

# MATH 53 (CCN 53756) Course Syllabus

Updated 1/20/2016

Spring 2016, TTh 8:10am - 9:30am, Room 155, Dwinelle Hall

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Instructor: Professor Zvezdelina Stankova

Office: Evans 713, Tel: (510) 642-3768

Tentative office hours (to be finalized after the first two weeks of classes): Tue 9:30-10:30am, 3:30-4:30pm, Thur 9:30-10:30am. Changes will be announced on the web.

E-mail: (only for emergencies!) stankova@math.berkeley.edu

Class webpage for all materials: <http://www.math.berkeley.edu/~stankova/>

## Questions on Enrollment and Section Switching:

Thomas Brown, thomasbrown@berkeley.edu, 510-643-9292, Evans 965, 10:30am-12noon or 1-5 pm.

You need to see him in person (not by email!) to resolve enrollment questions. Students who wish to switch sections with open spaces can use the "Switch Section" link in TeleBears. Thomas Brown cannot move students into sections that are full. However, he can often swap students between sections. If two students are willing to swap sections, both students can go to Thomas and he will try to switch them. 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.

Prerequisites: MATH 1A-1B Calculus I-II.

Discussion Sections: Each student will be assigned to a discussion section. The discussion sections, as well as lectures, are mandatory. You must attend your assigned section. Any changes in sections will be handled directly by Thomas Brown (see contact info above).

Textbooks: "*Multivariable Calculus, Math 53 for UC Berkeley, 8th edition* (ISBN-13: 978-1-305-75645-8). This is a special (custom) edition of the textbook, prepared exclusively for the UCB Math Dept. The correct edition is essential for getting the correct homework assignment and class material.

Homework: HW will be posted on the web every week. If you miss lecture,

- **do NOT e-mail instructor or GSI to ask for missed handouts and announcements.**

Instead, ask your classmates. HWs will not be graded or collected but must be done by the following Tuesday. Homework solutions will be ordinarily posted on the web on Tuesdays, a day before the quiz. Do **not** ask for solutions to be posted earlier: you must attempt to do your homework without help from posted solutions. HW solutions will be TAKEN OFF 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.

Quizzes: There will be about 12 quizzes in the discussion sections, usually given on Wednesdays. The top 10 quiz scores will be taken into account when determining a student's final grade.

- **If you miss discussion sections 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 or having a family emergency), 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 TA notes to be excused from quizzes. The quizzes will be based on the current or previous homework assignments.

- **For a student joining the course late: again, 10 quiz scores will be used towards the final grade, including some possible 0s.** Thus, do **not** ask for exceptions to this policy.

In order to avoid varying difficulty of quiz problems and varying grading styles of the GSI's, the mean quiz scores per section will be equalized at the end of the semester across the whole class. Thus, do NOT complain that your GSI is "harsher" or that your quiz problems are "harder" than those in other sections: any differences will be eliminated at the end of the semester.

Exams: There will be

- two in-class midterm exams on **Tuesday, February 23**, and **Tuesday, April 5**.
- a final exam on **Thursday, May 12, 7pm -10pm**.
- **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** buy tickets to leave before or to come after an exam: you must be here at the three exams dates above.

• **Do not take this class if you have conflicts with any of this exam schedule (exceptions noted below).** 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.

Exam Content: A substantial portion of the exams will be **based on homework assignments**.

• **Are exams comprehensive?** The topics for each midterm exam will be based on the portion of the course between exams. Yet, you cannot forget previous material since parts of it may come up in the solutions. The final exam is comprehensive.

Grading: Grades are computed by taking 15% quizzes, 25% each midterm, 35% final. We will count only the top 10 quiz scores, and the final exam score will override any lower midterm score. This means that the final exam may count for 60% or 85% instead of 35%. The final letter grades will be based on a curve.

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

Incomplete grades: Please, consult the university policies regarding incomplete grades. Incomplete "I" grade is rarely given. The only justification for an I grade is a

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

The student also must have a passing grade (C or above) up to the point of being given an incomplete and must have completed at least 2/3 of the course work up to that point. Falling behind in this course or problems with work load in other courses are not acceptable reasons.

