Course Profile for Calculus IV (vv216)

September 11, 2017

1 Course Information

Lecturer: Zach McKenzie
E-mail: zachiri.mckenzie@sjtu.edu.cn
Room: 409
Lectures: Tuesdays and Thursdays 10:00am-11:40am, and Mondays of every odd week 4:00pm-5:40pm in E3-101
Office Hours: Thursdays 1pm- 3pm in 409
Teaching Assistant: See CANVAS for the contact details of the TA
Recitation Classes: The teaching assistant will lead weekly recitation classes beginning in the second week. Students are expected to attend this recitation class.

2 Grading Policy

Assignments worth 25%: Assignments will be given in the form of problem sets, and may require extra reading and the use of mathematical software. A penalty of 20% per week late will apply to assignments that are submitted after the due date.

Exams worth 75%: There will be two midterm exams worth 25% each and a final exam worth 25%.

3 Textbook and Syllabus

Textbook: "Differential Equations: An Introduction to Modern Methods and Applications", by James Brannan and William Boyce, 2015 (3rd edition), Wiley. The second edition of this book is also fine.

Week	Topic	Textbook Sections
1	Introduction and direction fields	1.1-1.3
2	1st order ODEs and modeling	2.1-2.3
3	Existence and uniqueness, autonomous equations	2.4-2.5
4	**National day**	
5, 6	Systems of 2 linear equations	3.2-3.5
	1st midterm exam (week 6)	
7	Intro. to non-linear equations	3.5-3.6
8	2nd order linear equations	4.1-4.3
9	Non-homogeneous linear equations, oscillators	4.4-4.7
10, 11	Laplace transforms	5.1-5.5
	2nd midterm exam (week 10)	
12	DEs with discontinuous and periodic functions	5.6-5.8
13	General linear systems, nonhomogeneous and nonlinear systems	6.1-6.4, 6.6, 7.1-7.2
14	**Final exam**	

Please note that this is just a rough guide that is likely to change over the course of the term.

4 Matlab

Students are strongly encouraged to get acquainted with a computer algebra system and use it to experiment with the topics discussed in the class. Free software for both symbolic and numerical calculations (e.g. Maxima, Octave) are available, along with commercial tools such as Matlab.

Matlab is installed on all computers in the JI Computer Lab. You can also install Matlab on your own computer:

1. Register your name at MathWorks using your sjtu email
2. Download
3. Activate

Detailed instructions can be found at `http://umji.sjtu.edu.cn/its/docs/MATLAB_TAH.pdf`

5 Honour Code

- Academic honesty and trust are important. Students are responsible for familiarising themselves with what is considered as a violation of honour code.
- Assignments are to be solved by each student individually. You are encouraged to discuss assignment problems with other students, but you are advised not to show your written work to others. Copying someone else's work is a very serious violation of the honour code.
- You may read resources on the Internet, such as relevant articles on Wikipedia, Wolfram MathWorld or any other forums, but you are not allowed to post your assignment question online and ask for answers. It is regarded as a violation of the honour code.

- Since it is impossible to list all conceivable instance of honour code violations, the students has the responsibility to always act in a professional manner and to seek clarification from appropriate sources if their or another students conduct is suspected to be in conflict with the intended spirit of the honour code.