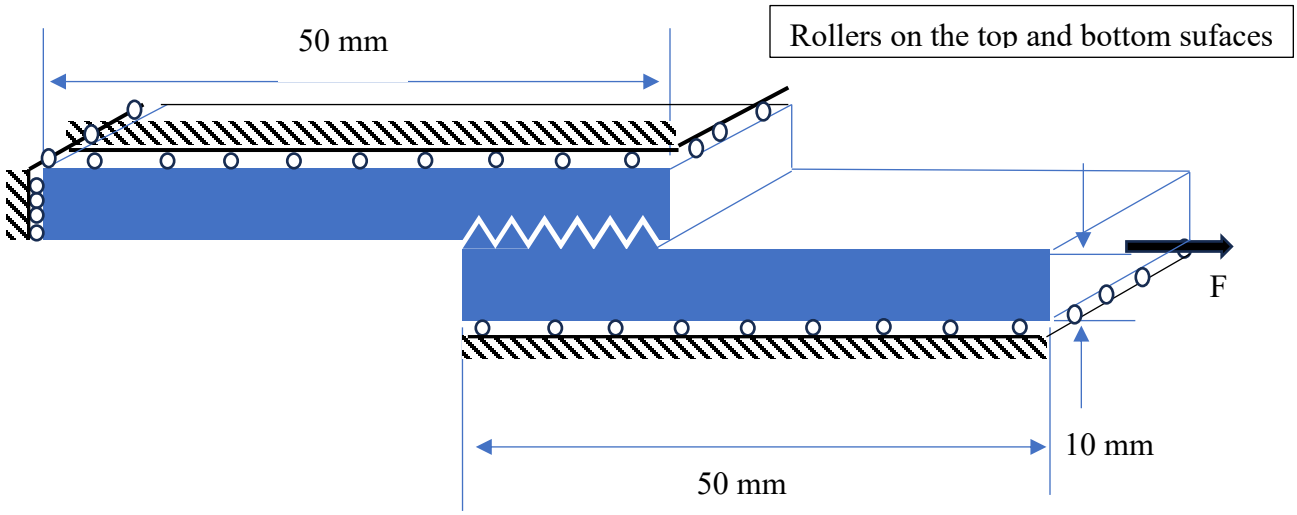
ME478 - Project 3

Spring 2024

Assigned: 4/12/2024
Due: 4/22/2024
Number of team members =2

a) Obtain the force F that produces a maximum stress that is equal to 90% of the yield stress of the material. Please use structural steel. Use a thread profile that is identical to the one presented in Tutorial 4 (same H, p, angles, and fillet diameter). This is a planar structure as indicated. Please use plane strain. The depth of the structure into the paper is 30 mm.



b) Now increase the force F to be 30% higher than the force you obtained in a). Assume a bilinear stress-strain curve. Compare the obtained stress distribution with the one you would get using a linear material that does not yield.