University of Pittsburgh
Office of Measurement and Evaluation of Teaching

Dear Professor William Slaughter:

Student Opinion of Teaching Questionnaire Results

This form contains survey results for APPLIED THERMODYNAMICS(MEMS-1051)-1030.

Attached is a report in PDF format containing your Student Opinion of Teaching Survey results from last term. The report is best viewed and/or printed in color.

The evaluation results are broken down into three distinct categories. The first part of the report shows a breakdown of student responses to the quantitative questions. For each item, the number of students (n) who responded, the average or mean (av.) and standard deviation (dev.) are displayed next to a chart or histogram that shows the percentage of the class who responded to each option for that question. The percentages are above the number on the rating scale which increases from left to right, i.e. the number 1 equals the least favorable rating and the number 4 or 5 (depending on the scale) equals the most favorable rating. The sum of percentages will equal 100%. A red mark is displayed on the chart where the average or mean is located. To calculate how many students responded to each option, multiply the number of students who answered the question by the percentage for that option. For example, if 14 students answered the question and 50% responded to option 3 then 7 students marked option 3 for that item (14 x .50 = 7). The standard deviation is a common measure of dispersion around the mean that may be useful in interpreting the results.

If your school had previously calculated norms, they will be on OMET's website (omet.pitt.edu).

The second part displays individual comments to each question in the open-ended section of the evaluation. All the responses to the first question will be listed together after the first question and then the responses to the next question will be listed together after the next question, and so on.

The final part gives you a profile of the student responses to the quantitative section of the evaluation. This is a chart listing all of the means for the scaled items with a dashed red line connecting the means.

If the number of respondents for any of the scaled items is fewer than seven, please be cautious in interpreting the quantitative results.

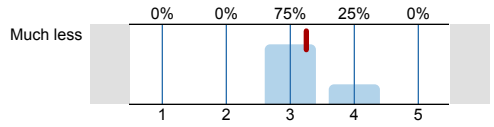
Office of Measurement and Evaluation of Teaching (OMET)

Professor William Slaughter

APPLIED THERMODYNAMICS(MEMS-1051)-10302161_UPITT_MEMS_1051_SEC1030
Fall 2015
28 RESPONDENTS = 35% OF NUMBER REGISTERED

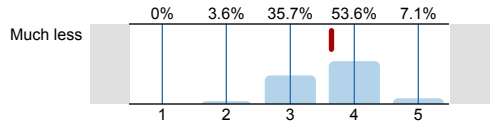
1. SELF RATINGS

1.1) Compared to other courses at the same level, the amount of work I did was:



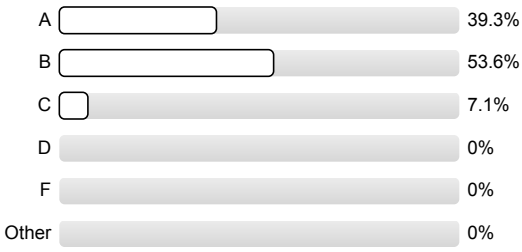
n=28
av.=3.25
dev.=0.44

1.2) In this course I have learned:



n=28
av.=3.64
dev.=0.68

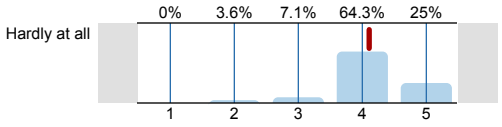
1.3) The grade I expect in this course is:



n=28

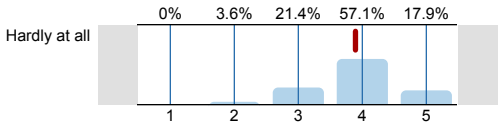
2. TEACHING EVALUATION

2.1) The instructor presented the course in an organized manner.



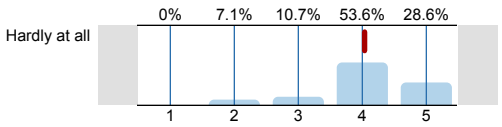
n=28
av.=4.11
dev.=0.69

2.2) The instructor stimulated my thinking.



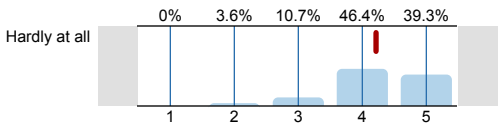
n=28
av.=3.89
dev.=0.74

2.3) The instructor evaluated my work fairly.



