MATH 10A Methods of Mathematics. Course Syllabus
with Professor Zvezdelina Stankova, Fall 2018

Lec 002 (class # 22079) MWF 10:00 - 11:00am, Stanley 105

Lec 001 (class # 22078) MWF 12:00 - 1:00pm, Valley Life Sciences 2050

Updated 8/21/2018

Contents

1. Instructor and General Information

- **Instructor:** Professor Zvezdelina Stankova (Zvezda)
- **Office:** Evans 713[†]   • **Phone:** (510) 642-3768
- **Tentative office hours** (to be finalized within 2 weeks, changes on bCourses/my webpage):
  - <u>MWF 11:05-11:55am</u> (in "Free Speech Cafe"),
    <u>MW 3-4pm</u> (in Evans 713).
  - There are no individual appointments.
  - Questions will be answered on a first-come-first-serve basis.
  - Administrative questions will take priority during the last 10 minutes of each office hours.
  - If you have an urgent question, you must make time to come in office hours. The common excuse: "I couldn't make it to your office hours because of reason X, and hence I am writing to you an email." will **not** be accepted. If your issue is important, you will make time to come to office hours. Anything that can be resolved in office hours must be resolved in office hours; **not** on email!

[†]How to remember my office number and why come to office hours? Have you carefully read Harry Potter, Book 1?! Vault 713 is a high security vault at Gringotts Wizarding Bank in London, England. It is located hundreds of miles underground and requires a Gringotts goblin to pass its finger along the length of the door, in order for the door to melt away. It hosted the Philosopher's Stone. Conclusion: there must be something very valuable in Evans 713. Fortunately, you won't need such a high security protocol to enter. Come to office hours! ☺

- **Email:** stankova@math.berkeley.edu; ONLY FOR EMERGENCIES!
- **Webpage for ∀ TBA:**
  - bCourses at https://bcourses.berkeley.edu/
  - (occasionally) http://www.math.berkeley.edu/∼stankova/

• **No laptops, phones, or other electronic equipment** can be used during lecture or discussion sections. Electronic devices are distracting not just to the students using them, but they are also detrimental to the class in general. Students who need to use a phone or other electronic device for urgent matters must leave the classroom and use the devices outside of the classroom. Anyone who uses electronic devices during class will be asked to leave the classroom for 20 minutes. The only exceptions are for students with a disability that requires the usage of such equipment in class. Such students must explain the situation to the instructor and to the GSI, and during lecture/section they may sit only in the first 3 rows or in specially designated seats that allow access to students with disabilities. Aids to students with disabilities may also use appropriate electronics during class, after consultation with the instructor/GSI.

2. Enrollment, Section Switching, bCourse Access

2.1. **For enrollment questions:** Jennifer Pinney, Evans 967
- Drop-in office hrs (in person) M-F 10am-12pm, 1-4pm.
- Brief questions may be also emailed to enrollment@math.berkeley.edu. During peak periods, answering questions in person gets priority, instead of lengthy email exchanges with students.
- No access to enrollment: Do **not** ask the instructor or the GSI to switch you to another section or to enroll you in the class. We have no control over enrollment in the class and in sections.

2.2. **For advising questions:** Thomas Brown, Evans 965
- Drop-in advising hrs (in person) M-F 10am-12pm, 1-3pm.
- In-depth advising: please make an appointment with Thomas.

2.3. **To switch discussion sections,** students must go to **https://calcentral.berkeley.edu** The switch will be possible only if there is room in the section.

2.4. **bCourses:** Only officially registered students in the class will gain access to bCourse materials.
As for students **on the wait list**: we will **not** add anyone to the class bCourse until the student:
- Has attended at least a week worth of sections,
- Has written at least one quiz in sections, and
- After receiving the quiz score, then asked the GSI to be added to bCourse.

Until then you need to:
- Ask a classmate to share with your any other materials on bCourses.
- Reasons that you do not know anyone on UCB campus will not be accepted. Make friends!

Follow these instructions precisely, and keep emails to me and the GSIs only for real emergencies.

3. Prerequisites

3.1. **Required:** 3.5 years of high school math, including trigonometry and analytic geometry.

3.2. **Strongly Recommended:** Calculus AB in high school.

4. Discussion Sections

4.1. **Enrollment:** Each student must sign up for a discussion section, meeting TTh.

4.2. **Attendance:** Discussion sections and lectures are mandatory.

