

ESM 5734 HW 7

Due on Friday, October 21, 2022 at 11:15 AM

Use Hermitian basis functions that are in H^2 to numerically solve the beam problem of HW 6. You should use non-dimensional quantities as discussed in the class on 28 September.

- (a) Plot on the same graph the deformed shape of the plate found analytically and by the two numerical solutions (Hermitian and Lagrangian basis functions used in HW 6),
- (b) plot on the same graph the variation of the shear force and the bending moment along the beam found by using the two numerical techniques,
- (c) determine the maximum tensile and compressive stresses in the beam due to bending and state where they occur,
- (d) use an error norm of your choice to find the discrepancy in the two numerical solutions.