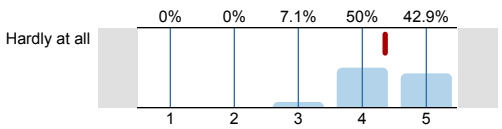
n=28
av.=4.04
dev.=0.84

2.4) The instructor made good use of examples to clarify concepts.



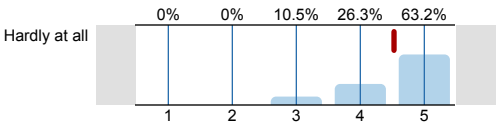
n=28
av.=4.21
dev.=0.79

2.5) The instructor maintained a good learning environment.



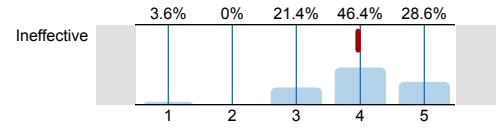
n=28
av.=4.36
dev.=0.62

2.6) The instructor was accessible to students. (Do not answer if no basis to judge)



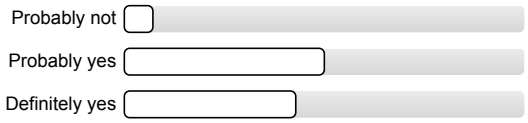
n=19
av.=4.53
dev.=0.7

2.7) Express your judgment of the instructor's **overall teaching effectiveness:**



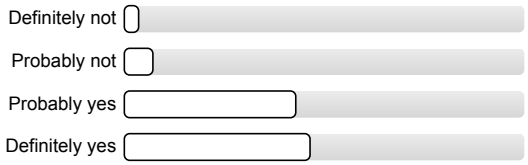
n=28
av.=3.96
dev.=0.92

2.8) Would you recommend this course to other students?



n=28

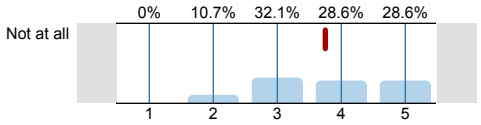
2.9) Would you recommend this instructor to other students?



n=28

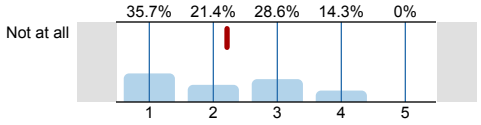
3. SWANSON SCHOOL OF ENGINEERING ADDITIONAL ITEMS- select only one answer for each item

3.1) ability to use math concepts to solve engineering problems.



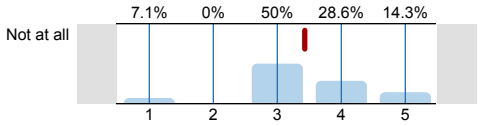
n=28
av.=3.75
dev.=1

3.2) ability to use chemistry concepts to solve engineering problems.



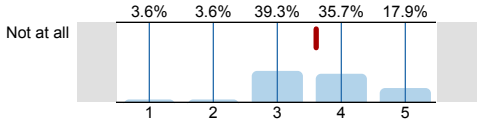
n=28
av.=2.21
dev.=1.1

3.3) ability to use physics concepts to help solve engineering problems.



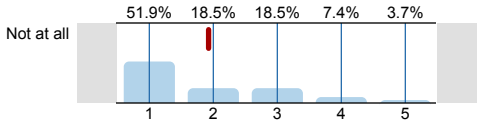
n=28
av.=3.43
dev.=1

3.4) ability to use engineering concepts to help solve problems.



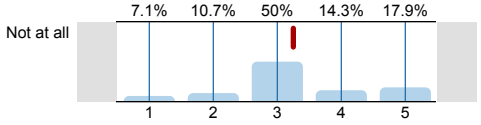
n=28
av.=3.61
dev.=0.96

3.5) ability to design an experiment to obtain measurements or gain additional knowledge about a process.



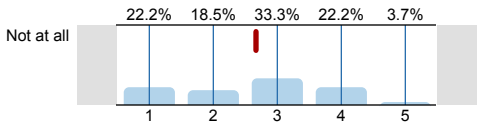
n=27
av.=1.93
dev.=1.17

3.6) ability to analyze and interpret engineering data.