5. Textbooks

5.1. **Required:** Stewart/Day–University of California, Berkeley, Math 10 A,B - Methods of Mathematics: Calculus, Statistics and Combinatorics, 9780357113387, 8/3/2018 ©2018. Students need to acquire this custom edition at: http://services.cengagebrain.com/course/site.html?id=2916324

Starting Aug 21 and while awaiting print copies, students can receive free 14-day e-book access:

- By enrolling at: **https://www.webassign.net/wa-auth/class-key/enroll**;
- In "My eBooks" tab, using the class key **cengage 5310 6222**.

5.2. **Recommended:** *"A Decade of the Berkeley Math Circle,"* vol. I-II, edited by Stankova and Rike, MSRI/AMS, for learning proofs and problem-solving techniques.

6. Homework and HW0

6.1. **Assigned/Due:** HW will be posted on bCourses every week, usually right before or after each lecture. Thus, usually there will be 3 HWs per week. These HWs must be completed by students by the following Monday. HWs will be worth 3% of the final grade. HWs will be collected in sections (usually on Tuesdays, unless specified otherwise). Give your HW to a classmate to turn it in if you are going to miss a section (do NOT email it to the GSI). HWs won't be graded. Each HW will be given a score of 0-3 depending on completeness.

- **Absolutely no late HWs** will be accepted, regardless of the reasons.
- **No HW adjustments** will be made for students joining the class late.

6.2. **HW0.** HW0 will also be counted as any other HW. HW0 is the completion of the ALEKS PPL assessment test, about which you should have received an email earlier in the summer. The ALEKS PPL system is designed to help you identify and strengthen areas of knowledge relevant to Berkeley mathematics courses.

- The ALEKS PPL must be completed **by Tuesday, Sept 4, 8am.**
- It will be graded for "completeness": particular scores on it will not be taken into account.
- For questions about UC Berkeley procedures and policies with regards to ALEKS, please contact Milly Farid at millyfarid@berkeley.edu.
- For technical questions about use of ALEKS PPL, please contact ALEKS at https://www.aleks.com/support/form/.

6.3. **If you miss lecture or discussion section:** do NOT e-mail instructor or GSI to ask for missed handouts and announcements. Instead, ask your classmates.

6.4. **Homework solutions:**

- **Posted:** on **bCourses** ordinarily a day or two before the quiz. Do **not** ask for solutions to be posted earlier: you must attempt to do your homework without help from posted solutions.

- **Taken down:** the web in a week or so after being posted; hence make sure that you download them and read them on time. No HW solution files will be sent to students at any time: please, do **not** request them; ask instead your classmates for those missed HW solution files.

7. Reading Assignments

It is the students' responsibility to read carefully and thoroughly the assigned textbook section(s) and review their class notes or other assigned materials after each class. If you miss class, do **not** ask the instructor or the GSI for their notes. Ask your classmates for their notes.

8. QUIZZES

8.1. Total number of quizzes: There will be about 13 quizzes in the discussion sections, given on Tuesdays, whenever the student's section meets.

8.2. Number of quiz scores in final grade: Only the top 10 quiz scores will be taken into account when determining a student's final grade.

8.3. No make-up quizzes: If you miss a discussion section when a quiz is taken, you cannot retake the quiz in another section, and your quiz score will be 0. Thus, when you miss discussion sections (for whatever reasons, including being sick, having a family emergency, etc.), keep in mind that exactly **the top ten** quiz scores will be counted, regardless of your reasons. **No** exceptions will be made to this policy: please, do not bring to me or to your GSI notes to be excused from quizzes. The quizzes will be based on the current or previous HW and class/section problems.

8.4. Purpose of the "Top 10 quizzes": Keep the few times when you might miss quizzes only for true emergencies. The quizzes to be dropped are not intended as a back-up for slacking off, lagging behind the material, or catching up due to unsatisfactory academic performance on previous quizzes. The quizzes that will be dropped are meant to help you in case of an emergency. No further quiz scores will be dropped.

8.5. Joining the course late and quizzes: Again, 10 quiz scores will be used towards the final grade, including some possible 0s if fewer than 10 quizzes have been taken.

8.6. Content and Grading of Quizzes: Ordinarily, each quiz will be graded out of 12 points and will consist of one problem for 10 points and 2 True/False questions, each graded as follows: 1 point for correct answer, 0 for blank, and -1 for incorrect answer. The T/F questions on the quizzes are intended to prepare you for a problem with many T/F questions on each exam. One of the T/F questions on each quiz may be on administrative matters reflected in the syllabus or discussed in lecture or in section. Thus, you must read the syllabus and be updated on any administrative announcements and discussions from lecture and class.

