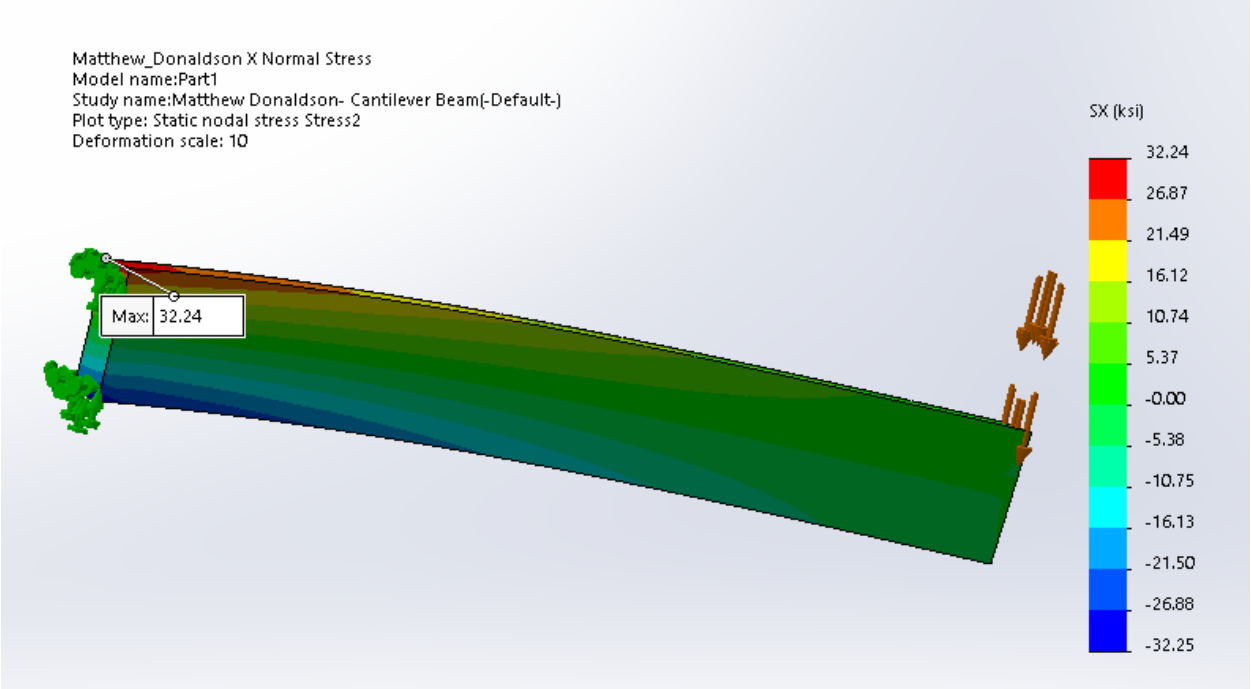
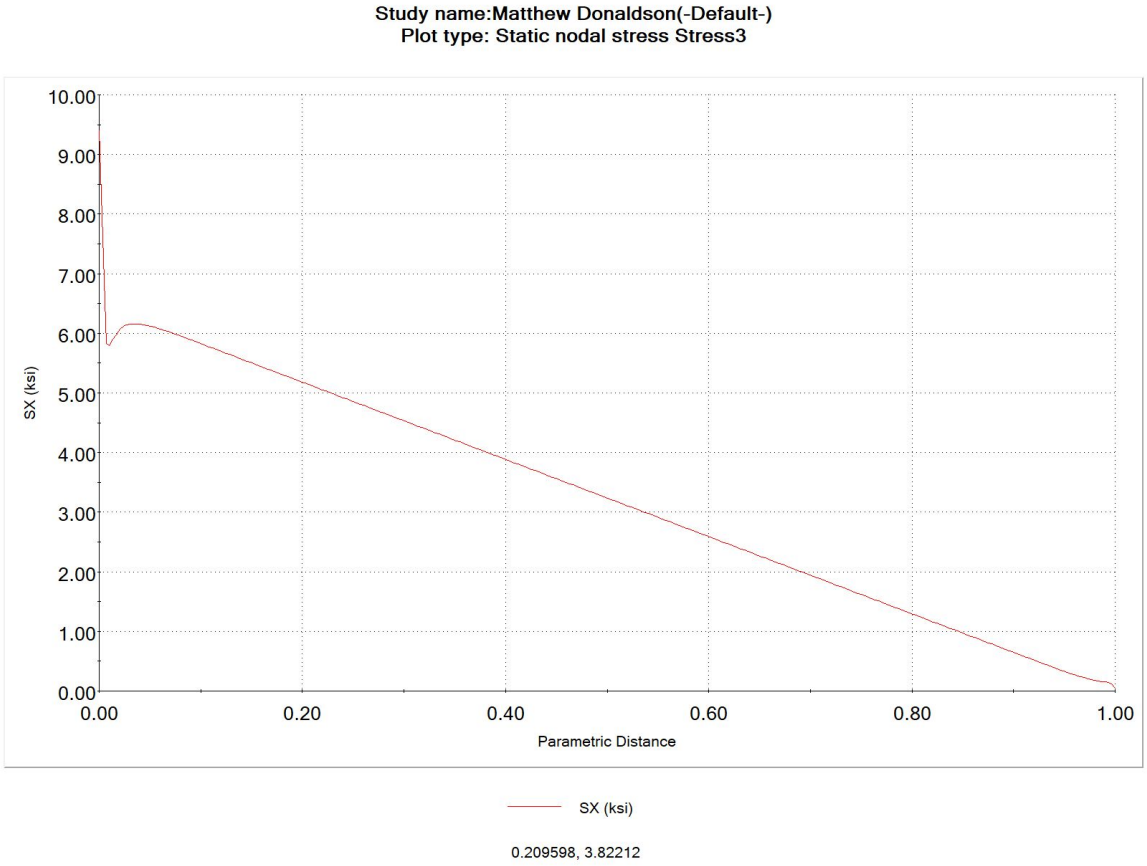
MEMS 3110 Lab – SP2020
Lab1 – Intro to the Finite-Element Method

