Math 123: Course Outline and Policies, Fall 2019

1. Lecture and Instructor

   - **Instructor**: Di Fang
   - **Lectures**: Tuesdays and Thursdays, 2:00–3:29pm, 3111 Etcheverry
   - **Office Hours**: <u>Tuesday 3:40–4:39pm and Wednesday 3:00-3:59pm</u>, 843 Evans Hall
   - **Textbook**: *The Qualitative Theory of Ordinary Differential Equations* by Fred Brauer and John A. Nohel.
   - **Email**: difang@berkeley.edu. Please kindly *include Math 123 in the subject line* when emailing about the course.

2. Grading, Exams and Homework

   - **Homework(25%)+Midterm(25%)+Final(50%)**
   - Exams:

     - The midterm will be held on *Oct 15th* during class.

     - The final will be on *Dec 17th, 8:00 - 11:00am*. Exam dates are fixed, and exams cannot be made up.

     - A justified absence from the midterm will result in the midterm grade being replaced by the final grade. *Please ensure your schedule is compatible with these exams at the beginning of the semester.*
   - Homework:

     - Weekly problem sets are posted on the course webpage. Homework is due at the beginning of Tuesday lectures. **Late homework will not be accepted for any reason.** Your *two lowest homework scores will be dropped* from your grade to accommodate illness and other emergency.

     - You are encouraged to discuss homework problems with your peers, however, you *must* write your own solutions. Academic honesty requires that you **declare all the resources** you used on that homework. This includes anyone (student, professor, roommate, etc) that you talked with about the problems, as well as any book or online resource. Failure to do so is considered academic dishonesty.

3. Course Outline

   (a) Review: terminology, techniques and tricks, and the need for theory

   (b) Existence and uniqueness theory,

   (c) Linear systems,

   (d) Stability theory and Lyapunov's method,

(e) Applications and additional topics as time permits, e.g. biological models (flocking), control theory.

4. Expectations for the Instructor

You can expect me to be punctual for class and office hours, to be enthusiastic about the course material, and to be able to provide help and advice about the course. I will reply to email quickly (within 24 hours during weekdays), and return homework promptly (typically in one week). As I expect students to have a diverse set of backgrounds, you can expect me to make adjustments to the course to ensure the needs of the class are met. I encourage you to contact me with feedback about the course if you feel changes would be helpful — while this may seem intimidating, in my experience it is an interesting and helpful discussion for both of us.

5. Expectations for Students

Math 123 is an upper-division mathematics course, and it will be assumed you have experience in writing proofs. The clarity and rigour of your proofs will be a major component of your grade. Understanding, absorbing, and presenting mathematics is a skill learned by practice and active engagement. With this in mind, please ask questions (in class or otherwise) when they arise.

As a matter of courtesy, please refrain from using electronics (except taking notes on tablets) during lectures. Similarly, if you arrive late, please minimize the disturbance as you find a seat. In general, I expect you to value the time of those around you by helping to create a participatory, respectful class.

If you must use your phone, laptop, etc. ensure you are at the *back* of the room to avoid creating a visual distraction. If you require an exception to this policy please let me know in advance.

During exams, any instances of academic dishonesty will result in failure of the course. This includes copying from other students, or allowing other students to copy from you.

6. Other

Please let me know if aspects of my instruction or course design create disability related barriers so that we can discuss solutions. If you need special accommodations during exams, ensure that DSP contacts me on your behalf as soon as possible during the first three weeks. Last-minute arrangements are unlikely to be possible.

Incomplete grades are very unlikely to be given. Please see `https://math.berkeley.edu/~gbergman/ug.hndts/I_info.html`, where George Bergman gives a description of the purpose incomplete grades serve.

The syllabus is up to change. If any change happens, I will let you know!

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[1]I would like to acknowledge that this course outline borrows from similar documents prepared by Tyler Helmuth, Yan Zhang and David Steinberg.