8.7. Cheat Sheet on Quizzes: One page (one side of a regular sheet of paper), hand-written by the students. No copying and pasting of typed text from anywhere, unless the student has a registered disability that allows for typed or other specially prepared texts.

9. EXAMS

9.1. Times of the three exams:

LECTURE 002: 10am - 11am	**LECTURE 001: 12noon - 1pm**
Midterm 1: Monday, Sept 24, in class.	**Midterm 1:** Monday, Sept 24, in class.
Midterm 2: Monday, October 29, in class.	**Midterm 2:** Monday, October 29, in class.
Final exam: Monday, Dec 10, 8am-11am, scheduled campus-wide.	**Final exam:** Friday, Dec 14, 11:30am-2:30pm, scheduled campus-wide.

9.2. No make-up midterms or final exams: Every student must take the midterms and the final exam on these dates and at these times. Do NOT ask to take exams in the other 10A class: this will not be allowed. If you anyways do it, you score will be recorded as 0. (Your exam scores must be weighted against the scores of your own class, and hence such shifts are NOT possible.) Excuses like "I misread the schedule." or "I had an emergency." will not be considered. No exceptions!

9.3. **Scheduling or avoiding conflicts with exams?** Do **not** buy tickets to leave before or to come after an exam: you must be here at the three exams dates above. Do **not** ask for earlier dates for the final exam due to flight reservations or other reasons: the final exams times are assigned campus-wide and there will be no personal exceptions. Do **not** take this class if you have a conflict with any of this exam schedule. (Exceptions noted below.)

9.4. **Exam Content.** A substantial part of the exams will be based on versions of problems from:

- **Homework:** problems, both regular and bonus.
- **Class:** problems, theory, and ideas discussed in class.
- **Quizzes:** quiz problems from random sections.

9.5. **Are the exams comprehensive?**

- **Midterms:** The topics for each midterm exam will be based on the portion of the course between exams. Thus, formally, midterms are **not** comprehensive. Yet, you cannot forget previous material since parts of it may come up in the solutions to midterm problems.

- **The final exam is comprehensive:** Anything covered in the course is fair game.

10. Grading

10.1. **Grading scheme:** Grades are computed by taking:

- 3% HW completion. Each HW is given a score of 0-3 based on completion.
- 12% quizzes (using only the top 10 quiz scores). Quiz medians of all sections in the class will be uniformized at the end. Thus, there is no point of being upset that your section is getting harder quizzes or is being graded harsher: it won't make a difference in the end.
- 25% each midterm.
- 35% final exam.
- It is up to the instructor to decide if some or all of three exams will be rescaled in the end to the same median, so as to give them comparable weights in the final grade.

10.2. **Resurrection final.** The final exam score will override any lower midterm score, if and after all or some of the three exams have been rescaled to the same class median. This means that

- the final exam may count as 60% or 85% instead of 35%.

10.3. **Class curve.** The final letter grades will be based on a curve. Class statistics on the midterms and the final exam will be posted on bCourses.

10.4. **Missing the final exam:** will result in automatic failure of the course, unless valid reasons are provided for requesting an incomplete grade.

11. Special Accommodations

11.1. **Skipping a midterm.** You may skip a midterm (but not the final exam!) due to a conflict with **religious creed**, an **extra-curricular/sports activity**, or a **family/medical emergency**.

- The student must notify the GSI that he/she will be skipping a midterm and explain the reason, so that the GSI does not worry about what happened. No need for a formal documentation.

- The final exam will resurrect the missed midterm. However, this option must be taken only when really necessary. Frivolous skipping a midterm usually leads to a poor final exam outcome.

- It is the student's responsibility to learn the missed material due to the absence.

11.2. **Special Arrangements for Disabled Student Program (DSP) students.**

• If you are a student with **a disability registered by the DSP** on UCB campus and require special arrangements during exams and quizzes, I must be sent the official DSP accommodation by the DSP office at least **14 days (2 weeks)** in advance. We will likely **not** be able to accommodate anyone in less than 14 days and the student will have to take the exam (or quiz) along with everyone else under the regular conditions provided for the class. The earlier we are informed about your DSP status, the easier it is to provide appropriate accommodations for you.

• Do NOT ask to be given special accommodations while promising that in the future you will provide a DSP note. Observe this policy: no exceptions will be made.

