058:160 CFD Post-test and Survey Summary

1. Overall improvement

	Number of Students
Total	36
Submitted	35
Missed	1

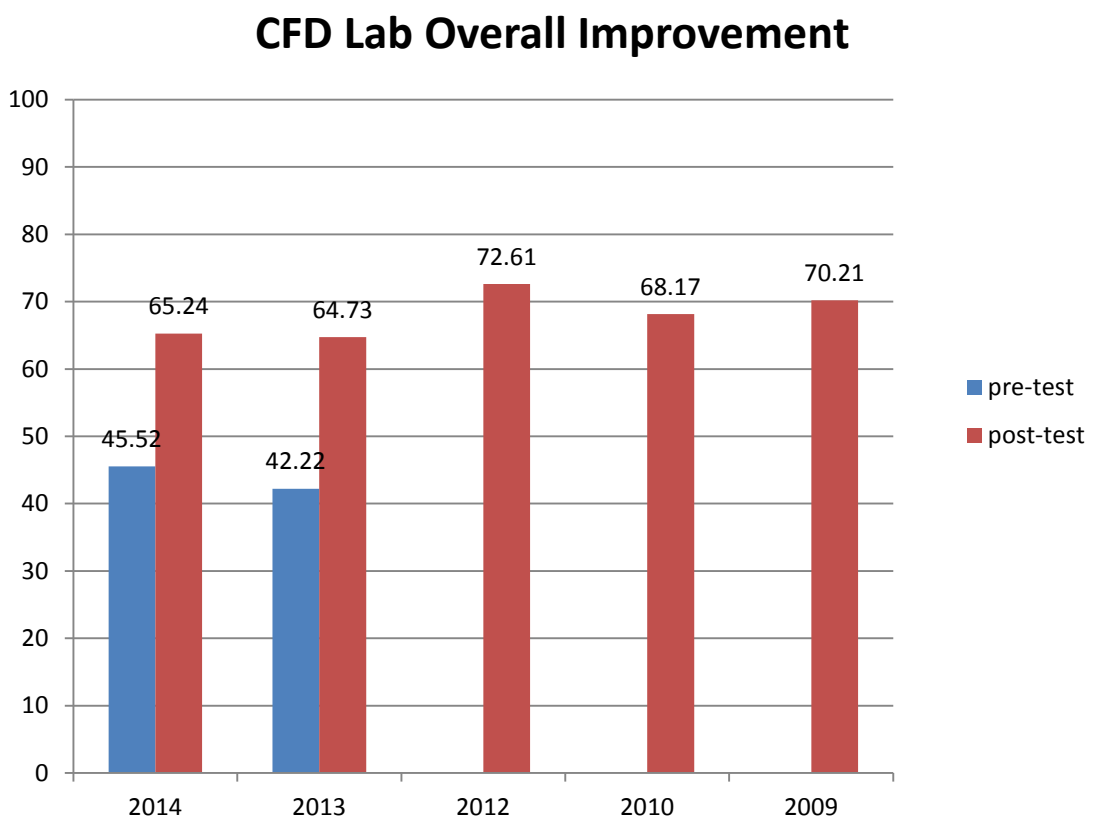
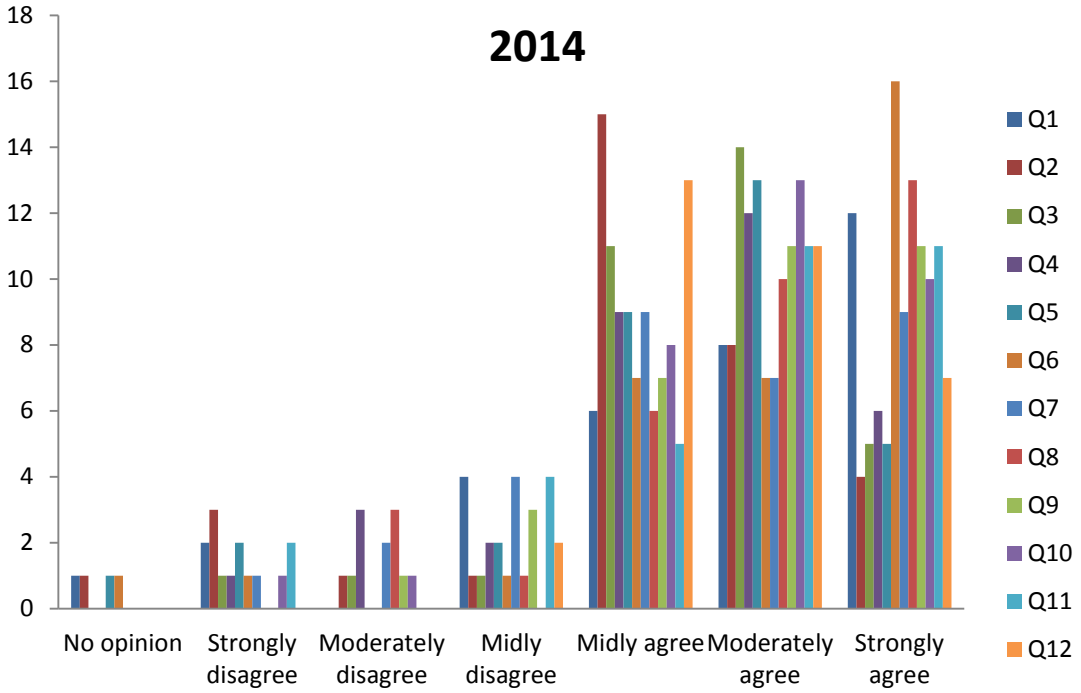
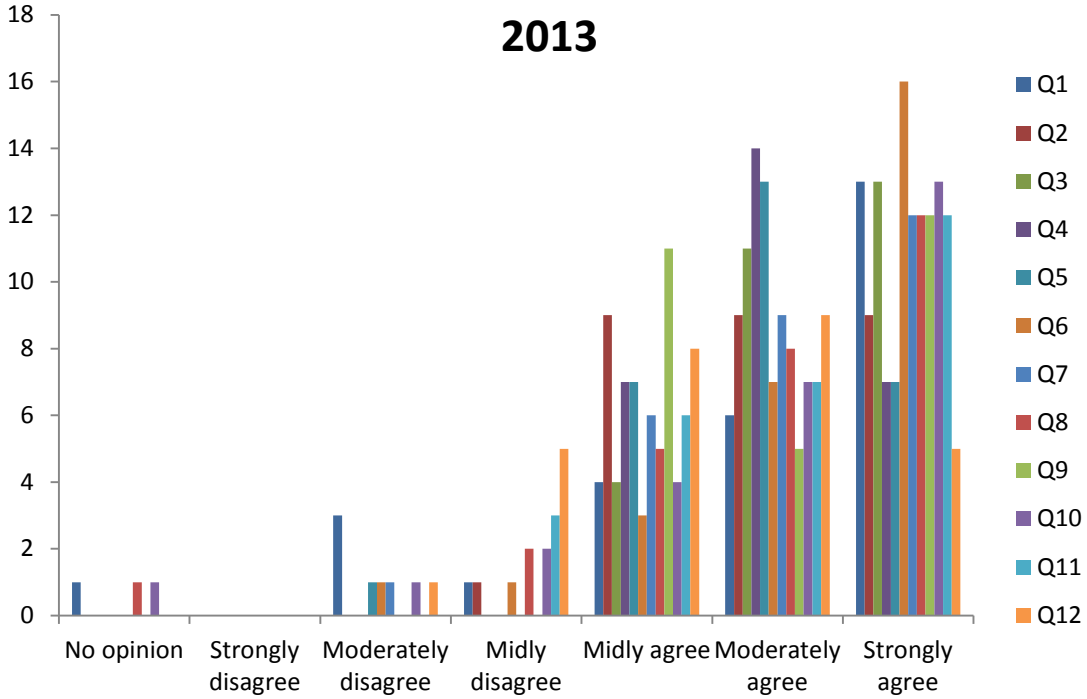


