

INTRODUCTION — GETTING STARTED

It is all well and good to offer a two quarter sequence on apprentice teaching, but there are things that a teaching assistant should know right away before they can be discussed in detail. So this section is a summary of the most fundamental do's and don't's as well as checklists of things to do before the first class. If the latter have not yet been done, you should take care of them as soon as possible.

Before the first meeting of class

Here is a checklist of some important things that are absolutely necessary. They are particularly important for students with no prior experience as teaching assistants. Copies of this and the other checklists will be made available online.

- Know your teaching assignment, including courses, times and places.
- Go to the classrooms and check them out, including procedures for handling emergencies.
- Locate course/classroom materials and find out where to replenish supplies.
- Contact the primary instructor and continue doing so until you get a response.
- Read all the material on getting started in these notes.
- Know the primary instructors' policies, specifically regarding homework, your responsibilities in connection with grading and examinations, keeping records, attendance, calculators, late or makeup work, office hours and frequency of contact between TAs and primary instructors.
- Get copies of course outlines and related materials.
- Be informed of the duties of various office staff members as they relate to your class.
- Know where to find information on Department policies, your rights and responsibilities as a TA, and guidelines for dealing with problems like discipline or dishonesty.
- Be alert for meetings and announcements, especially those that may come at the last minute.
- Contact faculty and office staff members in authority positions if there are questions that remain unanswered.
- Carefully and thoroughly prepare what you will do on the first day of class.

More detailed comments. Make sure you know exactly where the classrooms for your teaching assignment are located; better yet, look inside them before classes begin. Even if you have already seen the room or walked past it many times, it is a good idea to do so again; there is a great deal of construction activity on campus for a variety of reasons, and there may be temporary or permanent changes in the path need to reach these classrooms. Also, the furnishings and facilities in rooms may have changed. If you think that your classroom is not adequate for some reason please inform the Department's Management Services Officer. Remember that you have some responsibilities if emergencies such as fires or earthquakes take place. Get your textbooks, solutions manuals (if applicable), paper and pencils, *etc.* Normally copying material for classes is reserved for the primary instructor, but this might not hold for specific elementary classes (check with the instructor). Attend ***all*** organizational meetings that are scheduled. If you are a TA, get in touch with the primary instructor and learn about all the policies and procedures to be followed.

In many ways, the most vital portion of preparing for the beginning of a course is your communication with the instructor at the beginning of the course. Some absolutely necessary points to discuss are your teaching responsibilities, your grading responsibilities, your role in

preparing tests, taking attendance, what to do about cheating, any points in the syllabus that are unclear, and future communication with the instructor.

You should take time to familiarize yourself with the entire course, including the notational conventions of the text. These may not seem very well chosen (for example, I have always disliked the terms *concave upward* and *concave downward*), but students will ask questions using this terminology. Any system of notation is confusing for nonmathematically oriented students, and introducing alternative systems is likely to make the situation worse. It might also be worthwhile to locate other texts for the course you are teaching. Such books are often useful sources of additional examples and quiz problems. Many books of this sort can be found in the Department reading room (Surge 277) or the main office (Surge 202).

Frequent sources of concern. Before doing anything for the first time, it is natural for people to worry about things that could go wrong. Here are a few worries that other new teaching assistants have faced and usually overcome.

Bad student reactions. Teaching assistants can be concerned about whether the students will like or respect them. Worrying too much about this can hinder your ability to deal with the subject you are trying to teach. Arriving early and either talking to students informally or listening to their conversation is often useful for learning about student concerns and interests. Although you are in a position of authority, you can still be friendly. Of course, it is more important for students to respect you than like you. The best way for you to do this is to convey an air of professionalism and confidence. After all, you have been appointed to the job because of your abilities, and the students should be made to recognize this fact.

Losing control of the class. Once again, an air of professionalism and confidence is the first step. Careful preparation and anticipation of events go a long way to preventing this problem. Trying too hard to control everything can be counterproductive; it is better to have an agenda beforehand, and invite students to provide some input (for example, ask for specific problems to be worked). Students who know what to expect tend to be more receptive. If you do feel that you are in a situation where you are losing control, **please contact the instructor or someone in authority immediately before you actually do lose control!!**

Loss of student interest. Mathematics tend to be a very dry subject, especially for students who are either not interested in mathematics at all or only interested in the subject as a means to an end. However, if you become anxious about this, there is a good chance that you will become inhibited, and inhibited people are often boring. Keep in mind that you almost certainly have personal experiences and knowledge about mathematics that are worth sharing with your students. Tell them what is interesting to you about the subject (without expecting them to feel the same), give your reasons for feeling this way, and ask your students about what, if anything, in mathematics is interesting to them. People are more interested in a topic when it includes material that addresses their interests.

