

ASEN 5107 Nonlinear Finite Element Methods
Homework 4: Chapter 7 and start of Chapter 8 of Notes

Due Thursday February 15, 2007

Be sure to attach this sheet as cover to your HW

Four exercises:

7.3

7.4

7.5

8.2

Grading weights: given at the start of each exercise.

Partial result for 7.5. Midpoint strain measure:

$$e_M = \frac{(L^2 - L_0^2)}{\frac{1}{2}(L + L_0)^2} = 2 \frac{(1 + \epsilon)^2 - 1}{(2 + \epsilon)^2} = \epsilon - \frac{1}{2}\epsilon^2 + \frac{1}{4}\epsilon^3 + \dots = \epsilon + O(\epsilon^2)$$