn and remember.

You should also feel free to alter slightly the tutorial problems if you think it will help the student's understanding. For example, in MATH1131 Algebra one is asked to find a formula for $\sin 7\theta$ and $\cos 7\theta$. I would probably do $\sin 6\theta$ and $\cos 6\theta$ or $\sin 5\theta$ and $\cos 5\theta$ since nothing is gained by doing the more complicated problem, **and** in fact it just wastes time.

4. Clarify ideas and sort out any problems of understanding which students may have

This aspect is intimately related to the above. It includes making sure that the students correctly remember (and correctly learnt!) mathematics from school. Students may ask you about some aspect or problem covered in lectures, which may or may not be important. I often find that students in MATH1081 come into the first or second tutorial worried about Russell's Paradox (which was covered in lectures) and so I can either go over it or assure them that it is not essential to understand it to pass the course (depending on the ability of the class). I always ask my Calculus students if it is true that, $f'(x_0) = 0$ and $f''(x_0) = 0 \Rightarrow f$ has an inflection point at x_0. This is a common mis-conception. Students often confuse a theorem with its converse, or try to blindly apply $\tan^{-1}\left(\frac{y}{x}\right)$ to find arguments of complex numbers without worrying what quadrant the number is in. These and (countless) other points need to be clarified and if necessary misconceptions corrected **during** the tutorial and a good tutor has to be aware of them and use the appropriate opportunity to toss them in.

Lectures may (and should) contain material that is of interest but which may not be central or even essential for all students to know in detail. The tutorial should assist students to identify which parts of the lecture material is essential for students to thoroughly understand.

You can further assist student learning by using 'what if...' type questions. For example, when looking at integrals it can be very useful to show them what happens to the integral if we simply change the sign of one of the terms. There are many instances where altering the given problem slightly leads to a completely different solution or possibly even to no solution at all.

5. Relate current material to earlier material or concepts

The wonderful thing about mathematics is the incredible interplay between the ideas and we should be constantly stressing this in tutorials. Students learn best when new ideas are related back to ones they are already familiar with, whether from school or earlier in the course. Much of the algebra course in first year in second session consists in giving new interpretations to row reducing matrices which they learnt in first session. The *ML* theorem in Complex Analysis is simply a generalisation of the geometrically obvious fact in the real plane that $\left|\int_a^b f(x)\,dx\right| \leq (b-a)\max_{x\in[a,b]}|f(x)|$. Relating the direction vector of a line in 2-dimensions to the gradient of the line is another example. Students often do NOT make connections between ideas and often do not see how the new ideas relate to what they already know. Some (far too many in fact) try to learn mathematics by memorising methods without much understanding of what is really going on. We can discourage this by emphasising and pointing out for them the important ideas and how they connect.

In other words, tutorials should not just be 'problem solving classes' where the tutor just presents a solution.

You will probably make the point that all this **should** be done in lectures. That is true, but lectures have to cover a lot of material (so of course do tutorials) but even if these connections are made in lectures, repeating them in tutorials emphasises them and makes sure the students take them seriously. Moreover, students tend to copy in lectures rather than listen and often miss the important points that are being verbally explained.

6. Encourage student interest in the material

This can be hard to do especially when the students are doing a Maths course compulsorally, eg. MATH1131. Nonetheless, if the tutor looks bored, and presents the material as though they were pulling teeth then they can hardly blame the students for feeling the same. I have almost always found that enthusiasm is contagious in a tutorial. If I show interest in what I am teaching then the students (eventually) respond.

There are many ways to get students interested. I mentioned the knight's tour problem once in my MATH1081 class and the following day one of the students came in with a half page of notes he had made on the problem after going to the library. With his permission, I made copies of this and gave it to the rest of the class. Some students do read mathematical books beyond the syllabus and we should be encouraging this, especially when they show a willingness to share some of it. The internet is a great source of information. Encourage interested students to google a formula or topic!

There are many opportunities to point out practical applications of the mathematics

that is being looked at. You don't have to go into great detail, but students will be more highly motivated if they can see that further down the track all this maths is going to have some very important point. Maths should not be presented as a series of meaningless methods and examples which have to be learnt to pass the exam. It is not hard to give glimpses of the 'big picture' along the way and give some point to the occassionally dull piece of work in hand. I often try to whet the students' appetite by mentioning (briefly) how the current material will be used later to answer some bigger problem.

