

EXAM #1 INFORMATION:

- 6:30 – 7:50 PM, March 9
- On ExpertTA. Upload answers to long problems on myCourses.
- Same length and difficulty as previous in-person proctored exams
- **Format:**
 - **13 short answer**
 - Either multiple choice, numerical answer, or **short** algebraic answer
 - No partial credit
 - 3pts each
 - Entered on ExpertTA
 - You won't see feedback or correct/incorrect.
 - You will have unlimited entries and the last entry is what gets graded.
 - Some conceptual, others quick problems.
 - Even for short problems, you should be working them out on paper to avoid careless mistakes! **Calculations required for many of them.**
 - **3 long show-your-work problems**
 - Worth 20 points each
 - Partial credit definitely awarded
 - Work uploaded to myCourses (10 minutes extra time given on myCourses dropbox to allow for this)
 - I hand-grade all long answers

Guidelines

- Allowed:
 - Class notes, myCourses materials, textbook, calculator
 - Your awesome brain!!!
- NOT Allowed:
 - Giving or receiving ANY outside help
 - Searching internet for answers, Chegg (etc), Slack (etc)
- Everyone gets a unique problem statement.
 - Problems have randomized values, phrases, words.
- UP1 Policy for Spring 2021:
 - ANY violation of academic integrity will earn an automatic zero on the entire exam.
 - This cannot be dropped from your final grade calculation.
 - Additional measures may be pursued as well.
 - **This includes providing help to others.**

EXAM #1 TOPIC LIST:

- Module 1:
 - Units, dimensional analysis, correct format for results in lab
 - Vectors (addition; components; unit vectors); trigonometry
- Module 2:
 - Problem solving and conceptual understanding of 1D kinematics with constant acceleration;
 - Calculus relations and problem solving with integrals/derivatives for non-constant acceleration;
 - Graphical understanding of motion for x , v , a with and without constant acceleration.
- Module 3: :
 - Problem solving and conceptual understanding of 2D kinematics with constant downward acceleration (so that you have constant velocity in x , and use kinematics in y , and can easily write out components in each direction and solve problems);
 - Centripetal acceleration for circular motion (magnitude and direction).
- Modules 4A and 4B:
 - Conceptual understanding all of Newton's Laws, including Newton's 3rd Law;
 - Free body diagrams;
 - Solving problems using Newton's 2nd Law (possibly including friction, multiple bodies, ramps, pulling at an angle, circular motion, etc...)
- Module 5:
 - Conceptual understanding of work, work-KE thm;
 - Dot product
 - Calculating work for constant and non-constant forces which vary by position
- Modules 6 and 7:
 - Conservation of energy (with and without internal energy)
 - Relation between force and potential energy
 - Potential energy diagrams
 - Vertical circle problems

HOW to Study

1. Review questions we've already done:

- All daily checks on myCourses.
- All problem sets.
- Solutions to both are on myCourses

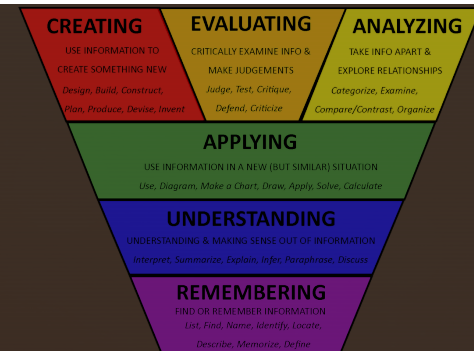
2. Make reference sheets so you don't have to spend time digging through your notes during the timed exam.

3. Put yourself in the 'exam environment' and try *unfamiliar questions with only reference notes and calculator*:

- Sample Questions for Exam 1, on ExpertTA; solutions on myCourses.
- "Additional Problems" on myCourses
- Check your pacing with the mini-sample exam on ExpertTA:
 - 13 multiple choice should take ~20 minutes
 - Each long problem should take ~20 minutes each

Make sure you get to the 'higher level of comprehension' that allows you to come up with answers/solutions yourself, and not just understand someone else's solution.

Keep up the hard work!!!!



Study Materials

- Study Material content section on myCourses.
- Sample Questions on ExpertTA, with solutions on myCourses

Get to the "applying" level of learning!