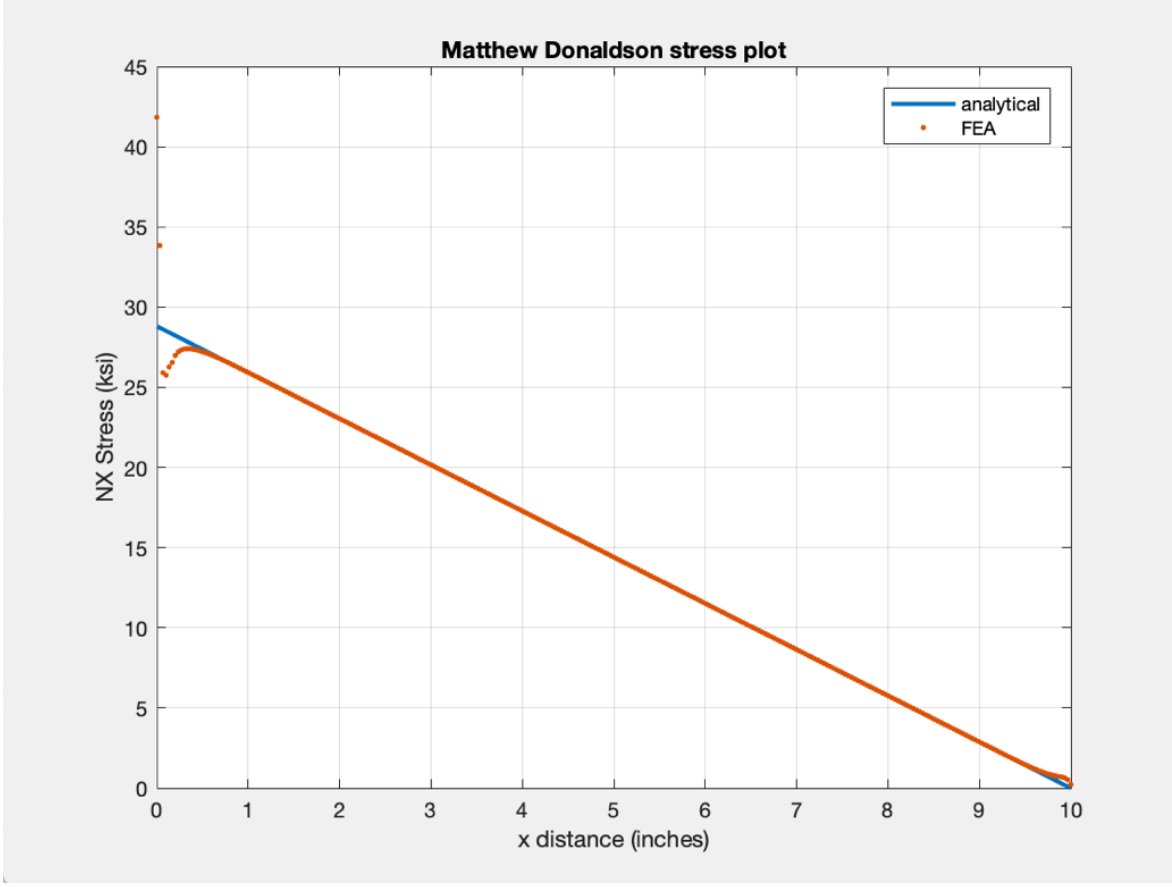
FE1.



FE2.



FE3.



FE4. Saint-Venant's Principle is that as you get farther away from the point of loading the magnitude of that force felt decreases. This can be applied to our simulation on solid works because as you get farther from where the force was loaded and more toward where the beam was anchored it will experience less bending that where the load is.

FE5. No shear stress is not involved because we took the stress at the top of the beam and there is no shear stress at that area. Shear stress is only seen as you go more toward the center.

FE6. Yes, the axial end-load will affect the normal stress in the x direction because an axial load is in the x direction. The axial load would change the plot of the top edge by maybe increasing the slope of the line because there would have to be a greater reaction force holding the left end and there still will be no normal stress at the right end of the beam.