11.3. **Taking the final exam "on the road" for athletes.**

• If you have a scheduled athletic competition as a member of an official UCB sports activity during the final exam, you must inform the instructor **at least 14 days prior to the final exam.**

• Final exams "on the road" are not automatically granted: certain conditions must be satisfied and the instructor needs to speak with your coach who will be with you and proctoring the exam. Thus, if you do not inform the instructor at least 14 days prior to the final exam, you will not be granted the privilege of taking the final exams under such special conditions. Take this seriously and act fast and responsibly to ensure that communication has reached the instructor by the deadline.

12. Drop Deadline

The results of the first midterm will likely be known **after** the drop deadline. Do not ask me or the GSIs if we think you are more likely to get, say, B- instead of C+: we will not know. The decision to drop the course will be entirely yours and you will have to make it based on your first several quizzes and the first midterm (if its score is available at that point).

13. Incomplete Grades

13.1. **University policies:** Please, consult the university policies regarding incomplete grades.

13.2. **Reasons for Incomplete:** An Incomplete "I" grade is rarely given. The only justifications for an I grade are:

- **documented serious medical problem,** or
- **a genuine personal/family emergency.**

13.3. **Conditions for giving an incomplete.** When requesting an incomplete, the student must:

- have a passing grade (C- or above) up to that point in the class.
- have completed at least 2/3 of the course work up to that point.
- present a formal document regarding the nature of emergency or the medical problem.

13.4. **Invalid reasons for requesting an incomplete.**

• Falling behind in this course or a heavy work load in other courses are not acceptable reasons for requesting an incomplete.

• If you miss a midterm (for whatever reasons), you will very likely **not** qualify for an incomplete, as your grade before the final exam will include a 0 on that midterm, which will not have been "resurrected" by the final at the time of requesting the incomplete grade.

14. ACADEMIC INTEGRITY

The Mathematics Department, and in particular, the instructor and the GSIs in this course, expect that students in mathematics courses will not engage in cheating or plagiarism. The following is adapted from the Math Dept web page to our course.

14.1. **What does cheating mean?** Broadly speaking, cheating means violating the policies of a course or of the university in order to gain an unfair advantage over fellow students. A particular kind of cheating is plagiarism, which means taking credit for someone else's work. Cheating and plagiarism hurt your fellow students in the short term, they hurt the cheater in the long term, and they will not be tolerated. On exams, the most basic type of cheating is copying off of someone else's paper. Graders easily spot when two exam papers look unusually similar, or have similar (wrong or correct) answers, calculations, ideas, or thought structure, even if written in different words or order of words. Even glancing at someone else's paper to check your answer is cheating. If you write the correct answer to a computational problem without any justification or with a bogus justification leading to that answer, this raises strong suspicions that you cheated, on top of not receiving any credit anyways due to the lack of correct justification.

14.2. **Electronic devices on exams/quizzes.** Electronic devices such as phones, ipads, calculators (electronic, mechanical, or any other type), and other devices, are also not allowed on exams/quizzes (unless explicitly allowed by the instructor), not even to tell the time. There are too many ways to cheat using software and the Internet. Exams are not intended to test your ability to find the answer by any means necessary. The questions might be too easy for that! Rather, exams/quizzes are supposed to test your understanding of the course material, which you will need in order to use math correctly in subsequent courses and in the real world.

14.3. **Expectations on exams, quizzes, and HW.** Exams and quiz papers are expected to be your own work. In this class we encourage collaboration on homework, as it won't be graded or collected; but you are carrying your personal responsibility to learn how to do the HW problems independently so as to be able to solve similar problems on exams and quizzes by yourself. When allowed, if you use proofs or calculations from textbooks or class notes, you need to cite these sources, even if you have rewritten the material in your own words; otherwise it is plagiarism.

14.4. **How to avoid cheating?** It is your responsibility to take reasonable precautions to prevent cheating. In exams, you should sit as far away from other students as the room permits, and hold your exam papers in such a way that they are not easily visible to other students.

14.5. **What to do in a case of cheating?** If you suspect that other students are cheating, you should immediately inform the instructor and/or your GSIs. Students may be cheating in ways that the instructor/GSI has never even heard of (unlikely, but possible). Even if you don't mention any names, the sooner you inform the instructor/GSI what is going on, the sooner they can take measures to put a stop to it. You can further report any cheating at:

http://sa.berkeley.edu/conduct/reporting/academic

14.6. **Resolution to cheating.** If you are suspected of cheating, the instructor may pursue a variety of actions depending on the particular nature of the incident. If you accept responsibility for academic misconduct, the matter can often be resolved between you and the instructor with possible academic sanctions ranging from losing points on an exam/quiz to failing the class, and a report will be sent to the Mathematics Department and/or Center for Student Conduct. It is not necessary for the instructor to determine whether the student(s) has a passing knowledge of the relevant factual material. It is understood that any student who knowingly aids in cheating is as guilty as the cheating student.

