

1st Essay--due 10/9/02

EITHER: read Ferguson, Eugene, **Engineering and the mind's eye** (in the bookstore) and write an essay on the following. . .

Companies are becoming increasingly critical of new graduate engineers. The complaint is not that the new graduates aren't smart, or that their scientific training isn't adequate; but rather that these graduates don't know how to use this training. They don't know how to apply it to real engineering problems.

Eugene Ferguson in **Engineering and the Mind's Eye** is in agreement. He thinks that university curricula miss the real essence of engineering. Programs emphasize the theoretical aspects of the discipline—science, analysis, mathematical description, and computer simulation, but ignore a myriad of other aspects that are essential for successful engineering projects.

Write a 3-5 page essay addressing the following two questions: What does Ferguson emphasize in relation to the four areas mentioned above? Given Ferguson's perspective, what do you think an introductory course in engineering should contain in terms of content and philosophy?

OR: read one of the following (you'll have to get the book yourself; copies that you can browse through are in MD210)

Drexler, K. Eric, **Engines of Creation** (nanotechnology)
Gordon, J. E., **The New Science of Strong Materials**
Billington, David, **The Tower and the Bridge**
White and Doering, **Electrical Engineering Uncovered**
Ball, Philip, **Designing the Molecular World**
Feynman, Richard, **Feynman Lectures on Computation**
Asimov, Isaac, **I, Robot**
Capek, Karel, **Toward the Radical Center**

Then, write a 3-5 page essay on what role engineering plays in that area. In view of what is presented in the book, where do you think the discipline could be in 5-10 years. How will technology/engineering/science have to advance/change to achieve that goal. (Don't forget cost considerations.) Support your position.

Alternatively, you may develop your own thesis for the paper – but engineering must be central to your theme.

Formatting? 12 pt., Times New Roman, Double-spaced, 1 in. margins., 3 – 5 pages