7. Encourage and provide opportunities for students to suggest ways of tackling problems

The tutorial should not be a monologue given by the tutor. Neither should it be like a sociology tutorial where students spend most of the time giving their (limited) opinions. The maths tutorial should be interactive, with the tutor leading, guiding and initiating discussion and asking lots of **directed** questions to the students.

Students do from time to time come up with novel and sometimes very interesting ways to do problems. This should be encouraged. I have visited tutorials where a student volunteered an excellent way of tackling a problem, but the tutor either completely ignored what was said or told the student that they had to do it the tutor's way. This was very poor teaching and very poor mathematics. If the student volunteers a 'bad method', i.e. one that will lead us up the garden path or will not apply to other similar problems, then we ought (in most cases) to show them the consequences of their suggestion rather than just dismissing them out of hand.

Whenever a student volunteers an answer or suggestion we should always make the student feel good about doing so. Negative feedback or completely ignoring a student response is not going to encourage students to respond.

8. Show students some related sideline which is relevent and interesting

This should not be done very often, especially in first year classes, but there are definitely times when it should be.

When doing problems on recursion in MATH1081, I always take in my *Towers of Hanoi* game which takes no more than 5 minutes to explain but which is very helpful in understanding recursion and certainly captures student interest. A simpler example might be to take in some MAPLE printouts of curve sketching for example, or using a MAPLE printout to show how the Fourier Series in a given tutorial exercise actually approximates the function. Such things should be interesting and instructive without being time consuming. I do occasionally (time permitting) wander off the track a bit to show students some related and interesting idea which may not be directly in the syllabus. This can be very useful with a very good class.

Troubleshooting

The points and comments made in the earlier sections are all idealised and work well in a *perfect world*. Unfortunately, the real world is not always as rosy.

We are going to have to deal with the day to day problems of teaching and in this section I want to give a few ideas and tips on how to cope (as best we can) with the reality of teaching students in large theatres or classes, some of whom do not speak English very well, are shy and reserved, overwhelmed by their workload, or perhaps (in very few cases) sarcastically unpleasant or immature.

If problems do occur, it is very important that you do not let them get out of hand. Talk to your assigned mentor if you are a new tutor, otherwise you can always speak (confidentially) to Peter Brown or some other member of staff. Problems that are not properly dealt with do not go away.

Being Personable

On the whole our students are very polite and friendly individuals. They respond well when they feel that they are being treated as adults and if their lecturers and tutors appear to respect them and are genuinely concerned for their intellectual welfare. They do not respond well if they are made to feel very stupid or inferior, or if they feel that their teachers regard them as nuisances who interfere with their research time.

At the beginning of every session I ask (and write) in my roll book each student's first name, and try to use this when I call the roll. I recall a student once commented that I was the first tutor she had had who did this, which I found rather disappointing. It is a simple way of letting the student know that you regard them as individuals rather than a number.

On the other hand, I personally do not think it is useful to become too familiar with students. We are there in a professional role as educators and should maintain a degree of distance between ourselves and our students. It is often difficult to get the right balance between being seen to be caring and being at the same time detached. If we are too chummy with the students there is always the possibility of their trying to take advantage of this to get extra marks or have their test or assignment postponed a week because they are not ready for it yet etc. Students should, I believe, see us as 'an authority and in authority'. That is, they should have a healthy respect for us as scholars and also a respect for our position as their teachers.

Clashes With Students

Situations do arise from time to time where there is a clash between a student and a lecturer. This may occur over a range of things. They may not like the way a test or assignment has been marked and wish to argue with you over it. The students may talk in class, throw paper aeroplanes in lectures or be otherwise objectionable. You may believe they have cheated in a test or (more commonly) have copied in an assignment.

Altercations between lecturers and students are fairly rare but you should be prepared for them and have thought out carefully how to deal with them.

Firstly, it is important that you state clearly (in writing if appropriate) exactly what you expect from the class. I try to do this in a positive way. For example, in lectures I suggest to them that they should aim to take in about 80% of the material in the lecture and that this will save them a lot of time. Hence, of course, they will need to listen carefully and quietly to the lecture.

