Math 146, Methods of Applied Mathematics

Fall 2017

Instructor: Flavien Léger
Lecture: MWF 11am–11:50am, Geology Building 4645
Office hours: MW 1pm–2:30pm, MS 7380
Email: flavien@math.ucla.edu

TA: Howard Heaton
Discussions: Th. 11am–11:50am, Geology Building 4645

Course website: https://ccle.ucla.edu/course/view/17F-MATH146-1

We will cover most of Chapters 4 and 5.

Course description: This course will cover several topics of applied mathematics, revolving around calculus of variation and boundary value problems. More specifically you will be introduced to variational problems, Euler–Lagrange equations, Lagrangian mechanics and Hamilton’s equations, Noether theorem, as well as Hilbert spaces and Fourier series. I will include important examples from mechanics, optics and heat transfer.

The covered topics correspond mostly to Chapters 4 and 5 of the textbook.

Grading: Higher grade of the following two schemes:

<table>
<thead>
<tr>
<th>Scheme 1</th>
<th>Scheme 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework: 10%</td>
<td>Homework: 10%</td>
</tr>
<tr>
<td>Midterm 1: 25%</td>
<td>Max. of Midterms 1 and 2: 35%</td>
</tr>
<tr>
<td>Midterm 2: 25%</td>
<td></td>
</tr>
<tr>
<td>Final exam: 40%</td>
<td>Final exam: 55%</td>
</tr>
</tbody>
</table>

Exams:

- Midterm exam will be held in class on October 25, 2017 and on November 15, 2017.
- No make-up exam will be provided.
- Final exam covering all the material from the course will be held on December 12, 2017, 3pm–6pm.

Homework:

- Homework assignments will be posted on https://ccle.ucla.edu/course/view/17F-MATH146-1. It will be assigned once a week and returned in discussion.
- The two lowest scored homeworks will be dropped. This is to allow for all reasons that homework is not completed on time, including illness, emergencies, officially excused absence from campus, and absence for religious observance.
• No late work will be accepted under any circumstances. Homework is due on Thursday before the discussion ends. For the case of holidays, the due date is moved to the TA’s next office hours.

• First ask your TA questions related to homework problems during his discussions or office hours. Talk to me if TA cannot explain it clearly (usually, this does not happen).

Regrading: If you feel that a mistake was made in grading your midterm exam, you may request a re-grade within one week. Similarly, you must check that your homework and exam scores were input on MyUCLA correctly; if the grades were input incorrectly, you have one week to report this. Be aware that a re-grade means that your exam will be graded from scratch, and it is entirely possible that you will receive a lower score than originally given, if it is decided that the original grade was too high. Final exams are kept for one quarter and recycled soon thereafter.

Class etiquette:

• Turn off your cell phone or other noisy devices before class starts.

• If you arrive late to class, sit in the first seat you can find so as not to disturb others.

• Do not use a laptop or similar type of computer during class.

• Do not eat food during the class.