(subject to various public pressures) than at small private ones. This is no laughing matter. Many math instructors will just go along with the chairman’s wishes, simply because it is easier than bucking the tide. Others will stand on their right to autonomy in their own classroom.

This is a tough ethical call, and I cannot tell you what is right. You have to live in your department, with the colleagues and the policies that it has. Probably the best advice I can give is that you should find out what the departmental policies are before you begin to teach. If you think that you are going to have trouble living with the grading policies, then discuss them with departmental honchos and try to work out a position that everyone can live with.

It seems to be an increasingly common occurrence (see [WIE]) for a student to come to the instructor after the course is completely finished and say, “I got an ‘F’ in your course. Could we talk about how to raise my grade?” This is like buying a car, signing the papers, making the down payment, driving the car home, and then coming back a week later to see whether you can renegotiate the sale. It makes no sense.

A grade is supposed to be an evaluation of the work that the student performed during the term. When the grade is given, the work (or lack of it) is a done deal. The very notion that this is a point for haggling is a genuine travesty—it shows a true misunderstanding of the university’s mission.

At a prominent university in St. Louis—not my own—there has developed a new process that is called “grieving”. A student who receives a disappointing grade in a class will say “I’m going to grieve this grade.” There is a dean who is in charge of such matters, the student makes an appointment with that dean, and then the young scholar puts on a dog and pony show to convince said dean that the grade is unfair. Then the dean changes the grade! Without consulting the instructor of the course!! Sadly, the practice of grieving amounts to an institutionalization of the wretched behavior that I described in the last two paragraphs. The institution in question is funded strictly according to its enrollment, and it takes great strides to see that its customers are happy. While I sympathize with the school’s plight, I certainly do not endorse its practices.

2.12 The Syllabus (and the Course Diary)

Every mathematics course should have a syllabus. The teacher should give the course a little thought and planning before classes begin. What is the text? What will be covered? What are the prerequisites? How many exams will there be? How will the grade be determined? What is the instructor’s name, office number, phone number, and office hour?

The syllabus should be in outline form—not paragraph form—and display essential information so that it is easy to find. A sample syllabus follows.


Syllabus for Math 411
Real Analysis

Course Description: This is a rigorous course on the foundations of mathematical analysis. Topics to be covered include set theory, logic, the real number system, sequences and series (both of scalars and of functions), compactness, topology of the reals, approximations, differentiation. We will cover at least the first five chapters of the text.

Course Prerequisites: Calculus and linear algebra.

Instructor: Steven G. Krantz
Office: 103, Cupples I
Phone: (314) 935-6712
FAX: (314) 935-6839

Office Hours: To be announced. Consult the course Web page.

Course Web Page: http://www.math.wustl.edu/~sk/math411

Math Department Office: 100, Cupples I


Class Meeting Times: MWF 1-2

Classroom: 115, Cupples I

Exams: There will be two midterm exams and a final. Exams will be scheduled by the university. Consult the class Web page or the department office for information.

Quizzes: There will be weekly quizzes. Schedule and format to be announced.

Homework: There will be regular homework assignments and these will be graded. Late homework is not permitted. I will drop your two lowest homework grades to allow for missed assignments.

Grading: The components of the course are weighted as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Midterm I</td>
<td>20%</td>
</tr>
<tr>
<td>Midterm II</td>
<td>20%</td>
</tr>
<tr>
<td>Final</td>
<td>35%</td>
</tr>
</tbody>
</table>
CHAPTER 2. PRACTICAL MATTERS

This is a "bare bones" example of a course syllabus. It contains the critical information that should be a subset of any syllabus. Your syllabus may contain more information about the course topics, or about the text, or about homework assignments, or about grading.

It is only courteous to provide students with the information that has been indicated. The syllabus is also a paper trail for your course. Try to stick to your syllabus as much as possible. If a student comes to you in the seventh week and says, "I didn't know that there would be two midterms," or "I didn't know that homework was such a big component of the course," then you can point out that these particulars were explained in the syllabus that you distributed on the first day of class and that has been posted all semester long. The syllabus serves as a sort of contract between you and the class. It keeps you honest and it keeps the students honest.

The syllabus should not be a _magnum opus_. In some large calculus classes, especially when there are several such classes being coordinated, instructors may find it useful to list the topic for every class period, relevant pages from the book, and the homework problems that are assigned for each day. That is fine in its place. For most courses, a syllabus of one or two pages is more than sufficient.

Ideally, the syllabus should be available in a stack outside your door, or perhaps in the undergraduate office, all semester long. If you set up a Web page for the course—and this is an excellent idea—then you should post the syllabus (together with all homework assignments, exam times, solution sets, etc.) there. This practice is just good business, like a restaurant posting its menu or a gas station posting its prices. There is admittedly a certain cachet to being completely disorganized and doing everything by the seat of your pants, but it doesn't pay. You end up wasting a lot of time covering your tracks, you create too many potential opportunities for aggravation, and it leaves students with a bad taste in their mouths.

