





(20 pts) Approx. 2 days

The second part of our unit is much quicker than the last. In addition to adding to our ideas and conventions for diagram and documenting our work, this part of the unit also looks at how to make more advanced assemblies in Autodesk. The biggest part of this unit is to follow a tutorial video that creates a ‘cam assembly’ as you construct your own. A “Cam” is a disk – sometimes round, sometimes other shapes – that when turned can convert rotational motion into linear motion. We looked at cams last semester when we did our mathematical modeling. Here you’ll create a cam assembly in Autodesk so that in a future unit you can design and build your own cam project!

1. **Advanced Assemblies:** Start by watching the *Advanced Assembly Constraints* presentation. Take a full page of notes on the ideas presented here. Make sure that your notes include specific details on the new Autodesk tools and constraints that the presentation describes. These tools will be essential as we move forward with our cam assembly.
2. **Cam Assembly Tutorial (Part 1):** Next, watch the *Cam Assembly Tutorial* presentation and add to your notes on assemblies. This tutorial shows what constraints to use in order to build a functioning ‘cam assembly’. The machine you’ll *actually* build in Autodesk will be slightly different, but all the same tools and procedures can be used to make it work!
3. **Cam Assembly Tutorial (Part 2):** Now you get to actually build this in Autodesk! Download the *AutomataSimulation* folder from our website. This folder contains ALL of the Autodesk parts you’ll need to create the cam assembly. Follow these steps (and the steps from the tutorial video) to create your complete assembly:
 - a. **Download** the Automata Simulation folder and unzip its contents onto the desktop
 - b. **Make** a new Assembly in Autodesk and **place** one copy of every cam assembly item (box, hexCam, etc) into the assembly
 - c. **Follow** the guidelines from the tutorial video to assemble your working cam!
4. **Engineering Documentation:** Finally, review the *Engineering Documentation* presentation from the website. Take a full page of notes on the ideas presented here. Think about your own notes, notebook, and documentation. How can you improve your notebook?

Part 2: Tasks	2 points	1 points	1-0 points
 Advanced Assemblies	+ You took a full page of notes on the <i>Advanced Assembly Constraints</i> and <i>Cam Assembly Tutorial</i> + Your notes include specific explanations of the tools described	- Your notes are missing a few key components	- Your notes are missing many key components - Your notes are completely missing
 Cam Assembly Tutorial	+ You followed the ideas from the <i>Cam Assembly Tutorial</i> to build your cam assembly + You used the parts linked in the <i>AutomataSimulation</i> folder to build your cam assembly	- Your cam assembly does not move properly - Your cam assembly is not fully assembled	- Your cam assembly is missing completely - Your cam assembly is not saved to your jump drive
 Engineering Documentation	+ You took a full page of notes on the <i>Engineering Documentation</i> presentation. + Your notes include details about what good documentation includes	- Your notes are missing a few key components	- Your notes are missing many key components - Your notes are completely missing
 Take Unit 8 Quiz	+ You took the Unit 7 Quiz on the website by the Quiz Due Date + Grade is based on number correct	N/A	(0 pts) You did not take the Unit 7 Quiz

