

Dear 2011 HonorsCalc students,

This is a quick introduction and update about 110.113, which the registrar claims you've enrolled in. I hope this finds you well, and that the weather is exciting rather than dangerous.

My experience tells me to expect a reasonable amount of chaos at the beginning of any class, as the students and instructor get used to each others' language and methods, so I figure to ease into this semester by talking about calculus and its place in mathematics and culture [my wife is a linguistic anthropologist, and according to her, mathematics is just another symbolic system, not so different from football or tango . . .]. I figure you to be a pretty sophisticated audience, already technically quite competent, so although the course material itself won't be so hairy (just plain vanilla one-variable calculus, mostly), I plan to approach it from a seriously advanced point of view, and to confront honestly things like the construction of the number system, and the related understanding of time and space that has served science so well since the Renaissance.

Thomas Kuhn

http://en.wikipedia.org/wiki/The_Structure_of_Scientific_Revolutions

says somewhere that a scientific theory is not just a collection of laws or axioms, but carries with it a body of central [prototypical? focal?] examples that provide models for further extensions of the theory. I've attached to this email a short list of nice classical calculus review problems, mostly centered around optimization, which I expect will be more or less familiar to everybody. I'd like to ask you to look them over, and be prepared to present one of them in class, sometime in the next week or two, as a way of getting to know each other. [I hope everybody doesn't choose problem one, though: it may be a little too easy.] In general, I would encourage you to talk about these problems, and the course material in general, with each other, and with other interested students: good mathematics makes heavy demands on **both** sides of the brain, computational and geometric, and it helps to verbalize. I don't think it's a good idea to bang your head against the wall when you get stuck, either: that's just aversion therapy. The Book of Nature is an open book, said Galileo; but it happens to be written in something like God's own private language, and learning to speak it is well worth the effort, so talk to your friends about it.

I'm looking forward to meeting you all, and expect this to be an interesting and engaging class. Please don't hesitate to let me know of any questions or concerns you may have. I depend a **lot** on email, and try to be a usefully responsive correspondent.

All best, sincerely

Jack