Figure 1 CFD Lab overall improvement

Fall 2014 improvement is 43% comparing average post-test score to pre-test. Pre-test scores are not available for previous years (2009 – 2012). The average post-test scores are comparable in different years.

2. Post-test survey statistics





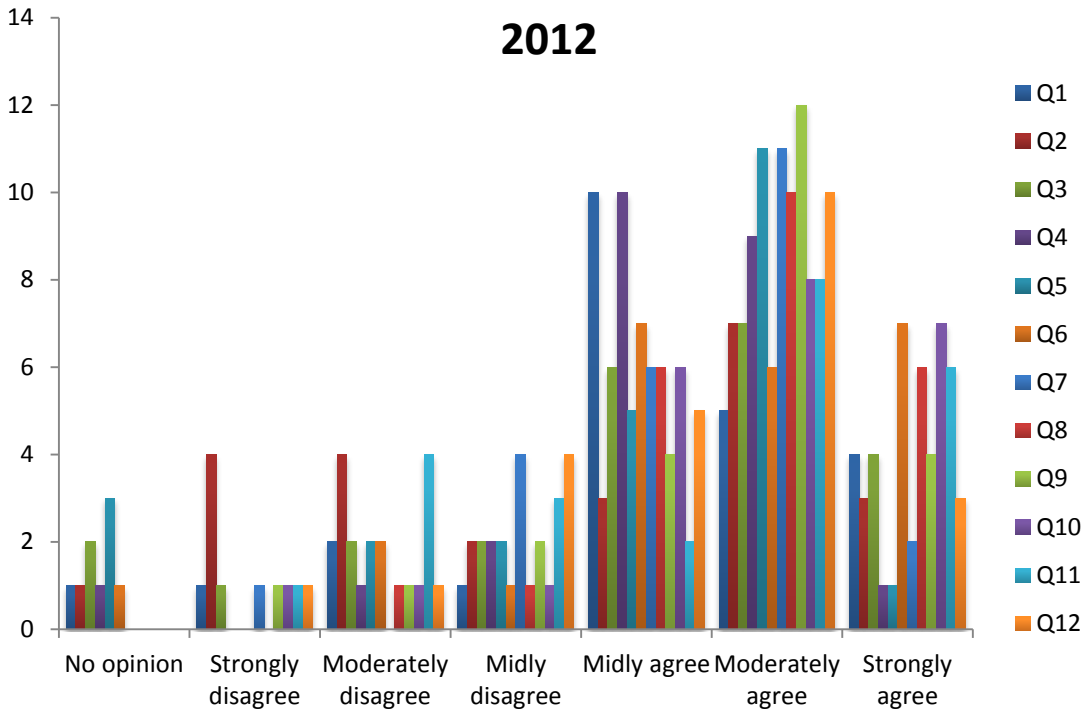
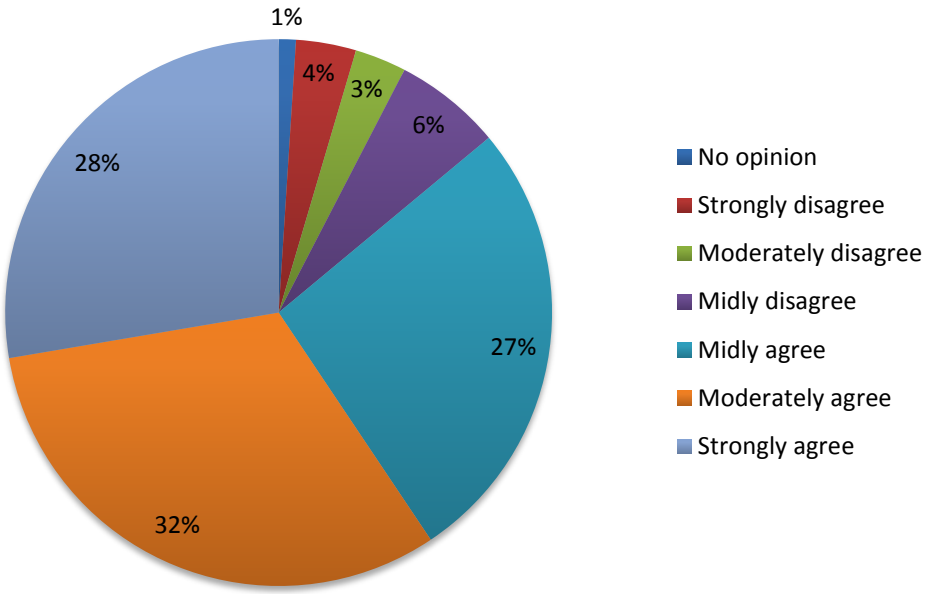
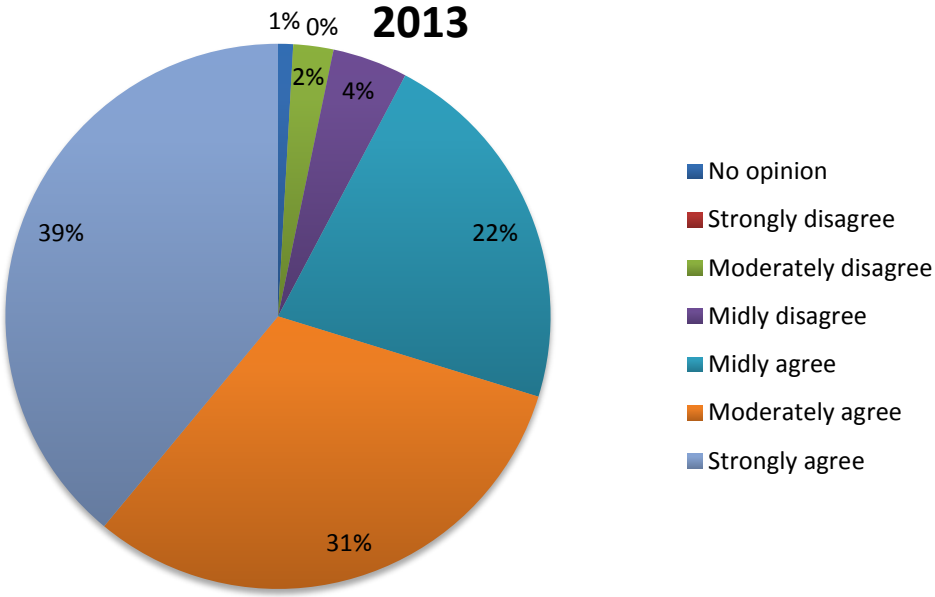


