

The Assignment for Friday.... any Friday. . .

“WHO TO HIMSELF IS LAW, NO LAW DOTH NEED”

Many (most?) students have the belief that one can master an engineering or science course by reading the textbook and by reviewing the solutions (homework) of others (passive learning memory). At the time of the first examination, such students usually fail to solve problems slightly different from the homework, and invariably complain that that test was too long. The purpose of the homework is to train the student in reshuffling the building blocks in his/her brain (1st, 2nd laws, math, definitions, etc.) to arrive quickly at the correct solution. The necessary parts of this training (learning) are:

1. Deciphering of written (or verbal) information, pertinent or not, into a coherent whole (defining the system). Student: “The working of the problem was poor.”
2. Recognition of a change in state. (building blocks – property diagrams)
3. Discrimination applied to the data.
4. Application of basic principles.
5. Wandering* into blind alleys.
6. Arriving at the correct solution.

To apply these steps to four or five problems in one hour requires practice! (Think of your own experiences: Haven't you spent several hours on a problem that you can do now in several minutes?)

Another bad fault (forgive us...) is to delay working on a subject until one is a day behind (or a week or more, it matters little):

1. Understanding of the current discussion in the classroom is decreased.
2. “Catching-up” is difficult (hare and the tortoise).
3. Enjoyment of the course is decreased (usually, to zero).

Quite obviously, the average student will do better, if he is forced to turn in his/her homework promptly, and homework is a part of the final grade. But we shall not do this:

“Education does not mean teaching students what they do not know. It means teaching them to behave as they do not behave.” - John Ruskin

Too, copying is encouraged:

“They that live by the sword shall perish with the sword.”

Students seem to enjoy saying that they are ‘slow’ or ‘not-as-smart’ as their fellows; this is pure rationalization to excuse day dreaming (non-married students), or bad time efficiency (married students), or down-right laziness (rich students):

“I do not despise genius – indeed, I wish I had a basket full of it. But yet, after a great deal of experience and observation, I am convinced that industry is a better horse to ride than genius.” - Julian Ralph

*Man learns from his failures...