In serious incidents, or if you maintain that you are not responsible for academic misconduct, the instructor has the freedom and responsibility to impose any academic sanctions within the course that she deems appropriate, and the case will very likely be forwarded to the Center for Student Conduct. In such a case, more stringent actions (e.g., dismissing the student from the university) can be initiated by the Office of Student Conduct.

14.7. **Conclusion.** We hope that the above clarifications will help prevent cheating. If you have any questions about the rules or expectations, you should not hesitate to ask the instructor/GSI, or the vice chair for undergraduate affairs in the Mathematics Department.

15. Disrupted Examinations

The following has been adapted from the Mathematics Department advising materials to faculty.

15.1. **State law during fire alarms.** Over the years, several final examinations have been disrupted by false fire alarms. State law requires that buildings must be evacuated during alarms, and the police department suggests that classes do so in an orderly, efficient fashion so that students can return to work as quickly as possible.

15.2. **Penalties for false alarms.** A false alarm is a misdemeanor, with a penalty of up to $1,000 in fines and up to one year in county jail. If the alarm results in bodily injury (e.g., someone has a heart attack), a false alarm can be a felony with a penalty up to $5,000 in fines and three years in state prison.

15.3. **When an alarm does sound during an exam,** we will use the following guidelines:

• If an alarm is pulled after the exam has been going on for more than 2/3 of the overall allotted time, the exam will be considered complete and the grading scale will be adjusted accordingly at the discretion of the instructor.

• If an alarm has been pulled after the exam has been going on for less than 15 minutes, we will evacuate and the students will leave the exams on their desks. After the alarm has been taken care of, the students will proceed back to the classroom and resume the exam. Anyone found carrying his/her exam outside the classroom will not be allowed to continue the exam, and the instructor will be given the freedom to decide how and whether to grade this student's exam.

• During an evacuation, the instructor and the GSIs will visibly monitor the students to cut down on casual exchanges of exam information.

• For exams that have been going on between 15 minutes and less than 2/3 of the total allotted time, the students will leave their papers in the classroom and evacuate. It will be up to the instructor to decide if there is enough time to resume the exam or to reschedule it.

16. More Learning Resources

16.1. **Student Learning Center:** MATH 98 Adjunct Sessions for MATH 10A.

• Time and place: MWF 11-12 for LEC 002 (10-11am)
                     MWF 1-2, MWF 4-5 for LEC 001 (12-1pm)

• Description: Adjunct for Math 10A is a 1-unit course offered by the Student Learning Center taken in conjunction with Math 10A that integrates academic content from Math 10A with study strategies, exam preparation and critical reading techniques. We provide worksheets, practice quizzes, and review assignments designed to improve students' problem-solving ability, test-taking skills, and study strategies in order to enhance engagement and performance in Math 10A.

• If you are interested in enrolling in the Adjunct class you must attend the first week and contact **Andrea Nguyen: anguyen1@berkeley.edu** by theday of the first meeting.

16.2. **Piazza.** We will open a piazza site for MATH 10A for fall 2018.

• The instructor will not moderate piazza. One GSI per class will be assigned to loosely monitor the piazza site. Other GSIs may occasionally check but are not obligated nor should be expected to verify or moderate the content of the posts on piazza.

• The piazza site is meant only for students enrolled in the course, and the topics discussed must be restricted to the content or logistics of the course.

• While we will disable the ability for students to post anonymously to instructors, we do not wish that to dissuade you from feeling comfortable asking any honest and relevant question.

• Any posting of links or references on how to obtain unauthorized or pirated copies of the textbook or other copyrighted materials directly violates the course syllabus about plagiarism. Posting such content is illegal, and any student who does so faces academic and other sanctions.

17. Questions

17.1. **Whom to Ask?** Please, refer to the following list for whom to contact when you have questions regarding the course. Contacting the wrong people will simply result in redirecting you to the appropriate contact person, and thus, will waste your and our time. GSIs are instructed **not** to answer any questions outside of their realm of expertise as listed below.

