

# Vv156 Applied Honours Calculus II

## 1 Introduction

### 1.1 Course Profile

#### 1.1.1 Contact Information

- Instructor:

Jing Liu
- Lectures:

Monday every odd week (8am – 9:40am) in F-410  
Tuesday and Thursday (8am – 9.40am) in F-410
- Office Hours:

Tuesday and Thursday (12pm – 5pm) in Room 204 or by appointment
- Email:

stephen.liu@sjtu.edu.cn
- Teaching Assistant/s:

See Canvas for his/her contact information
- Recitation Classes:

Teaching assistants will lead weekly recitation class, which begins on the second teaching week. Students are expected to attend one recitation class each week.

#### 1.1.2 Grading Policy

- Assignment: 25%

Assignments will be given in the form of problem sets, and may require extra reading and the use of mathematical software.

Assignments will have some bonus questions. Hints and/or solutions to the bonus questions will not be provided.

Bonus can be and only be credited to and between assignments.

Assignments need to be submitted to the correct Vv156 pigeon-hole according to your student I.D. in the JI-building before the beginning of class on the day indicated on the assignment. Please plan your time accordingly, late assignment will be penalised.
- Exam: 75%

There will be two exams:

Midterm Exam	Final
35 %	40%
- For this course, the grade will be curved to achieve a median grade of “**B**”.

### 1.1.3 Textbook and Syllabus

- Textbook:

James STEWART, Calculus (7th edition).

Week	Topics	Textbook Sections
1	<b>Orientation day I</b> <b>Orientation day II</b> <b>Mid-Autumn Festival</b>	
2	Real Numbers and Sets Sequences of Numbers	Appendix A; Ch-11.1;
3	The limit of a sequence The limit of a function Limit laws	Ch-11.1; Ch-2.6; Ch-2.1 ~ 2.2; Ch-2.3 ~ 2.4;
4	<b>National day</b>	
5	Continuity Rates of Change Derivatives	Ch-2.5; Ch-2.7; Ch-2.8;
6	Techniques of Differentiation	Ch-3.1 ~ 3.6;
7	Mean-Value Theorem Applications of Differentiation I Applications of Differentiation I	Ch-4.1 ~ 4.2; Ch-4.3 ~ 4.4; Ch-4.7 ~ 4.8;
8	<b>Midterm Exam</b>	
9	Integral Fundamental Theorem of Calculus Techniques of Integration	Ch-4.9; Ch-5.1 ~ 5.2; Ch-5.3 ~ 5.4; Ch-5.5; Ch-7.1 ~ 7.4;
10	Applications of Integration I Applications of Integration II	Ch-6.1 ~ 6.5; Ch-8.1 ~ 8.3;
11	Parametric Equations Polar Coordinates Improper Integral	Ch-10.1 ~ 10.2 Ch-10.3 ~ 10.4 Ch-7.8
12	Series Convergence Test	Ch-11.2 Ch-11.3 ~ 11.7
13	Power Series Talyor Series Differential Equations (optional)	Ch-11.8 ~ 11.9 Ch-11.10 ~ 11.11 Ch-9
14	<b>Final Exam</b>	

#### 1.1.4 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.

- What is Matlab?

It is a software used by millions of engineers and scientists worldwide.

- What does it do?

It is designed to help you solve equations and manipulate expressions with minimal programming. It is particularly good at doing matrix operations.

- How to get 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](http://umji.sjtu.edu.cn/its/docs/MATLAB_TAH.pdf)

#### 1.1.5 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 instances of honour code violations, the students have the responsibility to always act in a professional manner and to seek clarification from appropriate sources if their or another student's conduct is suspected to be in conflict with the intended spirit of the honour code.