

12/7/16

The upcoming ISCI 1301 final will take place on Monday Dec.12 at 9 AM in ACW 106. Remember that you are allowed to bring one sheet of paper with you, upon which you can have anything you want (e.g., notes, formulae). You must turn that sheet in w/ your exam. Also, no calculators will be needed.

The test will have two basic parts. The first is composed of T/F questions to test qualitative and conceptual understanding. The second part will deal w/ quantitative problem solving.

Some suggested strategies to prepare for the exam:

- o Re-read the chapters highlighted in the course website. Your text is concise, but well-written. Use it.
- o Practice. Practice! PRACTICE!! You want to be comfortable/practiced w/ regard to problem solving.
- o Look over the problems in the notes.
- o Take a stab at the review problems for the 12/9 review session. Try to solve these on your own. Imagine they are test problems and that you only have your single sheet to help you.
- o Try to solve through problems from the book. There are lots of them, whether at the end of the chapter or those worked as examples in it.
- o Go to the library (Steacie) and find other 1st year physics texts (e.g., Knight, Halliday et al., etc...). Read them. Work through their problems.
- o Think about how problems might be “multi-layered”. That is, different concepts need to come together to tackle a given problem.
- o Check out this link: <https://math.berkeley.edu/~gmelvin/polya.pdf>
- o Don't be afraid to use scratch paper. Ideally your answers should be concise and clear (your grade depends upon such!). But that need not mean your scratch paper is! Draw pictures, hash out analytic relationships, don't be afraid to experiment.
- o The “right answer” isn't the only thing that matters. What is just as important (grade-wise) is clarity about how you arrived there.

o Try running the Matlab codes provided. While the test won't explicitly ask anything about Matlab or programming, those codes can be very useful w/ regard to getting your head wrapped around the various concepts in class!

o In short, the test will be tough, but fair (re what we have covered in class and via the readings in Wolfson).

In terms of material, the relevant (Wolfson) chapters are detailed below. Basically anything covered in class and on the notes is fair game. Note that some topics were not explicitly dealt w/ in the notes but were covered in the HW (e.g., ch.9.6). Detailed quantitative questions on anything labeled "Aside" in the class notes will not be asked, though conceptual T/F questions might (e.g., basic aspects about ODEs or complex #s, as discussed in class)

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Quantitative and qualitative knowledge required

1.1-1.4
2.1-2.6
3.1-3.6
4.1-4.6
5.1-5.5
6.1-6.5
7.1-7.6
8.1-8.5
9.1-9.6
13.1-13.7
14.1-14.5, 14.7

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Qualitative knowledge only required (i.e., T/F questions)

24.1
25.3
29.1, 29.4-29.8
31.4
32.1-32.6
33.3, 33.7, 33.9
34.1, 34.3, 34.5
36.5