MATH UN1201, SECTIONS 3 AND 4

Calculus III, Spring 2018

1. Essentials

Meeting time:
• Section 3: MW 11:40am – 12:55pm, 203 Mathematics building
• Section 4: MW 1:10pm – 2:25pm, 203 Mathematics building

Instructor: Shrenik Shah

Office: 505 Math

Email: s.shah@columbia.edu

Webpage: https://www.math.columbia.edu/~snshah/teachingS18.html

Office hours: Mondays 4:30 – 6pm, Wednesdays 2:25-3:55pm.

Book: James Stewart, Calculus: Early Transcendentals, 8th edition

Teaching Assistants:

The graduate TA is Zhechi Cheng, zcheng@math.columbia.edu. Help room: Thursdays 1-4pm.

The undergraduate TAs are:

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact</th>
<th>Help room hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felipe Fritsch</td>
<td><a href="mailto:fpf2106@columbia.edu">fpf2106@columbia.edu</a></td>
<td>Wednesdays 4-6pm</td>
</tr>
<tr>
<td>Sean Jung</td>
<td><a href="mailto:ssj2134@columbia.edu">ssj2134@columbia.edu</a></td>
<td>Tuesdays 4-6pm</td>
</tr>
<tr>
<td>Lina Tian</td>
<td><a href="mailto:yt2511@columbia.edu">yt2511@columbia.edu</a></td>
<td>Tuesdays 4-6pm</td>
</tr>
<tr>
<td>Jason Wang</td>
<td><a href="mailto:yw2941@columbia.edu">yw2941@columbia.edu</a></td>
<td>Tuesdays 10am-noon</td>
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2. Overview

Welcome to Calculus III! The topics you will be learning about this semester are
• vectors and the geometry of space (Sections 10.1, 10.3, 10.5, 15.7, 15.8, and Chapter 12),
• vector functions (Chapter 13),
• functions of several variables and partial derivatives (Chapter 14), and
• complex numbers (Appendix H).
The prerequisite material for this course is covered in Calculus I. Familiarity with the material of Calculus II is helpful but not essential. Please let me know if you have any questions regarding whether this is the right course for you.

3. Resources

Many find calculus to be a challenging subject, so I strongly encourage you to make use of the resources at Columbia and beyond that may help you learn the essential ideas of the course, including

- the Columbia (406 Math) and Barnard (333 Milbank) Help Rooms, for which the weekly schedules can be found at: http://www.math.columbia.edu/general-information/help-rooms/
- my office hours, either at the times above or, if you have a conflict, you may schedule an appointment instead
- Columbia tutoring services, information about which can be found at: http://www.math.columbia.edu/general-information/tutoring-services/
- online resources, including for instance Khan Academy: https://www.khanacademy.org/math/multivariable-calculus

If you would like to either

- ask me a question about the course material, or
- give me feedback about my teaching, the textbook, or anything else,

I have set up a completely anonymous form.

For questions/answers about the course material that may be helpful to all students, I will post them (possibly edited) in the FAQ section on my webpage (without names).

4. Grading and exam policies

Overview: Assessment in the course will be based primarily on two midterm exams and one final. There will also be weekly homework assignments, which will contribute to the grade as well.

Grade breakdown:
- Midterms: 20% each
- Final exam: 40%
- Homework: 20%

The grade distribution will be consistent between the different Calculus III sections.

Midterms: Two in-class exams, 75 minutes long.
(1) February 14 (Wednesday): Covers sections 10.3, 10.5, 15.7, 15.8, and all of chapter 12
(2) April 4 (Wednesday): Covers all of chapter 13, sections 14.1-5, and appendix H (complex numbers)

Final: The final exam time is tentatively scheduled for:
(1) Section 3 (MW 11:40am-12:55pm): May 4 (Friday), 9:10am-noon.
(2) Section 4 (MW 1:10-2:25pm): May 7 (Monday), 1:10am-4pm.
If there is a conflict with a final exam in a different course, please let me know well in advance.

**Exam policies:** No electronic devices or study aids/notes of any kind are allowed on the exams. (Calculators are *not* allowed.)

