You are prepared for the exam if you know:

- Images formation in mirrors and lenses. You should be able to use ray tracing method to draw images of objects. You should be able to use relevant equations, and calculate focal distances, radii of curvature, distance to object, distance to image, magnification. Know what kind of images are associated with different lenses and mirrors.

- Images formed by reflection and refraction. You need to know Snell’s law, law of reflection, and how to apply them appropriately.

- Waves: Displacement equation. Given a snapshot of a wave and wave speed, you should be able to plot history diagram...

- Types of waves, properties of waves, properties of the medium. You need to know how to calculate power, intensity.

- Superposition of waves. Interference of waves. Know how to calculate amplitude, phase difference, ... know the conditions for constructive and destructive interference.

- Standing waves. Amplitude, Intensity, Nodes, Anti-nodes, normal modes, .. Make sure you differentiate waves on a string from sound waves.

- Diffraction and interference. Single-slit diffraction, diffraction grating, double-slit diffraction. Know how to find angles and locations of dark and bright fringes.

- Interferometers.

Anything you have seen in homework you may see on the exam!

Tips for studying

- Cheat sheet - Make your cheat sheet now. Use it as you are studying for the exam. This way you will be sure you have all the equations you need on it. Also, you will get very familiar with it and will be able to find faster the equations you need on the exam.
  
  Reminder! You are allowed one page (8 x 11 in), one sided cheat sheet, hand written by you.

- Go over all the homework problems (written and MP), and all the problems you’ve seen in recitations. The examples from the text as well. Make sure you understand them and know how to solve them by yourself without help of notes and books (these won’t be available to you during the exam).

- Check your understanding of the concepts. Can you answer correctly, with understanding, the “Stop to think” questions in the text? You may want to look at some random Conceptual questions at the end of each chapter.
• If you come accross a concept you don’t understand, come see me, or ask the TA, or go to any of the help sessions.
My office hours are posted on my website, or you can schedule an appointment by email.

• Practice test - I am posting one practice test... To make the most out of it, DON’T hurry to look at it right away. I suggest you see it after your cheat sheet is ready, and you have time to “take the test”. Remember that on the actual exam you are only allowed a dumb calculator. When you are ready, time yourself and pretend you are taking the exam for a grade.
Once you are done, if you have any questions regarding the practice test, come talk to me.

Review for the exam

Some have asked to have a review in class. The time-frame in a Tuesday-Thursday class does not allow for one full review class. Doing the homeworks, examples and the recitation problems IS A REVIEW of the material for the exam. You also have the practice test. Once you feel ready for the exam, take the practice test following the advice from above. The practice test is the same format as the actual exam. Different problems, but similar concepts.

If you come across something you don’t understand (either from the review test or any other problem you’ve been working on), come see me in my office, I’d be happy to help.

During the next class on Tuesday, I will leave 30ish min. for questions. Bring a problem you want to discuss, we should be able to go through couple of problems.

Wednesday 3-5 pm, Brandon Gray (the TA for sections 6 and 7) has help hours. You may bring any problems to him as well, he’ll help you out.