Fear of making mistakes or inability to answer students' questions. Mistakes are best managed by quick acknowledgment of the error and moving on. You should be adequately prepared to avoid making too many mistakes, but it is unreasonable to expect total perfection. If you are in a situation where you cannot answer a question, it is better to avoid bluffing your way out and to admit you do not know the answer. However, in such cases you usually have a responsibility to get back to the students later with an answer.

Fear of students that are particularly articulate or may appear to know more than you do. Some students may act as if they know the subject better than you do, and some may even have a better knowledge of some particular aspect, but you have been selected to be a teaching assistant on the basis of your knowledge, and you have broader knowledge and experience with the subject than the students. Offering an opportunity for a student to speak before the class can be effective in some cases.

Summary. You are not expected to know it all, you are not expected to do an absolutely perfect job, you should be confident of your abilities, and you should adopt a perspective that makes the job a relatively enjoyable experience for you. If you enjoy what you are doing, the chances are that you will avoid the potential nightmares described above and that the students will also be relatively content.

Specialized suggestions for international teaching assistants. The following is a checklist of potential difficulties for a teaching assistant from another country who has no prior experience with American undergraduate teaching.

- Get in touch with another TA whose background is similar to your own (this is very useful for becoming aware of cultural differences, even for TAs coming from countries that have a great deal in common with the United States).
- Be prepared for differences in student-instructor relationships between your home country and the here.
- Have confidence in the abilities that earned you an appointment as a TA.
- Practice your classroom presentation for the first day, repeatedly if necessary.
- Speak clearly and not too rapidly.
- Be cautious but not intimidated about language use, concentrating on the immediate problem of understanding and being understood in a polite manner (while continuing efforts to bring your own language mastery to the highest level possible).

Objectives of a class session. Before preparing what you are going to say during the first class it is good to be aware of these. Most should be clear to someone who has made it through an undergraduate program. However, being a graduate student and teaching assistant is often pretty demanding, and under such conditions it is easy to lose sight of one's goals. Therefore we shall give a short list of important points.

1. Reinforcement of material covered previously, either in the present course or a prerequisite.
2. Answering questions about homework, examinations or other previous business.
3. [For lectures and Mathematics 5] Explaining new material.
4. Giving and receiving feedback on how well material has been absorbed.
5. Clarifying what is expected from the students.
6. Eliminating misconceptions about the mechanics or substance of the course.
7. Motivating and encouraging students.

In particular, note that *systematically reviewing the "theory" of the course that is covered in lectures is generally NOT an objective of a discussion section.* In the precalculus course (Mathematics 5) some review in connection with coverage of new material is unavoidable, but even in this case the reviewing must stay within bounds.

On the first day of class

There is another checklist for this, so we shall repeat the basic comments at the start of the previous heading (“Before the first meeting of class”): Here is a checklist of some important things that are absolutely necessary. They are particularly important for students with no prior experience as teaching assistants. Copies of this and the other checklists will be made available online.

- Dress moderately (not too casually, not too unusually, but no need to dress too formally).
- Arrive a little early and erase the board if necessary.
- Be confident and approachable but not overly friendly.
- Introduce yourself, confirm the course and section number, and write the introductory course information on the board, including your name, office number, office hours and electronic mail address. Also give the students the author, title and edition of the text and show them a copy.
- ***Pause for questions repeatedly!***
- Distribute any materials passed along to you from the Department or primary instructor.
- Read the statement below on students with disabilities (this is important for legal reasons).
- Explain the course framework, including the primary instructor’s policies that affect students (as communicated before the first day of class) and the purpose of the discussion section as opposed to the lecture (generally answering questions from the lecture including homework, but for Mathematics 5 there is also coverage of new material).
- Consider doing a roll call if you have a class list.
- Describe the content of the course and maybe some motivation for studying the material.
- Start covering the course material for the first day (usually this should occupy about half the class period).
- Refer students with registration questions to the Department Office.