Figure 2 Course goals statistics (distribution of number of students)

2014


1%
4%
3%
6%
28%
27%
32%
No opinion
Strongly disagree
Moderately disagree
Midly disagree
Midly agree
Moderately agree
Strongly agree

2013


1%
0%
2%
4%
22%
39%
31%
No opinion
Strongly disagree
Moderately disagree
Midly disagree
Midly agree
Moderately agree
Strongly agree

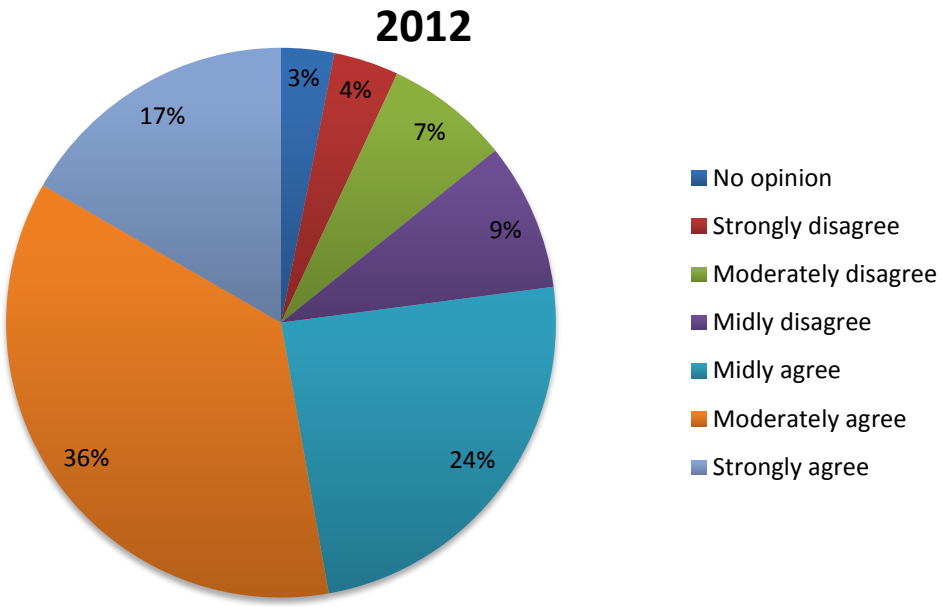
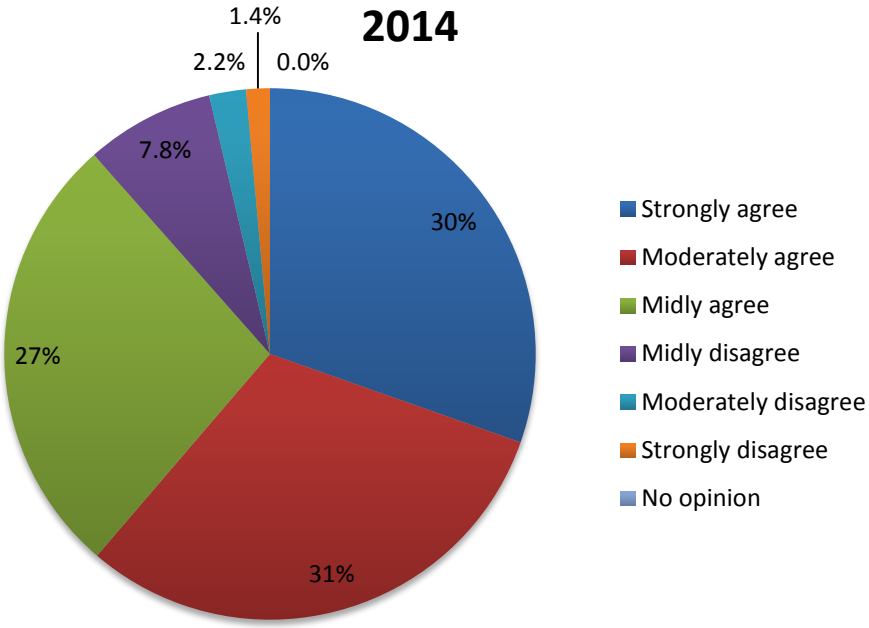
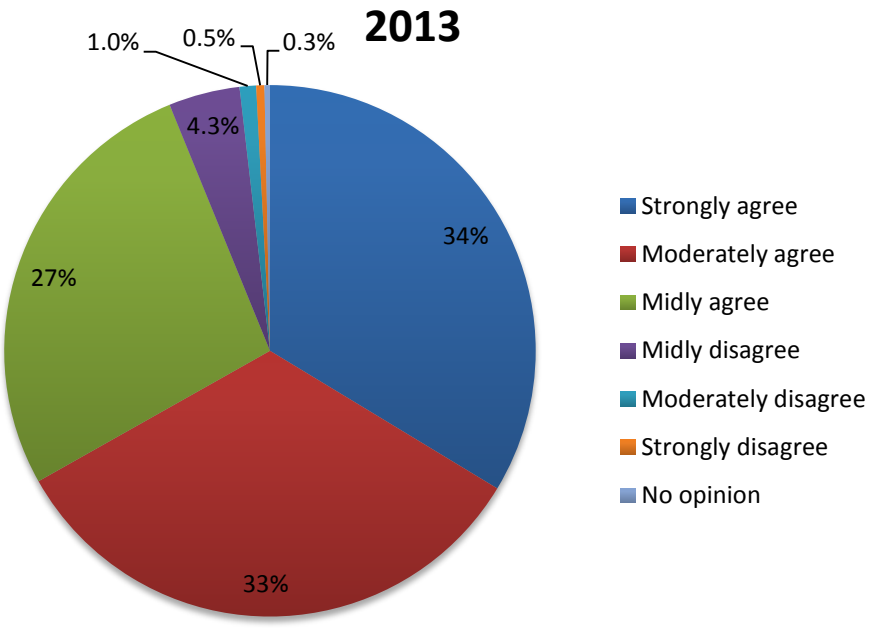


Figure 3 Course goals statistics (distribution of survey question 1-12)


2014
1.4%
2.2%
0.0%
7.8%
30%
27%
31%
Strongly agree
Moderately agree
Midly agree
Midly disagree
Moderately disagree
Strongly disagree
No opinion


2013
1.0%
0.5%
0.3%
4.3%
34%
27%
33%
Strongly agree
Moderately agree
Midly agree
Midly disagree
Moderately disagree
Strongly disagree
No opinion