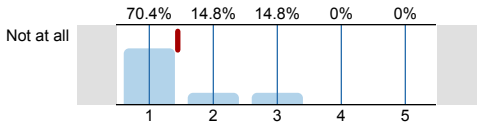
n=28
av.=3.25
dev.=1.11

3.7) ability to design a device or process to meet a stated need.



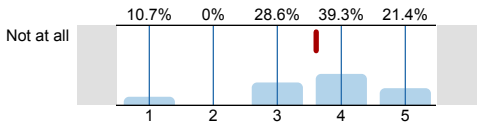
n=27
av.=2.67
dev.=1.18

3.8) ability to function effectively in different team roles.



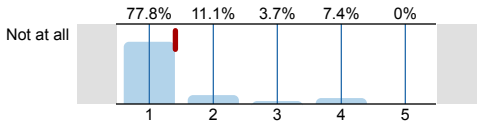
n=27
av.=1.44
dev.=0.75

3.9) ability to formulate and solve engineering problems.



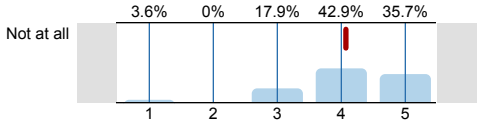
n=28
av.=3.61
dev.=1.17

3.10) ability to use laboratory procedures and equipment.



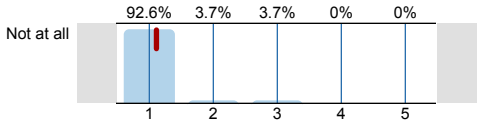
n=27
av.=1.41
dev.=0.89

3.11) ability to use software packages to solve engineering problems.



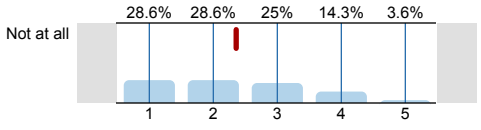
n=28
av.=4.07
dev.=0.94

3.12) ability to use CAD software.



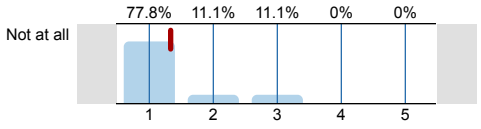
n=27
av.=1.11
dev.=0.42

3.13) knowledge of professional and ethical responsibility.



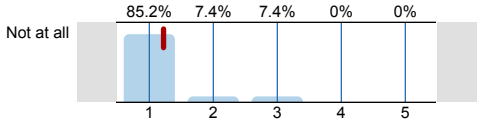
n=28
av.=2.36
dev.=1.16

3.14) ability to write reports effectively.



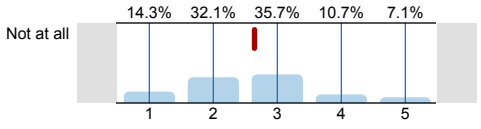
n=27
av.=1.33
dev.=0.68

3.15) ability to make effective oral presentations.



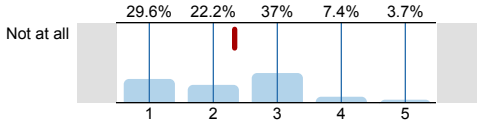
n=27
av.=1.22
dev.=0.58

3.16) knowledge about the potential risks (to the public) and impacts that an engineering solution or design may have.



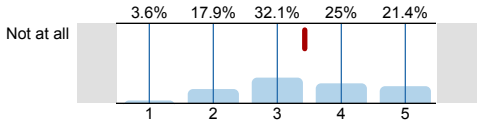
n=28
av.=2.64
dev.=1.1

3.17) ability to apply knowledge about current issues (economic/environmental/political/societal/etc.) to engineering-related problems.



n=27
av.=2.33
dev.=1.11

3.18) appreciation of the need to engage in life-long learning.



n=28
av.=3.43
dev.=1.14

4. TEACHING COMMENTS

4.1) What were the instructor's major strengths?

