




(30 pts) Approx. 3 days

The last part of this unit will ask you to follow the frame generation and stress analysis processes on a wire model of an engine mount. Autodesk is a great tool for simulations, but it takes practice to get good at it. Here, you'll take a wire model and build it out with the frame generation tools just like in the last part, but without step-by-step instructions to follow. Then, you'll investigate the strength of the engine mount using the stress analyzer. Finally, you'll write reflection about the tools and their potential application.

1. Watch the *Autodesk Modeling Overview* video, and take some time to review your notes about the frame generation and stress analysis process.
2. Download the engine mount wire frame from our website. You will use this relatively simple engine mount wire frame for the entire Part 3 activity.
3. Use the frame generator tools and skills you practiced earlier to build a steel frame using the provided wire frame. Be sure to make fillets and joints like you did in the Part 2 tutorial.
4. Then, conduct the stress analysis described in the activity. Use the points of contact and the stresses included in the activity. Decide for yourself if the engine mount is strong enough.
5. Write a full page reflection in your engineering notebook about the simulation process in Autodesk. Include your thoughts about each of the following:
 - a. Would the engine mount have been strong enough? How do you know?
 - b. What are the possible applications of the frame generator? How might aerospace engineers use the frame generator?
 - c. What are the possible applications of the stress analyzer? How might aerospace engineers use the stress analysis tool?
 - d. What was the coolest part about Autodesk Inventor as a tool for simulation?

Part 3: Tasks	10 points	8-5 points	4-0 points
 Build Engine Mount Frame	+ You built the engine frame using the provided wire model + You built the engine frame completely using the tools practiced in Part 2	- Your engine frame is not totally built - Your engine frame did not use proper techniques	- Your engine frame is nearly incomplete - Your engine frame is missing
 Analyze Engine Mount Stress	+ You complete the stress analysis + You include the stress analysis in your engineering notebook	- Your stress analysis is incomplete - Your stress analysis does not use the proper stresses of points of contact	- Your stress analysis is incomplete - Your stress analysis is missing
 Autodesk Reflection	+ You wrote a full page reflection about the frame generator and stress analysis tools + Your reflection includes an assessment of whether or not the engine mount is strong enough	- Your reflection is less than a full page - Your reflection does not reference the strength of the engine mount	- Your reflection is missing

