

Foundation Exam Review Class Lesson Plan – Week 3 (April 1, 2015)

Location: HPA-116, 3:30 – 4:20 PM

1. (5 min) Why is the peer grading exercise MORE beneficial than the teacher going over problems on the board?

2) (5 min) Practice binary search tree functions type up from scratch.

- a) Insert
- b) Delete
- c) Search
- d) Printing the nodes in all three traversals (preorder, inorder, postorder)
- e) Height of a tree
- f) Number of total nodes
- g) Number of leaf nodes
- h) Number of nodes with two children
- i) Number of nodes within a range

3) (30 min) Grade practice exam (Discrete Structures May 2009)

4) (5 min) Start going over mathematical induction. List common categories of problems:

- a) summations with an equality
- b) summations with an inequality
- c) another type of equality or inequality
- d) matrix exponentiation
- e) divisibility problems
- f) recurrence relations
- g) using a given definition

5) (5 min) Propose several problems to solve for Induction

- a) Spring 2004 (Summation)
- b) Summer 2011 (Inequality)
- c) Fall 2013 (Inequality w/o summation)
- d) Summer 2010 (Matrix Exponentiation)
- e) Fall 2005 (Divisibility)
- f) Summer 2007 (Recurrence Relation)
- g) Summer 2008 (Using a Given Definition)