- (1) Able to further explain concepts that were not clear at first.
  (2) Always accessible outside of class for help.
  (3) Understands students concerns.
- (Future Dr.) Matthew Barry, while he did not exactly enjoy Thermodynamics, was enthusiastic about it, and knew the material well.
- Doctor Slaughter was not our professor, we had a graduate student named Matthew Berry. He explained the thermo stuff in a fairly interesting manner.
- Fair evaluation of work, down to earth and easy to understand, clearly expressed expectations
- Fairly evaluated my work
- Gave clear examples in class. Expressed and stressed to students that the material was important and easy to learn. Gave students clear ideas what to expect on tests, and gave fair homework and quizzes.
- He explained things in a very concise manner and fairly evaluated all work.
- He is very well prepared and structured. He engages well with the class.
- He used many good examples to cover the topics within the course. He also got to know certain students name's which was nice.
- He was clear in lectures, gave good examples that helped with students understanding of topics, homework helped further understanding.
- He was relatable, and easy to approach, clearly walked through examples on the black board and didn't just use a powerpoint
- Material
- Organized, helpful, very clear
- Organized, very nice notes
- Related to students, always went over examples, posted notes online,
- Taught the material in an organized manner. Had office hours but also made himself available at other times. Created homeworks that were fair and helpful.
- The instructor was able to go through the material at a good pace, and was very clear. These basic principles allow learning because they create an environment which the student can ask questions when confused. A lot of professors lack this essential skill of making the core ideas clear and also go at a good pace.
- The instructor was very friendly and easy to meet with outside of class.
- Very knowledgeable about the material. Very down to earth professor.
- Very organized
- Very organized, relaxed, approachable. Presented material very logically and always posted lecture notes with worked out examples.
- Went over how to go through cycles in depth and how to solve for different values. Gave good examples of EES software in order to use it sufficiently to solve problems.
- knowledge of course material, kept students engaged with penn state jokes
- relatable to students, explains examples well
- very accessible and answered questions well.

4.2) What were the instructor's major weaknesses?

- Emails
- Explanation of the material. He lacked though in providing an organized class and following his syllabus for the exams.
- Grading was a bit harsh on the test
- He could use more concrete examples. The subject can get rather dry as mere points on a graph.

- Honestly, I can't think of any.
- I feel like he and the grader don't really care very much. He cut the class down to 1 exam and a final out of nowhere. It was quite difficult to pay attention during the class. I don't like how applied thermo is such a drastic and complicated jump from intro. It is really quite a dramatic jump
- More specific examples of methodology and steps taken to solve problems and learn concepts the way he wants us to be tested on.
- None (2 Counts)
- None--Matt was an excellent professor for this course!
- Some lectures were rather boring and were read directly from the slides with little to no interaction.
- Some parts was a little too power point heavy. Was hard to take notes about new material.
- Some weaknesses were that examples were rushed through on PowerPoint presentations, leaving students with a bewildered and scattered feeling.
- The professor could outline better problems for the exams and point towards better preparing the student.
- There were times where (Future Dr.) Matthew Barry's powerpoints had multiple typos, causing confusion.
- Was a little monotone and relied heavily on his slides.
- We are solving a lot of problems using a computer program EES so sometimes it is hard to understand how we will be tested on exams without the use of a computer. I think I would have liked the homework to represent exams more with making us work out problems by hand.
- Went over too much review material at the beginning of the course that cut down on time for actual applied thermo material. Instead of going through the different values, maybe it would help to understand how to derive the Ts and Pv diagrams by knowing what components are in the process instead of focusing on how to get the values once we have these diagrams.
- could use more in depth examples to clarify concepts
- not the best at planning/pacing the course but was still adequate
- sometimes messed up examples, but no big deal
- took too long to review old material, was not impressed by his tests

5. COURSE COMMENTS

5.1) What aspects of this course were most beneficial to you?

- (1) PowerPoint Lecture Slides
  (2) Examples
  (3) EES for reading thermodynamics tables
  (4) Most importantly, the comprehensive review of Intro to Thermo for those of who had weaker backgrounds that others.
- A solid grounding in basic thermodynamics.
- Homework
- I liked that EES was incorporated into the material because I is a easy helpful resource that could be used later on.
- Learning EES, learning the theory along side with the math concepts
- Learning how to examine different thermodynamic cycles
- Learning how to use EES was very helpful. Also, I have become better at using P-v and T-s diagrams.
- Learning how to use EES will be helpful for me in the future.
- Learning to work step by step to solve certain processes.
- Practical application of previous courses, really cool and interesting material
- The Otto and Diesel cycles were the climax of the class.
- The ability to apply the concepts used in class to problems

