

Discussion Section Lesson Plan

The goal of the discussion section should be to help the students understand the methods of solution for the types of problems they will encounter on the problem set.

A suggested outline for a discussion section:

1. Briefly list the new relevant principles which will be covered on this problem set. For example KCL, KVL. Query student knowledge with trivial examples to make sure they know what the principles are about. The students probably won't really understand the principles until they know how to apply them and what they are good for.
2. Give an example problem, e.g. draw schematic. This could be an unassigned chapter problem or one you make up yourself.
3. Talk through how you would know which principle(s) to apply, and outline the order of application. (You could ask students which principle to apply, in this case perhaps show of hands KCL vs KVL.)
4. Go step-by-step on the board through the solution, in particular setting up the equations (for example, getting signs correct). You might ask students to solve algebra in groups to keep them engaged and report, or volunteers to do a step of problem on board. Tedious algebra steps should usually be avoided, but setting up the equation is essential.
5. Summarize the solution: what does it mean, how does it generalize, do all problems get solved this way, what limitations or pitfalls do you need to watch out for?
6. Try a simpler example problem for students to work on jointly for 3-5 minutes, to gauge whether they understand or not.

Mechanics of Presentation:

1. Have all details of example and solution written out.
2. It is a good idea to have board area mapped out. For example, you may want to leave schematic on left board, and do analysis on right board.
3. Practice going through material either mentally or in front of a mirror to rehearse what you plan to say.
4. Pace yourself, get feedback from students. It is easy to go too fast. Less is more. Students can only learn so much in 50 minutes. They will need to spend 6-9 hours on the problem set for material to really be learned fully. You want to make sure they know the fundamentals, so they can get started on the problem set. They may need to come back to office hours to get further detailed understanding.