The same logic goes for behaviour in class. I generally (especially in large first year classes) make it clear in the first lecture exactly what kinds of behaviour I expect from the students. I point out to them that I will carefully prepare my lectures to make them as interesting and understandable as I can and I will also do my best to make the presentation lively. In return I expect from them that they will pay close attention to what I say and not talk. If they are unhappy with some aspect of my lectures I encourage them to come and tell me, so that I can improve whatever needs to be changed.

We cannot necessarily blame a group of people for their actions if we have not explained clearly what we expect from them.

When problems such as talking in lectures or paper aeroplanes etc. occur, the worst thing to do is to ignore them. If students start talking in my lecture then I am very distressed about it. If I ignore the problem it does NOT go away, it simply gets worse. Ignoring it is not the easy way out because the problem will have to be dealt with at some time and may be harder to sort out down the track. It's a bit like weeding the garden. If you don't pull out the weeds when they are small, not only do they grow bigger, but they seed and produce more weeds and getting rid of them becomes more of a task.

I try to avoid confrontational language when dealing with problems. That is, I don't scream out 'SHUT UP YOU BASTARDS', which simply has the effect of making the students' behaviour worse. Rather, I use what psychologists call 'I statements'. (It is not as corny as it sounds). I point out that if **I** am going to try to give an interesting lecture then **I** need to concentrate fairly hard on what **I** am saying. **I** cannot do this if they are talking. If they prefer, I can simply put up overheads for them to copy down and say nothing at all during the lecture, but that if they want

a verbal presentation then **I** have to have their complete attention.

I say all this calmly, but firmly and make sure they are all listening to me. Paper aeroplanes can be a little harder to deal with. I once had one thrown in a large first year class. I walked up to it, picked it up and commented dryly that the person who designed this should pay much closer attention to my lecture so that they could then understand some of the more complicated aspects of aerodynamics and thus design a much better one. This worked on that occasion, but I must say that I find paper aeroplanes extremely insulting and would probably in future say something to that effect, again using 'I statements'.

In a tutorial situation I will use a slightly different approach which is nonetheless non-confrontational. If a student is talking in my tutorial, I politely ask them what part of the solution I have just put on the board they have failed to understand. This usually does the trick.

As I have stated before, most of our students are pretty reasonable and affable people and using the techniques I have mentioned above usually works most of the time. In the event that they fail, then sometimes stronger measures may be needed.

In regard to test or assignment marks, I NEVER engage in unpleasant arguments with students. If I am convinced that my marking was correct or my decision about assignment copying was correct and the student wants to argue with me, then I will say explicitly to the student that I have made my decision and am not prepared to argue about it. If they wish to take the matter further then I will direct them to the appropriate authority. In the case of a tutorial I would refer them to the lecturer in charge and if I am the lecturer in charge then I would refer them to the Head of Department. There is nothing to be gained (except raising your blood pressure) in engaging in a yelling match with a student.

When it comes to students talking, then if my initial appeals to their better nature fails and they continue to talk after a couple of warnings then I will ask them (politely) to leave. Even this should be couched in non-confrontational language. I would say to them that they are clearly not getting anything out of my class and so they would be better engaging in private study elsewhere. If they are only coming to get their names marked off then I will happily do that so that they can leave.

I do not believe that walking out of a class is a positive move. Apart from being unfair on the vast majority of the class who genuinely want to learn, I would see it is as an admission of complete failure on my part.

In the extremely unlikely event of a student refusing to leave the class, you have the right to demand that student's student card from which you can extract their name and number and refer this information to Head of School for further action. If they refuse to produce this, or give you the information you could then phone for Security to come and remove the student. I do not know of this extreme scenario ever having happened in the School but it is a (remote) possibility which you should

be aware of.

Involving students in the lesson

You go into class determined to involve students and give an interesting and dynamic tutorial (or lecture). You ask the first questions and the silence is deafening. You answer your own question and try again. After about four attempts you decide to give up and give a monologue. This is a typical scenario, especially when you first start teaching. How can you get a response from students? We have a fairly large proportion of students who come from cultures where active verbal participation in class is not the usual practice.

Here are some suggestions to think about. Firstly, you must be careful as to the **type** of question you ask, especially when you are first starting off with a new class. **They** don't know that you are about to give an interesting and dynamic tutorial, if only they would participate. You have to get them into a participatory role and this takes time. (Remember Pavlov's dogs!) Asking 'Now what is our first step in solving this problem?' is probably **not** the best question to begin with. Keep your questions very simple with very simple answers. Students are not going to respond (at least initially) if you ask a question that requires a paragraph to answer.

