

You are responsible for all material covered in class, the sections that we have covered in the text and handouts, and related material covered in the homework. In addition, you are responsible for being able to use the material that you were asked to review in any review assignments. More specifically, consider the list below. This list is not an exclusive list; unless I have specifically excluded something from the list, you are responsible for it even if I have not mentioned it here.

1. Be able to solve first-degree linear equations.
2. Be able to work with literal equations and formulas, including being able to solve for one variable in terms of the others.
3. Be able to work with powers of 10.
4. Know how to work with scientific notation, both by hand and using your calculator. Be able to convert numbers both into and out of scientific notation, and be able to do problems involving numbers written in scientific notation.
5. Be able to use your calculator to work with all the operations necessary to do the computations covered in this part of the course. In some cases, I may ask you how the answer to a computation is represented on your calculator.
6. Know the basic/fundamental units of the metric (SI) system and the United States customary system.
7. Know what the following SI prefixes mean: kilo-, deci-, centi-, milli-, micro-.
8. Be able to use a table giving derived units in terms of fundamental units; for example, $1 \text{ newton} = 1 \text{ kg}\cdot\text{m}/\text{s}^2$.
9. Given a table of conversion factors, be able to convert both within measurement systems and from one measurement system to another. You should be able to make the conversion in such a way that no accuracy is lost in the measurement. This could include an imaginary measurement system that I would give you on the exam.
10. Know what is meant by a *measurement/approximate number*.
11. Know what is meant by *absolute error*, *relative error*, and *percentage error*, and given a measurement with information about the absolute error or the maximum possible absolute error, or using the default error (implied absolute error), be able to find each.
12. Given the measured value and absolute error of a measurement, be able to find the relative error.
13. Given the measured value and relative error of a measurement, be able to find the absolute error.
14. Know what is meant by significant digits in a measurement, and given a measurement, be able to determine the number of significant digits in that number.
15. Be able to find the default (absolute) error for a measurement in which the error is not otherwise specified.

16. Know what is meant by accuracy and precision and how we determine them for measurements. Given a set of approximate numbers, be able to determine which number is most or least precise and which number is most or least accurate.
17. Given a measurement for which we are assuming the default error, be able to state the level of precision and the level of accuracy of the measurement.
18. Given a measurement or approximate number written in scientific notation but for which we are assuming the default error, be able to determine the default error, the level of precision, and the level of accuracy.
19. Be able to round a number according to any of the following criteria: specified decimal place or place value, specified number of significant digits, specified level of precision, specified level of accuracy.
20. Know the difference between measurement error and propagated error (the error which is produced by doing arithmetic operations with approximate numbers).
21. Know the rules for working with operations on approximate numbers. Be able to correctly round the answers to problems involving just one type of operation and others involving a mixing of different kinds of operations. Be able to explain which rules you are using and why.

GOOD LUCK!!