- The analysis of many thermodynamic cycles was very valuable to me. I can use the knowledge obtained in this course to solve real world problems in power plants and cars.
- The different cycles help solidify each aspect of the course and see how they all relate.
- The most beneficial part was using the engineering software EES and learning about thermodynamic processes which will most likely come up again later in other courses.
- The power cycles were very interesting to learn about. Very useful real world knowledge
- The power point's provided from lecture were of great help.
- Understanding how energy-producing systems can become more efficient.
- Understanding how to use thermodynamics software to simplify arduous calculations that would typically be done by hand using the intro to thermo methods. Understanding how different processes are used in real life power generation cycles. Understanding the number of and different cycles available.
- brought Thermodynamics into a realistic picture. I now see it everywhere
- going over the different cycles and applying them to real life
- learning how to use engineering equation solver
- thermo
- thermos knowledge

5.2) What suggestions do you have to improve the course?

- Another exam.
- Don't let him teach, thankfully he is graduating.
- Examples should be performed HEAVILY in class. Some theory is necessary, but it is easy to get bogged down in it. When this happens, students have difficulty actually applying concepts to actual problems.
- Faster review of intro material
- Group projects (or a likewise mini project) are always something I think not only foster learning but also help the student learn to work with a group well also helping not only memorize information for an exam, but also explore concepts and see how they effect things.
- I am not a huge fan of thermo. It just is not all that interesting. Grade things the same and keep the class to 2 exams. I think that a majority of the class is going to have a hard time getting anymore a good grade unless he curves it.
- I know we spent a lot of time reviewing at the beginning of the class. I guess many of the students didn't know what was going on. Maybe give some more quizzes at the beginning, drop a few of the worse grades, and determine what material to reteach from there.
- I pay thousands of dollars a year to take classes at Pitt. While Matthew Barry was a great professor, I enrolled in the course to be taught by Dr. Slaughter. It would have been nice to be informed ahead of time that the class was going to be taught be a graduate student.
- Make EES optional.
- Maybe a little less review at the beginning of the course so we have more times for the cycles at the end.
- More emphasis on cycles, the curriculum was a lot of review at the beginning, which was helpful but I think I could have benefited from more actual ~applied~ thermo.
- More instructions on how to use EES
- More practice problems
- Not so much detail. Teach the algorithm and deriving from first principles more. This would stop time wasting and quibbling over numbers during in class examples.
- The course pre-req should be more standardized.
- The way Matt ran this course was not only fair, it was also effective, and I learned a lot more from him than I would with any other professor who could have taught this class.
- after the generic example processes we could examine some that are actually used by us

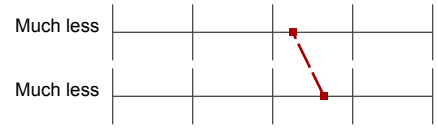
- less review, have more than one midterm
- more examples of what is expected to be learned
- move it to benedum cause cathedral heating is awful

Profile

Subunit: ENGINEERING-MECHANICAL & MATERIALS SCIENCE
Name of the instructor: Professor William Slaughter,
Name of the course: (Name of the survey) APPLIED THERMODYNAMICS(MEMS-1051)-1030

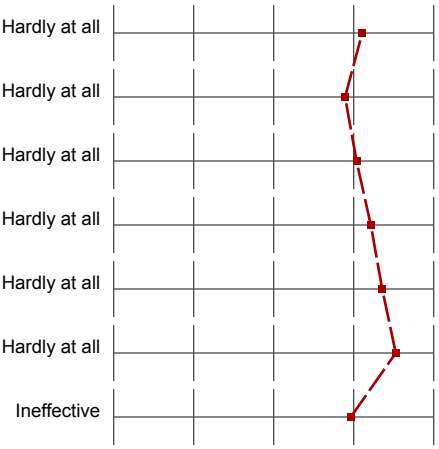
Values used in the profile line: Mean

1. SELF RATINGS



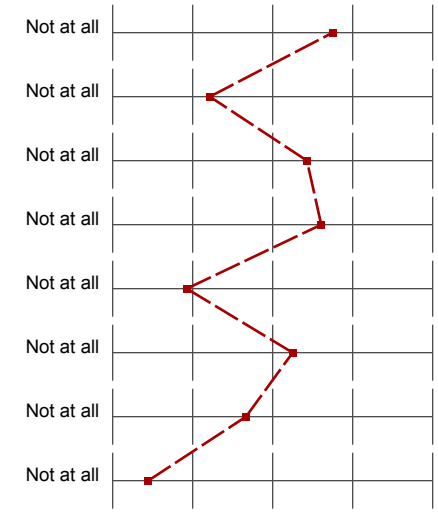
1.1)	Compared to other courses at the same level, the amount of work I did was:	Much less	Much more	n=28	av.=3.25 md=3.00 dev.=0.44
1.2)	In this course I have learned:	Much less	Much more	n=28	av.=3.64 md=4.00 dev.=0.68