More detailed comments. Remember to check your mailbox before going to teach in case there is any last minute news. It is probably a good idea to dress less casually than you might for a typical day in the class; it isn’t necessary to be dressed for an opening night at the opera, but dressing for a day at the beach may give students misleading impressions that you are not serious about your job or more of a peer than a person in authority (to paraphrase Gilbert Highet, there is a difference between being friendly and being a friend). Get to the classroom early, erase the board, and put down the basic information so students will know they are in the right place. Introduce yourself to the class, writing down your name, office number, office hours, and electronic address. Give them the departmental telephone extension where they can leave messages. Tell students the author, title and edition of the text and hold it up for them to see. Distribute any material either produced by you as the primary instructor or given to you by the primary instructor. Read the following Department statement or something equivalent on students with disabilities (this is a matter of Federal law, and lapses by the Department can have very severe consequences):

*Students who have been certified by the University to be eligible for **academic adjustments** should go to the Special Services office and request the information on how to proceed this term to get these adjustments made in their courses. **This should be done during the first week of classes.** The Director of Disabled Student Services is Marcia Theise Schiffer, the voice telephone extension is **84538**, the fax extension is **84218**, and the electronic mail address for the office is specserv@pop.ucr.edu . **Only** those students who have been certified by the University and who have requested the University to send their*

certification letter to their instructor are eligible for academic adjustments. – Students who are currently undergoing an evaluation process to determine whether they are eligible for academic adjustments are encouraged to find out **now** what procedures they will have to follow when they are certified by requesting the information mentioned above.

Explain the grading system and other major course policies. Tell them what they are expected to do. Pause to ask questions several times during the preceding. If a class list is available, you are encouraged to go over it and ask students to identify themselves. You might also want to encourage students to exchange names and phone numbers with a couple of fellow students (obviously some may already know some fellow students, but this can be a really useful way for students to connect with their peers if they have not already done so). Often students learn the most from interaction with other students outside of class. Some find organized study groups to be extremely valuable, while others find them cumbersome and prefer to work less formally and only with people who are already their friends. Explain to students how they can contact you outside office hours by electronic mail or by leaving a message in your mailbox (tell them where they can drop off messages; the receptionist's desk is a much better choice than directing them to the mailroom that contains the copier and the mailboxes for all the graduate students). You are discouraged from giving your home phone number to your students, for you are not responsible for maintaining a 24 hour hotline for them. If there are no more questions, you are ready to begin the first class session. Quarterly schedules are usually too tight to allow the luxury of a meeting only covering formalities. Some students might come with registration problems. **All** such issues **must** be handled by the Department' s office staff.

Do's and don't's

These are really the most important part of this course sequence, but in the spirit of this introduction we shall list a few of the most important points.

- Budgeting your time is important (in particular, you owe this to yourself!).
- ***Being adequately prepared for class is so basic that it is hard to overemphasize.***
- Arriving on time to class indicates that you are serious about the session you are teaching.
- Potential distractions like cellular phones, pagers and musical alarms are entirely inappropriate under most imaginable circumstances, and they should be turned off during class unless specific permission is given.
- Mailboxes need to be checked regularly (at least every other day).
- Notify someone in authority if you cannot meet a class. In nonemergency situations you have some responsibility for finding a replacement.
- Maintain confidentiality of student data, and follow the rules mandated on the official University grade sheets.
- Cooperate with cases of student disabilities.
- Maintain records carefully and grade consistently with others. Give copies of records to the instructor at least twice during the quarter even if these are not requested.
- Follow office hour policies and be there or find an adequate substitute.
- In courses taught by more than one TA, limit independent handouts to disability cases. In general extra handouts are not encouraged; the instructor is the person with primary responsibility in this regard.
- Don' t make promises or statements that could even possibly contradict the instructor or Department or University rules. If you don' t know the answer, refer students to the appropriate person or office.
- Tutoring for pay in a course you are currently teaching is forbidden by Department policies and University regulations.

On the other hand, TA responsibilities are not meant to be so burdensome that they disrupt academic progress, and you are not expected to be available to students all the time. See someone in authority if your workload seems to be more than you can finish in the hours you are expected to work as a TA.

Further references

Recently the Mathematical Association of America has published a book with the title,

A Handbook for Mathematics Teaching Assistants,

by Thomas Rishel, and a preliminary electronic version of this book is available online at the following site:

<http://www.maa.org/pfdev/tahandbook.html>

Not surprisingly, that book overlaps considerably with these notes, and it contains additional material as well as somewhat different perspectives. References to sections of Rishel' s book will be made throughout the course. The following sections should also be read at this point:

- Introduction
- Types of TA Assignments: Recitation. Lecture, Grading
- Before You Teach: A Checklist
- Day One
- Advice to International TAs: A First Assignment
- Some silly stuff ••• [*really a detailed checklist of everyday things*]