Title:
Chemical Engineering - A Convincing Argument

Word Count:
665

Summary:
Professor: So...You are interested in studying Chemical Engineering?

Student: Mmmm. Dunno, all that pollution and stuff is pretty bad.

Professor: You think the industry is the source of most pollution then?

Student: Obviously.

Professor: You have done research into this?

Student: Hummph. No need to, everyone knows that is true.

Professor: Really? My research tells me differently. Tell me, what do you mean when you say pollution?

Student: Smells, poisoned ...

Keywords:
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Article Body:
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when you say pollution?

Student: Smells, poisoned streams and people dying.

Professor: And you think this all comes down to the chemical industry?

Student: Yes.

Professor: What about all the gases that come from your boiler at home? What about the gases that come out of your car? What about all the gases that come out of the power station to produce the electricity for your lights or air-conditioning at home? What about...

Student: Yeah, yeah, whatever.

Professor: You insult me by picking an argument, and then refusing to listen to an opposing view. I do not want you on my course anyway, move along and let the next person in please.

Student: What do you mean, you don’t want me? Huh?

Professor: Exactly that, move along now.

Student: OK, convince me that the people running those chemical plants are all good guys who produce no air pollution

Professor: That was not what I said. They do produce pollution, but much less of it than they used to and much less than any power station does. There are controls on what gases they can release into the air, and how much of each gas. The companies have to monitor their emissions and tell the government if they release too much.

Student: Very likely.

Professor: The government send inspectors around to check that the monitoring is in place. These officials make unannounced visits and if they find any missing data there had better be a good explanation.

Student: Mmmm

Professor: The companies are set five year targets to reduce their emissions below current levels. When they hit those targets, even if they hit them after two years, the government sets them another reduction target that has to be

reached within another five years

Student: That’s not very fair.

Professor: It seems unfair at times, but the constant drive for reduced emissions makes the company invest in research and new processes to reduce the amount of waste gases it releases. It encourages the company to find uses for those waste gases.

Student: That sounds pretty good.

Professor: Technology is moving on all the time. Processes become more efficient and pollution is reduced. No industry can ever reduce its pollution to zero, though.

Student: Why not?

Professor: It’s a law of diminishing returns. 90% of the emissions can be removed at low cost. That leaves 10%. A further 9% can be removed at high cost, still leaving 1%. An extremely high cost is needed to remove the next 0.9%, but there is still 0.1% of the original amount. You can see that the removal cost is increasing, but the pollution reduction is becoming more and more marginal.

Student: Right. So is chemical engineering a good choice then?

Professor: It depends... You need to be good at solving problems, to be able to think laterally. You need to be able to work as part of a team, too.

Student: Right...

Professor: You also need to be interested in a career in management

Student: Huh, why’s that?

Professor: Technology moves along fast in this field and within ten years of gaining your degree your knowledge will be out-dated. There will be new graduates competing for the jobs you will have been doing, who have up to date knowledge. Most chemical engineers move into management after about twelve years in the job. Their background of engineering is still useful, but they recognize that they are no longer at the cutting edge.

Student: But management can be a good career to, can’t it?

Professor: It can, indeed. Are you interested in finding out more then?

Student: Definitely, and thanks.