2. TEACHING EVALUATION



2.1)	The instructor presented the course in an organized manner.	Hardly at all	To a very high degree	n=28	av.=4.11 md=4.00 dev.=0.69
2.2)	The instructor stimulated my thinking.	Hardly at all	To a very high degree	n=28	av.=3.89 md=4.00 dev.=0.74
2.3)	The instructor evaluated my work fairly.	Hardly at all	To a very high degree	n=28	av.=4.04 md=4.00 dev.=0.84
2.4)	The instructor made good use of examples to clarify concepts.	Hardly at all	To a very high degree	n=28	av.=4.21 md=4.00 dev.=0.79
2.5)	The instructor maintained a good learning environment.	Hardly at all	To a very high degree	n=28	av.=4.36 md=4.00 dev.=0.62
2.6)	The instructor was accessible to students. (Do not answer if no basis to judge)	Hardly at all	To a very high degree	n=19	av.=4.53 md=5.00 dev.=0.70
2.7)	Express your judgment of the instructor's **overall teaching effectiveness:**	Ineffective	Excellent	n=28	av.=3.96 md=4.00 dev.=0.92

3. SWANSON SCHOOL OF ENGINEERING ADDITIONAL ITEMS- select only one answer for each item



3.1)	ability to use math concepts to solve engineering problems.	Not at all	A great deal	n=28	av.=3.75 md=4.00 dev.=1.00
3.2)	ability to use chemistry concepts to solve engineering problems.	Not at all	A great deal	n=28	av.=2.21 md=2.00 dev.=1.10
3.3)	ability to use physics concepts to help solve engineering problems.	Not at all	A great deal	n=28	av.=3.43 md=3.00 dev.=1.00
3.4)	ability to use engineering concepts to help solve problems.	Not at all	A great deal	n=28	av.=3.61 md=4.00 dev.=0.96
3.5)	ability to design an experiment to obtain measurements or gain additional knowledge about a process.	Not at all	A great deal	n=27	av.=1.93 md=1.00 dev.=1.17
3.6)	ability to analyze and interpret engineering data.	Not at all	A great deal	n=28	av.=3.25 md=3.00 dev.=1.11
3.7)	ability to design a device or process to meet a stated need.	Not at all	A great deal	n=27	av.=2.67 md=3.00 dev.=1.18
3.8)	ability to function effectively in different team roles.	Not at all	A great deal	n=27	av.=1.44 md=1.00 dev.=0.75

3.9)	ability to formulate and solve engineering problems.	Not at all	A great deal	n=28 av.=3.61 md=4.00 dev.=1.17
3.10)	ability to use laboratory procedures and equipment.	Not at all	A great deal	n=27 av.=1.41 md=1.00 dev.=0.89
3.11)	ability to use software packages to solve engineering problems.	Not at all	A great deal	n=28 av.=4.07 md=4.00 dev.=0.94
3.12)	ability to use CAD software.	Not at all	A great deal	n=27 av.=1.11 md=1.00 dev.=0.42
3.13)	knowledge of professional and ethical responsibility.	Not at all	A great deal	n=28 av.=2.36 md=2.00 dev.=1.16
3.14)	ability to write reports effectively.	Not at all	A great deal	n=27 av.=1.33 md=1.00 dev.=0.68
3.15)	ability to make effective oral presentations.	Not at all	A great deal	n=27 av.=1.22 md=1.00 dev.=0.58
3.16)	knowledge about the potential risks (to the public) and impacts that an engineering solution or design may have.	Not at all	A great deal	n=28 av.=2.64 md=3.00 dev.=1.10
3.17)	ability to apply knowledge about current issues (economic/environmental/political/societal/etc.) to engineering-related problems.	Not at all	A great deal	n=27 av.=2.33 md=2.00 dev.=1.11
3.18)	appreciation of the need to engage in life-long learning.	Not at all	A great deal	n=28 av.=3.43 md=3.00 dev.=1.14