Accommodations of Religious Creed and Conflict with Extra-Curricular Activities: Requests to accommodate a student's religious creed or conflicts of extra-curricular activity by scheduling tests or examinations at alternative times (or other accommodations as reasonably established by the instructor) must be in writing (not email) and submitted in person directly to the instructor during office hours: **by January 28, 2016**. No requests will be considered after that date. It is the student's responsibility to inform him/herself about material missed because of an absence, whether or not he/she has been formally excused.

Special Arrangements: If you are a student with a disability registered by the Disabled Student Services (DSS) on UCB campus, and if you require special arrangements during exams, you must provide me with the DSS document and you must contact me via e-mail or in office hours at least

- **10 days prior to the first exam you will need accommodations,**

explaining your circumstances and what special arrangements need to be done. If you do not contact me 10 days in advance, you will have to take the exam along with everyone else and under the regular conditions provided for the class. Do NOT ask to be given special accommodations, promising that in the future you will provide a DSS note. Observe this policy: no exceptions will be made.

Reading Assignments: It is the students' responsibility to read carefully and thoroughly the assigned section(s) from the textbook and review their class notes after each class.

Drop Deadline: The results of the first midterm will likely be known **after** the drop deadline. Do not ask me or the GSIs if I 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.

Questions: Please, refer to the following list for 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.

### Questions and Whom to Ask

| # | Type of Questions                        | Person to Ask           | When and How                |
|---|--|-------------------------|-----------------------------|
| 1 | enrollment and section placement         | Thomas Brown, Evans 965 | office hours                |
| 2 | quiz and exam scores                     | the student's GSI       | office hours                |
| 3 | missed handouts and announcements        | classmates              |                             |
| 4 | admin. questions not addressed elsewhere | professor               | office hours                |
| 5 | math questions                           | GSIs, professor         | sections, office hours      |
| 6 | emergencies only                         | professor               | office hours, e-mail, phone |

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

- Administrative questions which are addressed in this handout or answered in lectures or sessions will not be answered on e-mail or otherwise.

- For any missed information: ask your classmates.

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

GSIs Contact Information → see class website for updates on office hours

| # | Name             | Office Hours                         | Office     | E-mail                    |
|---|------------------|--------------------------------------|------------|---------------------------|
| 1 | Andreas Voellmer | MWF 12-1pm                           | 714 Evans  | voellmer@berkeley.edu     |
| 2 | Christopher Eur  | T 12:30-1:30pm, W 11am-12pm, F 3-4pm | 826 Evans  | chrisweur@berkeley.edu    |
| 3 | Eric R Hallman   | MW 9:30-11am                         | 1058 Evans | ehallman@berkeley.edu     |
| 4 | Kai-Chieh Chen   | MW 3-4:30pm                          | 812 Evans  | kaichiehchen@berkeley.edu |
| 5 | Nima Moini       | Th 10:30-12pm, F 9:30-11am           | 840 Evans  | nima@berkeley.edu         |
| 6 | Yingdi Qin       | M 8-9:30am, F 8-9:30am               | 818 Evans  | qinyd@berkeley.edu        |
| 7 | Andrew Dudzik    | MWTh 1-2pm                           | ?? Evans   | adudzik@berkeley.edu      |
| 8 | Qiaochu Yuan     | MF 11am-12pm, W 4-5pm                | 1056 Evans | qyuan@berkeley.edu        |

### Tentative Plan for the Course

1. Curves defined by parametric equations. Conic sections
2. Polar coordinates. Tangents in cartesian and polar coordinates
3. Quadratic curves and surfaces. Polar, cylindrical, and spherical coordinates
4. Vector-functions and parametric curves
5. Kepler's laws. Functions of several variables
6. Differentiability, Clairaut's Theorem. The Chain rule
7. Gradient. Extrema, classification of critical points
8. Constraint extrema. Finding maximum and minimum values
9. Double integrals. Fubini's Theorem
10. Triple integrals. Change of variables
11. Applications of integration
12. Vector fields. Newton-Leibnitz's Theorem
13. Green's Theorem
14. Curl and divergence. Parametric surfaces and surface integrals
15. Stokes's and Gauss's Theorems and their applications