MATH 10B Methods of Mathematics Course Syllabus
with Professor Zvezdelina Stankova, Spring 2020

Lec 001 (class #20257) MWF 1:10 - 2:00pm, Stanley 105
Lec 002 (class #20258) MWF 2:10 - 3:00pm, Stanley 105

Updated 1/15/2020

Contents

1 Instructor and General Information

- **Instructor:** Professor Zvezdelina Stankova (Zvezda)
- **Office:** Evans 713[2]   • **Phone:** (510) 642-3768
- **Tentative office hours** (to be finalized within 2 weeks, changes on bCourses/my webpage):
- <u>MWF 12:00-12:55pm</u> (in "Yali's Cafe", Stanley Hall); <u>MW 3:00-4:00pm</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!
- **Email:** stankova@math.berkeley.edu; ONLY FOR EMERGENCIES!
- **Webpage for ∀ Course Announcements:**
    - bCourses at https://bcourses.berkeley.edu/
    - (just basics) http://www.math.berkeley.edu/∼stankova/

2 Electronics Policy in Class

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 using electronic devices during class will be asked to leave the classroom for 20 min.
- 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.

3 Enrollment, Section Switching, bCourse Access

3.1 For enrollment questions

Jennifer Sixt, Evans 967

- Drop-in office hrs (in person) M-F 9:30-12pm, 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.

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[2]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!

• 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. 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.

3.2 For advising questions

Drop-in advising hrs (in person):

• Thomas Brown, Evans 965: M-F 10am-12pm, 1-5pm, 510-643-9292.

3.3 bCourses and Joining the Class Late

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.

Joining the class late and asking on email "How can I catch up with the class?" is not appropriate and you will not get a response on email. You must come to OH in person with such questions. However, keep in my that we will not drop more quizzes or HWs for students joining the class late.

4 Prerequisites

4.1 Required

• 3.5 years of high school math, including trigonometry and analytic geometry.

• Calculus AB in high school or MATH 10B.

• Even though MATH 10B precedes MATH 10B and is very useful in understanding MATH 10B material, due to the split of the curriculum between 10B and 10B, one does not need, strictly speaking, to have passed MATH 10B in order to enroll MATH 10B. In such a case, however, at least prior Calculus AB in high school will be needed to do well in MATH 10B, as well as a lot of motivation and dedication to the class.

5 Discussion Sections

5.1 Enrollment

Each student must sign up for a discussion section, meeting TTh.

5.2 Attendance

Discussion sections and lectures are mandatory.

6 Textbooks

6.1 Required

• Stewart/Day–UC Berkeley, BioCalculus – Math 10 A,B - Methods of Mathematics: Calculus, Statistics and Combinatorics, 9780357113387, 8/3/2018 ©2018 (custom edition).

• Rosen–UC Berkeley: Discrete Mathematics, 9781260836530. This is a custom edition.

6.2 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.

7 Homework

7.1 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. The T/F questions in HWs will be launched on Webwork, submitted and graded there.

• **Absolutely no late HWs** will be accepted, regardless of the reasons. After the deadline, the solutions are posted on the internet, and hence it makes no sense for us to collect late HWs. Finally, each HW is graded on "completion," not "correctness", and is worth about 0.08% (that is, 0.0008) of the final grade. This is a most generous HW policy. It will not be broken for any reason. Keep this in mind when you ask to submit a late HW and when your request is turned down.

• **No HW adjustments** will be made for students joining the class late.

7.2 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.

7.3 Homework Solutions

• **Posted:** on **bCourses** ordinarily after the deadline for HW submission. Do **not** ask for solutions to be posted earlier: you must attempt to do your homework without help from posted solutions.

• **Taken down:** from 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.

8 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.

9 Quizzes

9.1 Total Number and Days of Quizzes

There will be about 13 or 14 quizzes in the sections, given on Tuesdays. If special circumstances arise (e.g., power outage, important campus event, etc.) the instructor may occasionally change the quiz date to Thursdays. So, watch out the announcements on bCourses for any rare occasional changes in quiz date and definitely do NOT miss Thursday sections for any reason.

9.2 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.

9.3 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.

9.4 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.

9.5 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.

9.6 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 sections.

9.7 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.

10 Exams

10.1 Time and Place of the Three Exams

LEC 002: 1pm - 2pm
Midterm 1: Monday, Feb 24, in class.
Midterm 2: Friday, April 3, in class.
Final exam: Tuesday, May 12, 8:00am-11:00am, scheduled campus-wide.

LEC 002: 2pm - 3pm
Midterm 1: Monday, Feb 24, in class.
Midterm 2: Friday, April 3, in class.
Final exam: Tuesday, May 12, 11:30am-2:30pm, scheduled campus-wide.

10.2 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 10B 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!

10.3 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 are noted in a later section in this syllabus.

10.4 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 lecture and discussion sections.