For the same reason that you should have a course syllabus, I would also recommend that you keep a course diary. This device could be several sheets of paper that you tape inside the front of your copy of the text (and you should tape a copy of the syllabus in the same location), or it could be a separate little notebook that you keep together with your text and your grade book. Any time a student requests a makeup exam, or asks for an extension on an assignment, or whenever anything comes up in connection with the course—put it in the diary! When you and the class decide on a date for the midterm, put it in the diary. If you set up a review session, put it in the diary. If you are going to be out of town, and Professor Veeblefeetzer has agreed to cover for you, put it in the diary. That is to say, make a dated entry with the item that you need to remember. It is even reasonable to put all appointments with your students in the course diary. That way you'll have a record of all transactions pertaining to the course, and you also will be less likely to forget them.
into trouble with your department. The safest policy is not to tutor students at
your institution at all. The point is that you are already being paid a salary by
your school to educate the students at that school. To further accept tutoring
money from the students constitutes double dipping.

Even having to recommend tutors can put you in a position of conflict of
interest. Most math departments maintain a list of qualified people who can
tutor for math courses. This is done as a service for the students, but it is also
done as a service for the faculty. When a student asks you about tutors, send
that student to the departmental office and the official list. It really is the best
policy.

2.19 On Being a TA

Being a Teaching Assistant (TA) provides some experience in being a teacher.
But it does not provide much, and the background that it provides can be mis-
leading.

When you are a graduate TA at a big state university, you are probably not
your own boss. In most cases you work, alongside several other TAs, for some
professor who is delivering lectures to a large audience. On alternate days, the
class will be broken up into smaller "quiz sections" or "problem sessions", and
you will be asked to teach one or more of these. You will also be asked to help
with grading, with other assigned activities, and (primarily) you will be asked
to do what you are told.

Being told what to do lifts a great deal of responsibility from your shoulders.
But this also means that a TA has never really taught. You've had some ex-
perience standing in front of a group, organizing your thoughts, answering questions,
developing blackboard technique, and so forth. But you will have never made
up an exam, written a syllabus, designed a course, given a course grade, or any
of the dozens of other activities that figure significantly in the teaching process.

However, if you have never been a TA (either because in graduate school you
were on a fellowship that had no formal duties attached to it, or perhaps because
you were educated in another country), do not despair. At least you are entering
this profession with possibly fewer prejudices than are held by those who have
stood as a TA before a hostile audience in this country. Perhaps reading this
book will provide you with better information and a better outlook than having
served as a TA under a professor who doesn't even care about good teaching.

Let me put an ameliorative note here. Some professors are well aware of the
down side of being a TA and attempt to compensate for it. They give their TAs
more responsibility. For instance, such a professor might write the first midterm
exam for a class himself and then let the TAs write subsequent midterms (under
close supervision). This is positive psychological reinforcement for the TAs, and
good experience for them as well. Likewise, the TAs can be allowed to set the
curve for grading (under supervision) and to perform the other ordinary functions
of the instructor. The professor is not being lazy here. Rather, he probably has
to expend more effort than if he were doing these tasks solo. But it provides
awfully good experience for the graduate student TA.

At some schools, the TA is more autonomous. It is possible that the TA will be a free-standing teacher, creating his own exams and constructing his own grading system. If this description applies to you, then this section of the book does not. But the rest of the book does, and you may benefit from reading it.

For more information about the day-to-day duties of being a Teaching Assistant, see Section 2.14.

2.20 Advising, Letters of Recommendation, and Graduate School

Of course a substantial amount of your undergraduate teaching duties will consist of classroom contact hours and office hours. But that is not the whole enchilada. If you are a senior member of the department, then you may be asked to help with undergraduate advising. Apart from your official duties as an advisor, students may ask you for advice about their curriculum or about graduate school. And you will be asked to write letters of recommendation. (As you read on, refer to Section 4.9 about Advice and Consent.)

You are well qualified—indeed nobody is better qualified—to give your undergraduate students advice on what courses to take, or on how to prepare for various mathematical careers, or on how to select a graduate program. If a student wants to be an actuary, then one course of action is appropriate. If instead the student wants to be a software engineer then different advice would be the order of the day. Even if the conversation wanders beyond your area of expertise, you can surely direct the student to another faculty member, or to a guidance counselor, who can help. Too many undergraduates get the bulk of their advice from fellow students. Sadly, that advice is often based largely on rumor, innuendo, and misinformation. You really perform a great service when you take the time to provide an undergraduate student with expert advice.

Of course the advice you give students may be no better than what they can glean from their peers if you do not take the trouble to find out what you are talking about. Before you tell students to take this class rather than that, or this flavor of the math major rather than that, or to take an incomplete rather than a drop, find out what the rules are. Become acquainted with the requirements for the math major and minor. What are the rules for drops? For incompletes? What are the mathematics requirements for the physics, engineering, chemistry, and other majors? You can do a lot of damage if you offer advice without knowing whereof you speak.

