

Information Regarding the ME451 Final Exam

Exam Date/Time: Tuesday, December 21, 2010 @ 5:05 PM

Document Purpose: Inform students about the way ME451 exam will be administered

The ME451 Final Exam will be based off the `simEngine2D` simulation engine and be given in a room where each one of you will have access to a computer running MATLAB. You will be given a mechanism and asked to:

- Define an acf and adm pair of files associated with the type of analysis that you are supposed to carry out and the model that you were given.
- Run simulations (Kinematics, Dynamics, and Equilibrium) using the simulation engine.
- Generate a set of plots that show the time evolution of an attribute of the model (the motion of a point, the value of a reaction force as a function of time, etc.)
- Answer questions that are more theoretical in nature. For instance, “How has been the Lagrange Multiplier Theorem used in deriving the equations of motion?”, “Why are initial conditions important in the context of Dynamics analysis?”, etc.
- Email the TA and class instructor a zipped directory that contains your code, adm/acf files, png plots of your results, and the answer to the theoretical questions. The naming convention for this directory should be “LastNameME451.zip”. For instance, “NegrutME451.zip”. The answers to the theoretical questions should be typed in MS-Word in a file called FinalExam.doc[x].

Remarks:

- If your `simEngine2D` does not use MATLAB, it will be your responsibility to have the compiler support allowing you to run the software during the Final Exam.
- Running your `simEngine2D` code should also report the amount of time it took for completing a simulation. This information should also be included in the email to the TA & instructor.
- I will not insist on having `simEngine2D` that you use during the exam be implemented exclusively by you. However, in good faith, you will have to indicate in the email that you will be sending to the TA & the instructor the percentage of your contribution to the `simEngine2D` code that you are using for the exam. I will then understand that the remaining percent came from code written by other ME451 colleague[s]. This is fine, but should be acknowledged.

- If you contributed more than 66% to your `simEngine2D`, you qualify for entering the race for the fastest solver. Winning that race translates into an automatic A-grade in the course.
- One other automatic A grade *might* be assigned for the most general, flexible, and neatly organized `simEngine2D` code.

Please post any questions that you might have on the forum and I will answer them there. Please do not email me with questions related to this document since chances are if you were unclear on a point there will be at least one more student in the class having the same question.