• **Quizzes:** quiz problems from random sections.

10.5 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 a fair game on the final exam.

11 Grading

11.1 Grading scheme

Grades are computed by taking:

- **3% HW completion.** Each written HW is given a score of 0-9 based on completion and timely submission in Tuesday's sections. The WebWork T/F question section is given a score of 1 if submitted by the deadline of Monday 11:59 pm AND at least half of the questions are correctly answered. Each WebWork HW will be worth about 0.1 of 0.08% (that is, 0.00008). Thus, don't make a big deal of it and don't ask for exceptions due to late submissions or other reasons.

- **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. In fact, you will be better prepared for the final exam by the harder quizzes and your quiz score will not be affected by that.

- **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.

11.2 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% of the final grade.

11.3 Class Curve

- The final letter grades will be based on a curve, which is not pre-determined.

- Class statistics on the midterms and the final exam will be posted on bCourses.

11.4 Missing the Final Exam

Missing the Final Exam will result in automatic failure of the course, unless valid reasons (as per university rules) are provided for requesting an incomplete grade (see below).

12 Special Accommodations

12.1 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 poorfinal exam outcome.

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

12.2 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.

12.3 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 to proctor 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.

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 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).

15 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.

15.1 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.

15.2 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.

15.3 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.

15.4 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.

15.5 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

15.6 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 miscondict, 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.

15.7 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.

16 Disrupted Examinations

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

16.1 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.

16.2 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.

16.3 When an Alarm does Sound during an Exam

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.

17 Conduct Sanctions and Grade Deductions for Illegal Postings

This section concerns what will happen when a student pirates course materials and posts them on-line, including but not limited to coursehero.com, or assists someone else in doing that. Apparently, the problem is pervasive, it encourages plagiarism, and in the long-run it hurts everyone by undermining and jeopardizing their learning process.

Here are the relevant sections from the **University-wide Code of Conduct** and this is what **UCB Student Conduct Committee** will use to apply sanctions to students who have posted course materials on-line or elsewhere without explicit permission from the corresponding instructors:

- **102.23 Course Materials - Selling, preparing, or distributing for any commercial purpose course lecture notes or video or audio recordings of any course unless authorized by the University in advance and explicitly permitted by the course instructor in writing. The unauthorized sale or commercial distribution of course notes or recordings by a student is a violation of this Code whether or not it was the student or someone else who prepared the notes or recordings.**

  Copying for any commercial purpose handouts, readers or other course materials provided by an instructor as part of a University of California course unless authorized by the University in advance and explicitly permitted by the course instructor or the copyright holder in writing (if the instructor is not the copyright holder).

As in other classes on campus, any unauthorized by me postings of any course materials, including but not limited to any handouts, syllabus, bCourse pages, quizzes, discussion worksheets, midterm reviews, exams, presentations, lecture notes, pictures, video, etc., will be:

- **Subject to a letter grade deduction of the final course grade, left entirely to the instructor's discretion, AND**

- **Formally reported to the University Student Conduct Committee.**

I had never felt the need to impose such strict rules until I was given the opportunity to see the damage that such mis-conduct causes to all students in classes on campus and elsewhere.

In case of doubt, before posting any materials related to the course, ask me or your GSIs. As a rule of thumb, anything that I or the GSIs have prepared for the course, anything on the bCourses site, etc., CANNOT be posted on-line. Be advised that there is a simple way to track down who has posted materials.

Finally, no one in the classes can take audio or video, or pictures of the boards or anyone in class, without my explicit permission and without the corresponding DSP accommodation presented to me in advance. Such audio, video, or picture materials are subject to the same rules of non-posting and usage strictly by the corresponding DSP student.

18 More Learning Resources

18.1 Student Learning Center:

MATH 98 Adjunct Sessions for MATH 10B.

- with J. Ferguson, MWF 5-6, Barrows 170

- drop in tutoring hours M-Th 10-4pm:
     https://slc.berkeley.edu/programs/mathematics-and-statistics/drop-tutoring

- Description: MATH 98 Adjunct for Math 10B is a 1-unit course offered by the Student Learning Center and taken in conjunction with Math 10B. MATH 98 integrates academic content from Math 10B with study strategies, exam preparation and critical reading techniques. The provided worksheets, practice quizzes, and review assignments are designed to improve students' problem-solving ability, test-taking skills, and study strategies in order to enhance engagement and performance in MATH 10B.

- All sections are open to any Math 10B student, regardless of which particular lecture they are enrolled in. If you are interested in enrolling in the Adjunct, you must enroll or be on the waiting list of the lecture that the Adjunct course is supporting. In order to enroll, you must attend the first meeting or contact the instructor by the day of the first meeting. The instructor distributes the course number to all students who have shown commitment to the course by the end of the Adjustment Period. This allows you to check out the Adjunct before you fully commit. Please note that enrollment is limited to 25 students, so students must attend the first meeting or contact the instructor by the day of the first meeting.