Most undergraduate students don’t have a clue about graduate school. They don’t know how one gets in, how one pays for it, how long it takes, what it entails, what a Ph.D. is, how a Ph.D. differs from a Masters degree, what is involved in writing a thesis, and so forth. In general, their parents and their friends will know even less than they do. So, again, you perform a great service if you are willing to share your expertise. Once a student knows that he wants to get an advanced degree, he will need some real help in choosing a school
4.1. NON-NATIVE ENGLISH SPEAKERS

I once taught a junior/senior level real analysis course. One student's primary interest was chemistry, but he was studying for an advanced degree in statistics, and this in turn required that he take real analysis. Fine. He was a bright and hard-working student, and I couldn't help but like him. One day I gave a rigorous definition of "continuous function" and he raised his hand and said, "That's not what I think of as a continuous function." A part of me wanted to beat him over the head. But he was coming from a different world, and he had posed a serious comment that demanded a serious answer. I was really on the spot. I had to defend my definition. I certainly learned from this dialogue. And I have, as a result of this experience, become more open to such questions. I would encourage you to do the same.

My message is this: Learn to be patient. Students will ask you to repeat terms. Students will ask you "non-mathematical" questions. Students might seem less able, or less well prepared, than those in your country. But they are bright and they are willing. You must learn to work with them. After you have learned how the American education system works, and what the students are like, you will find that your colleagues are receptive to your thoughts about its shortcomings. Before you have made this acquaintance, you are working in a vacuum and you should keep your own counsel.

In some countries it is the style of the university professor to stand at a lectern in the front of the room and to read the textbook to the class. Questions are considered to be a rude Americanism. An extreme example of a teaching style that is virtually orthogonal to what we Americans know is one that has been attributed to the celebrated Hungarian analyst F. Riesz. He would come to class accompanied by an Assistant Professor and an Associate Professor. The Associate Professor would read Riesz's famous text aloud to the class. The Assistant Professor would write the words on the blackboard. Riesz would stand front and center with his hands clasped behind his back and nod sagely.

My point is that in the United States, for better or for worse, we have our own way of doing things. The style here is to indulge in discourse with the class. Some professors make the discourse largely unilateral. That is, they lecture. Other professors encourage more interchange between the students and the teacher. Reading this book will help you to become acquainted with the traditional methods, and some of the newer methods, of teaching in this country.

4.2 Late Work

Late work is a nagging problem. The easiest solution to the "Can I hand just this one assignment in late?" dilemma is to "Just say 'no.'" But what of the student who has a really good excuse? What if there has been a death in the family or some other crisis that the student cannot avoid?

The trouble with making one exception is that it tends to snowball at an exponential rate to $N$ exceptions. In a large class this can be catastrophic. One possible solution is to tell the students that, when you calculate their cumulative homework grade, you will drop their two worst grades. That means that any student can miss one or two homework assignments with essentially no penalty.
It’s a remarkably simple solution to an otherwise difficult problem. There are a number of other possible answers to the late homework problem. You can downgrade late assignments, or you can assign extra work. You can just forget the missing assignment and base the student’s course grade on the remaining course work. The point is that you should think about this matter in advance, and formulate a policy that you will use consistently. A choice of incorrect policy toward late work could lead to a lot of extra effort and/or aggravation for you. Don’t be afraid to ask a more experienced colleague for help in this matter.

4.3 Cheating

Cheating is a big, and probably unsolvable, problem. Academic dishonesty is demoralizing for the teacher and for the non-cheating students. Honest students react to cheating with emotions that range from outrage to pity to melancholy. What is the point of studying so hard if cheaters can get good grades through skulduggery? And the cheaters’ inflated grades affect the grading curve, which in turn affects everyone. On the whole, cheating is a moral outrage—for both instructor and student alike.

You will find it difficult to deal with the sort of students who cheat, for they may be dishonest with themselves and with others in a number of aspects of their lives. You want to be firm and fair and just all at the same time. But you must deal with them, and you must do so directly and firmly. As with late work and other difficulties, you must have a clear and consistent policy to apply to cheaters. Fortunately (see below), the university may have already formulated such a policy for you.

You may wish to set a moral tone against cheating by making an announcement on the first day of class. For large lectures, this may be especially important. Declare that you consider cheating to be an egregious offense—against yourself, against the other members of the class, and against the university. While you admit to the class that you may not be able to catch all cheaters, you assure the students that anyone caught cheating will be punished to the full extent of the law—including expulsion from the university when appropriate.

Be forewarned: Most American universities have set policies about handling cheaters. You are not free to act as you please when you catch a miscreant. In particular, there are due process procedures set up (to protect the rights of the accused cheater) that you must follow if you wish to punish a cheater. You do not necessarily have the right to tear up the student’s exam, to give the student an “F”, or to mete out other retribution. Check with the director of undergraduate studies in your department to determine the proper course of action when handling a suspected cheater.

One rule of thumb is that you should not be lenient with cheaters. Cheating cuts at the very fiber of what university education is about. When you catch a cheater, you must send a strong message that this behavior is intolerable.

At one Ivy League university, entering students are required to sign an oath that they will adhere to the university’s Honor Code. Part of the honor code is