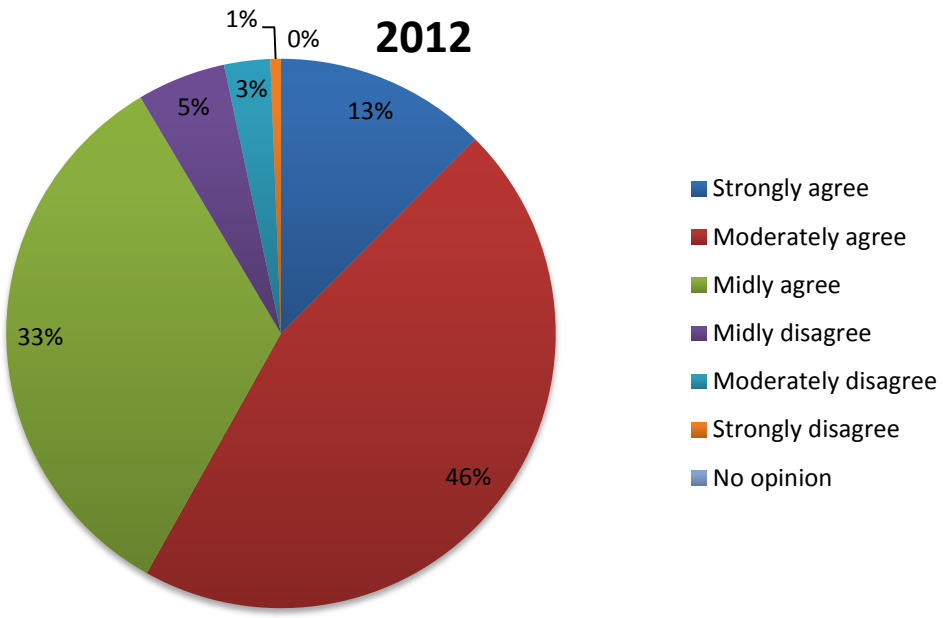


Figure 4 Statistics of Comparative improvement (Questions 13-32)

Post-survey questions 1-12 are related to CFD lab goals and questions (13-32) are related to comparative improvements of students after doing CFD labs to before taking the course. The post-survey results for the Fall 2014, Fall 2013 and Fall 2012 are available and compared. Students used Flowlab software in Fall 2012. Fall 2013 and Fall 2014 were the first and second time the ANSYS software was used, respectively.

For question 1-12, the distribution decreased at “strongly agree” for Fall 2014 (28%) compared with in Fall 2013 (39%) while in Fall 2012 it comprised only 17% of the answers. The accumulative percent of “strongly agree”, moderately agree”, and “mildly agree” answers add up to 87% in Fall 2014, 92% in Fall 2013 and 77% in Fall 2012, a slight decrease compared with that of last year. The breakdown of answers for questions 1-12 are shown in Figure 2.

For questions 13-32, the distribution slightly decreased at “strongly agree” for Fall 2014 (30%) compared with in Fall 2013 (34%) while in Fall 2012 it comprised only 13% of the answers. The accumulative percent of “strongly agree”, moderately agree”, and “mildly agree” answers add up to 88% in Fall 2014, 94% in Fall 2013 and 92% in Fall 2012, a slight decrease.

3. Feedback

3.1.CFD Lab 1

3.1.1. Positive

- Most students are satisfied with lab manual and they believed manual is clearly described to follow and get results.
- Most students are pleased to be familiarized with software used in industry.

3.1.2. Negative

- Some students want tutorial session including ANSYS and V&V before Lab assignment is given.
- Some think that it will be useful and clear to provide the reason the data and analysis should be made given in the exercise section.

3.2.CFD Lab 2

3.2.1. Positive

- Most students are satisfied with lab manual and they believed manual is clearly described to follow and get results.
- Some students would like to study the effect of turbulent models.

3.2.2. Negative

- Some students think the organization of the exercise question needs improvement.

  Some think that it will be useful and clear to provide the reason the data and analysis should be made given in the exercise section.

3.3.CFD Lab 3

3.3.1. Positive

Most students are satisfied with lab manual and they believed manual is clearly described to follow and get results.

3.3.2. Negative

- Some students think more detailed instruction for the modified u and TKE plot will be helpful.
- Some students think more detailed instruction for the geometry definition will be helpful.

3.4.CFD Lab 4

3.4.1. Positive

- Most students are satisfied with lab manual and familiar with the ANSYS program.

3.4.2. Negative

- Some students suffered from animation issue.

  Some students think more detailed instruction will be helpful.