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Changes for the Spring in Thermodynamics I

1. In-class groups

This semester I have required students to work in groups on class problems. I created the groups and rearranged them three times during the semester. Some groups functioned very well but others were hindered by absent or unprepared group members.

In the spring, I plan to again create groups but I'll also have each student fill out a Teamwork Rubric for each group member, the results of which will count towards each student's grade. The rubric will allow for satisfactory or unsatisfactory grades to be given for attendance, preparedness, contribution, respect, etc. In addition, one group member each week will be assigned as the leader of the group. The leader will be responsible for keeping the group on task and asking questions or explaining solutions for the group during the class.

2. Class objectives

Present objectives at the beginning of the week so students will know the purpose of their work and will be able to self-assess what they've learned.

3. Exam wrappers

Have students complete a self-assessment survey after each test to determine how the students prepared for the test, what problems they struggled with, what grade they predict, etc.

4. Emphasize more real-world examples.

5. Use thermodynamics concept inventory at the mid-point and end of semester to determine students' improvement.

6. Add more feedback to online quizzes and use quiz results to determine topics that need to be discussed again.