*There are no make-up midterm exams in any cases.* If exceptional circumstances arise (family emergency or sickness), let me know as soon as possible so an arrangement can be made. In these situations, the remaining midterm and the final exam will be worth more (30% and 50% of the grade, respectively) to absorb the weight of the missed exam. You will need to provide a letter from the dean for all missed exams.

5. **Homework policies**

**Submission:** Your homework solutions should be dropped in the section mailbox, which may be found outside 410 Math, by 8 pm on the due date, usually Thursday. *Clearly print your name and UNI and staple all pages of your assignment.* It is logistically impossible to track down assignments that have become separated or are missing a name.

**Assignment information:** Assigned problems will be posted on the course webpage.

**Questions:** Each week I will indicate the point person to direct any email queries regarding the homeworks.

**Dropped homeworks:** The lowest two grades of all assignments will be dropped.

**Late homeworks:** With the exception of extremely exceptional circumstances (such as sickness for three consecutive weeks), *no late homework will be accepted.*

**Collaboration:** You may verbally discuss homework problems, including the answers, with other students, but

- you must list all your collaborators at the top of your assignment and
- you must never see another student’s written solutions and must write up your own solutions independently in your own words

This policy will be strictly enforced.

6. **Integrity**

Please read the Faculty Statement on Academic Integrity.

The vast majority of students handle their coursework with integrity. Academic dishonesty devalues the learning process and ruins the atmosphere of the course for all students. There is a zero tolerance policy for academic dishonesty in this course. All instances of academic dishonesty will be punished and turned over to Columbia’s Office of Student Conduct and Community Standards (SCCS).
If you are struggling in the course or are stressed about/scrambling to prepare for an upcoming exam, discuss it with me rather than resorting to cheating.

7. Special accommodations for students with disabilities

In order to receive disability-related academic accommodations, students must first be registered with the Disability Services (DS). More information on the DS registration process is available online. Registered students must present an accommodation letter to the professor before exam or other accommodations can be provided. Students who have, or think they may have, a disability should contact DS promptly for a confidential discussion.

8. Schedule

The following is a tentative schedule. The contents of each class may also vary slightly during the semester. Please read the relevant book sections before classes.

As mentioned above, all homework is due at 8 pm in the course mailbox outside Math 410.

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<thead>
<tr>
<th>Date</th>
<th>Book sections</th>
<th>Homework</th>
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<tbody>
<tr>
<td>Jan 17</td>
<td>12.1, 10.3, 15.7, 15.8</td>
<td>HW 1: due Th 1/25</td>
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<td>Jan 22, 24</td>
<td>12.2, 12.3</td>
<td>HW 2: due Th 2/1</td>
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<td>Jan 29, 31</td>
<td>12.4, 12.5</td>
<td>HW 3: due Th 2/8</td>
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<tr>
<td>Feb 5, 7</td>
<td>10.5, 12.6</td>
<td>HW 4: due Tu 2/13</td>
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<td>Feb 12, 14</td>
<td>review; Midterm 1</td>
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<td>Feb 19, 21</td>
<td>13.1, 13.2</td>
<td>HW 5: due Th 3/1</td>
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<td>Feb 26, 28</td>
<td>13.3, 13.4</td>
<td>HW 6: due Th 3/8</td>
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<tr>
<td>Mar 5, 7</td>
<td>14.1, 14.2</td>
<td>HW 7: due Th 3/22</td>
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<tr>
<td>Mar 19, 21</td>
<td>14.3, 14.4</td>
<td>HW 8: due Th 3/29</td>
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<tr>
<td>Mar 26, 28</td>
<td>14.5, Appendix H</td>
<td>HW 9: due Tu 4/3</td>
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<tr>
<td>Apr 2, 4</td>
<td>review; Midterm 2</td>
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<tr>
<td>Apr 9, 11</td>
<td>14.6, 14.7</td>
<td>HW 10: due Th 4/19</td>
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<td>Apr 16, 18</td>
<td>14.7, 14.8</td>
<td>HW 11: due Th 4/26</td>
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<td>Apr 23, 25</td>
<td>14.8, review I</td>
<td>Review HW 12 (ungraded)</td>
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<td>Apr 30</td>
<td>review II</td>
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<td>May 4 or 7</td>
<td>Final (location TBA)</td>
<td>(covers the whole semester, with an emphasis on 14.5-8)</td>
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