The second point to make is to let the students know that you really do want an answer. When faced with a class who appear to have had their tongues cut out when I ask them something very simple, I make it known that in **my** tutorial participation is not optional. Done in a jovial way, I generally get some response. Remember that they (especially in first year) may be terrified of you and it is their nervousness not their lack of knowledge that is preventing them from answering. In extreme situations I have also used the roll book to actually select a student to answer, (this tends to loosen a few tongues), or in the case of a tutorial problem which has lots of parts with 'true' or 'false' type answers, one can get the students to answer one by one starting from the back row.

Most importantly, as I have said elsewhere, you must give very positive feedback when they answer.

Our Equity Policy

The School of Mathematics and Statistics aims to provide a safe, supportive and welcoming environment for all students regardless of their race, sex, age, religion, disability, sexual orientation or gender identification. As such, the School strongly supports UNSW's Equity and Diversity Policy in regard to these matters.

The School has established an Equity and Opportunity Committee to oversee these issues and to ensure that we provide a comfortable and safe educational environment

for all.

Through the Student Services Office, we coordinate special provisions for Disability Support Services (DSS) students.The liaison person for DSS students in the School is Markie Lugton, Student Administration Officer (RC-3072, ph: 9385 7011).

We believe that Lesbian, Gay, Bisexual and Transgender students ought to be able to enjoy their time with us without experiencing any sense of alienation or ill-treatment at the hands of either staff or fellow students in the University. The School liaison person for LGBTQI students or staff is Peter Brown, (RC-5106, ph: 9385 7106), while Catherine Greenhill (RC-5015, ph: 9385 7105) and Julie Hebblewhite (Student Services Manager, RC-3088, ph: 9385 7053) are members of the Ally@UNSW network.

Teaching surveys

UNSW has an online system for course and teaching surveys called myExperience. If you would like to survey one or more of your tutorial classes using this system, please see Julie Hebblewhite or Markie Lugton around the middle of the semester to arrange this.

WH&S Policy and Procedures

The School of Mathematics and Statistics aims to provide a safe environment for staff, students and visitors in the school. To this end the school has created an Occupational Health and Safety (WH&S) committee, which has the responsibility of co- ordinating WH&S activities within the school. It must be noted that EVERY member of the school has a responsibility to ensure a safe working environment. The School of Mathematics and Statistics WH&S committee is composed of Appointed and elected representatives from the School. For information on contacting this committee and School WH&S policies, see the School's WH&S webpage `www.maths.unsw.edu.au/staff/occupational-health-and-safety`. Concerns can also be raised at the School Office.

If you are injured or see something that poses a risk, you should fill in a hazard / incident reporting form (available from the UNSW Healt & Safety website `http://safety.unsw.edu.au`), and return the completed form to your supervisor. For academic staff, undergraduate students and all others, your supervisor is the Head of School.

Full information regarding the UNSW WH&S policy and all UNSW WH&S forms can also be found at the UNSW Health & Safety website. Please consult the school's WH&S website at `www.maths.unsw.edu.au/staff/occupational-health-and-safety`

for regular updates to school WH&S policy and procedures.

Emergency and First Aid

Staff are reminded that in the case of an emergency, they should call security on 9385 6666 or 1800 626 003 who will arrange help and emergency services as required. If there is not an emergency, security can be contacted concerning routine matters on x56000. In the case of an emergency, the School of Mathematics and Statistics has designated Floor Wardens to ensure an orderly evacuation of the building. Staff are reminded that in the event of an emergency they should follow all the instructions that they are given and ensure that any students etc. are evacuated in an orderly manner. After exiting the building, all people who were in the building should follow the instructions from the warden and move away to the designated assembly area.

The School of Mathematics and Statistics has a number of staff with First Aid qualifications. There are updated lists near the stairwells in the Red Centre.

Personal Safety

The School is also concerned about the personal safety of staff and students. You can help in this by doing the following:

- If you see someone you do not recognise in a non-public area of the building, ask them who they are and if they need any help.
- If the glass doors in the centre wing are open after 6pm or on weekends, close them.
- If an outside door has been held open after 6pm or on weekends, close it.
- If you are working after 6pm and you would like an escort to your car or the bus stop, you can call security on 9385 6666 to ask for a cycle escort.