#	Type of Questions	Person to Ask	When and How
1	enrollment and section placement	Jennifer Pinney Evans 967	M-F 10am-12pm, 1-4pm
2	advising questions	Thomas Brown, Evans 965	M-F 10am-12pm, 1-3pm
3	HW, quiz and exam scores	the student's GSI	office hours
4	missed handouts and announcements	classmates	
5	emergencies, administrative questions not addressed elsewhere	professor	office hours
6	only emergencies that are not caused by you and cannot be resolved in office hours	professor	e-mail, phone
7	math questions	GSIs, professor	sections, office hours

17.2. **Email is only for emergencies!** The professor will not answer any math or grading policy questions on e-mail: **professor's e-mail is only for emergencies!**

• "Emergencies" are urgent and important situations that are **not** caused by a student's procrastination, negligence, or disorganization.

• An "emergency" email is **no longer than 5 lines**! In an emergency, one can't write a lot!

• **No attachments can be emailed** to the professor, unless a prior agreement between professor and student has been reached after discussing the issue and the professor has requested more information in the form of an attachment.

17.3. **No repeats.** Any questions addressed in this handout or answered in lectures/sections will not be answered on e-mail or otherwise. For any missed information: ask your classmates.

17.4. **For final exam room and time assignment:** check the UCB final exam schedule on the web; do not send e-mail to professor or GSIs.

18. GSIs Contact Information: To be updated on Homepage of bCourses

	LEC 002, 10-11am	Email	Office	Office Hours
1	Jackson Van Dyke	jacksontvandyke@berkeley.edu	TBA	M 2-3, Th 4-5
2	Ke Liu	liuke126@berkeley.edu	TBA	MF 4-5
3	Sareum Kim	sareum@berkeley.edu	TBA	M 5-6, F 3-4
4	Tristan Hull	jth242@berkeley.edu	Evans 842	T 12-2
5	Yirong Zhen	yirongzhen@berkeley.edu	TBA	F 9-10, 5-6
	LEC 001, 12-1pm	**Email**	**Office**	**Office Hours**
1	Aaron Scherf	aaron_scherf@berkeley.edu	TBA	Th 8-10
2	Harry Main-Luu	hailuu89@berkeley.edu	TBA	W 1-3
3	Kaushiki Priyam	kaushiki_priyam@berkeley.edu	South Hall Co-lab fl.1	W 4-6
4	Pen Long	penlong@berkeley.edu	TBA	T 2-4
5	Tahsin Saffat	tahsin_saffat@berkely.edu	Evans 852	MF 1-2
6	Teddy Zhu	tdz@berkeley.edu	Evans 1085	TTh 11-12
7	Valerie Green	vmgreen@berkeley.edu	TBA	MW 9-10
8	Zishen Cheng	zcheng7@berkeley.edu	TBA	T 4-6

• Any student is **welcome to visit** any GSI (from either class) with math questions. The GSI's from the same class and instructor's office hours do not overlap, and hence there are lots of office hours during the week when one can get answers to questions. You do **not** have to come to the instructor's office hours with math questions: all GSIs are qualified to answer math questions related to the course.

• Direct admin. questions (not answered in class) **in person** to your GSI or the instructor.

• **Reserve email for emergencies only!** "Emergencies" are urgent and important situations that are **not** caused by a student's procrastination, negligence, or disorganization. Yes, this is repeated, as a number of students ignore this and send all sorts of routine or non-emergency emails that can be resolved in office hours.

• **Be organized, responsible, and hard-working:** these traits will take you half of the way to performing well and getting a lot out of this course.

19. Tentative Plan of the Course

Week 1: Set notation. Functions. Inverses. Limits of sequences and functions
Week 2: Continuity. Introduction of derivatives. Rules for differentiation
Week 3: Applications of derivatives: Implicit differentiation. Graphs. Optimization
Week 4: L'Hôpital's rule. Taylor polynomials. Antiderivatives. Areas and Riemann sums
Week 5: The definite integral. Fundamental Theorem of Calculus
Week 6: Substitution Rule for definite and indefinite integrals. Integration by parts
Week 7: Numerical integration. Improper integrals. Recursion equations
Week 8: Diff. equations. Exponential/logistic models. Modifications. Linear 1st-order ODEs
Week 9: Nonlinear separable ODEs. Partial fractions. Second-order linear ODE
Week 10: Direction fields. Euler's method
Week 11: Euler's Formula. Introduction to matrix algebra. Matrix multiplication
Week 12: Inverses of matrices. Determinants. Solving systems of linear equations
Week 13: Gaussian elimination. Eigenvalues and eigenvectors. Linear systems of ODEs
Week 14: Reviews for Final Exam
Week 15: Final Exam