ASEN 5007 Introduction To Finite Elements - Fall 2017

Homework Assignment #3   Chapters 6–7 of Notes

Due Thursday Sep 21, 2017

Please don't forget to attach this cover sheet to your returned homework and write your name on it. Include names of other members on the cover sheet if the HW was done by a group.

Exercises:

7.1 (easy, about a minute)
7.2 remember that no triangles are allowed when you draw a mesh within region ABCD. Several acceptable solutions with quadrilaterals are possible; some are a bit tricky.
7.3
7.4 (long to do by hand, may be helped by computer or calculator)
7.7 (see Notes below)

Grading weights: given at the start of each Exercise.

Note 1: Please do all necessary sketches for 7.1, 7.2 and 7.7 on your own paper. Engineering paper should be used. You should start each Exercise on a new page to help grading, but don’t need to start a new page for consecutive items of an Exercise.

Note 2: For 7.7(d) and 7.7(e) truncate the mesh at a sufficiently large distance from the loads. (The mesh should occupy a rectangular region and use rectangular elements, since that is easy to draw). No need to use infinite elements (that is an advanced topic), but be careful that vertical rigid-body motions be restrained as necessary. As regards what BC to place on truncated boundaries, use your engineering judgement.

First Midterm Exam Announcement

The first midterm exam is tentatively planned to be given on Th October 12 at class time for on-campus students — as well as remote students willing to take it on campus at that time. (Others should make arrangement with instructor.) Review class on Tu October 10. Exam covers Part I of course (Chapters 2–10, except 4).