18.2 No Piazza This Semester for MATH 10B

The MATH 10A-10B students rarely used the piazza site for the past 3 semesters. Thus, it will be a more efficient use of the GSI's time to complete other tasks related to the course.

19 Questions

19.1 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 9:30-12pm, 1-4pm
2	advising questions	Thomas Brown, Evans 965	M-F 10-12pm, 1-5pm
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 OH	professor	e-mail, phone
7	math questions	GSIs, professor	sections, office hours

19.2 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 in Email!** 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.

19.3 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.

19.4 Final Exam Room and Time Assignment

Check the UCB final exam schedule on the web; do not send e-mail to professor or GSIs.

20 GSIs Contact Information and OHs: Updated on bCourses

	Both MATH 10B Classes	Email	Office	Office Hours
1	Andrew Gitlin	andrew_gitlin@berkeley.edu	Evans 848	TF 4-5
2	Arain, Nafisa	nafisaarain@berkeley.edu	TBA	TW 11-12
3	Avadanei, Ovidiu-Neculai	ovidiu_avadanei@berkeley.edu	Evans 852	MW 10-11
4	Bajo, Esme	esme@berkeley.edu	Evans 834	MW 4-5
5	Browning, Thomas	tb1004913@berkeley.edu	TBA	TTh 10-11
6	Di Bonito, Jacopo	jacopo.dibonito@berkeley.edu	Evans 747	TTh 12:30-13:30
7	Elafandi, Jacob	elafandi@berkeley.edu	Evans 836	MF 11-12
8	Lim, Christopher	chris.lim@berkeley.edu	TBA	Th 4-5, F 5-6
9	Stephens, Leah	lsteph24@berkeley.edu	TBA	Th 11-12, F9-10
10	Zhai, Jerry	jerryzhai@berkeley.edu	TBA	M 5-6, Th 3-4

• Any student is **welcome to visit** any GSI (from either class) with math questions. The GSIs' 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.

Turn Over for Tentative Plan of the Course

21 Tentative Plan of the Course

HW 1	The Basics of Counting: Product and Sum Rules. Binary Strings
HW 2	Subtraction Rule, Principle of Inclusion-Exclusion (PIE) for 2 and 3 Sets
HW 3	Pigeonhole Principle (PHP)
HW 4	Permutations, Combinations
HW 5	Binomial Coefficients and Famous Identities
HW 6	More Counting. Balls into Boxes, The 12-Fold Way I: Distinguishable Urns
HW 7	More Counting. Balls into Boxes, The 12-Fold Way II: Indistinguishable Urns
HW 8	Algorithms. Stable Marriage Algorithm
HW 9	Induction I: Introduction, Summations, Geometric Series, Towers of Hanoi
HW 10	Induction II: Recurrence Sequences, Sets, Inequalities, Divisibility, Logic
HW 11	Invariants: Logic, Proofs, Geometric Series, and Creativity. Optional: Monovariants
HW 12	Probability Spaces
HW 13	Conditional Probability
	Midterm 1 (in class)
HW 14	Bayes Theorem
HW 15	Independence
HW 16	Random Variables (RVs)
HW 17	Discrete Probability Distributions I
HW 18	More DPDs II: Hypergeometric and Poisson
HW 19	Expected Value for Discrete PDs
HW 20	Problem Solving with $E(X)$. Variance for Discrete PDs
HW 21	Co-Variance, IIDRVs' Statistics, and Limit Theorems I
HW 22	Examples and Meaning of Limit Theorems II
HW 23	Continuous Random Variables
HW 24	More on PDFs, CDFs; Medians and Examples
HW 25	Median, Mean, and Applications of Continuous RVs
HW 26	Variance, Mode, and More on Continuous RVs
	Midterm 2 (in class)
HW 27	Chebyshev's Inequality vs. Bell-Shaped Predictions
HW 28	Normal Distributions, Sampling and Statistics
HW 29	Estimators and Confidence Intervals
HW 30	Maximum Likelihood Method I: Single Experiment/Measurement
HW 31	Maximum Likelihood Method II: Multiple Measurements
HW 32	Hypothesis Testing I: p-Values, Single Measurement
HW 33	Hypothesis Testing II: Large Samples, Z-Test
HW 34	Hypothesis Testing III: Small Samples, T-Test
HW 35	Hypothesis Testing IV: The Goodness of Fit Test
HW 36	Hypothesis Testing V: Test for Independence
HW 37	Applications of Statistics: Simpson's Paradox. Bayes Theorem
	(optional) Partial Derivatives, Chain Rule, and PDEs
HW 38	Maximum Likelihood Method III: Least Squares, Correlation, and Covariance
	Review I for Final Exam
	Review II for Final Exam
	Review III for Final Exam
	Final Exam (scheduled campus-wide)