Themes for six imagined courses, November 2014

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Title 1: An informed imagination about what a Roman Citizen might have been

A light survey of first-century Roman empire could set the stage for observing some topics in Roman history and culture. Part of the idea is to combine small portions of Latin with some contemporaneous Mediterranean history, so the language and the cultural artifacts inform each other. If there is time to progress farther, we could sample small portions of pre-renaissance European history, again with snatches of Latin of that time to enhance the flavor. People are now panicking about Ebola as if the Bubonic Plagues never happened! Most contemporary students understand little of United States history and nothing at all about our European roots. Many people have not been empowered to visualize what a study of classical Greek and Latin have to offer.

possible sources:


individualized Internet sources

Title 2: Statistics, Cladistics, and Error Measurement

Neither statistics nor cladistics are strictly either a science or a branch of mathematics, although they manifest attitudes that affect how we use mathematics to interpret scientific observations. Both subjects, or ideas, are born of the quest for honesty in interpretation of events, entirely in opposition to opportunistic pouncing on misinterpretations that give the appearance of simple answers to rather awful questions. Error measurement is a close cousin of both, and can be accomplished in a rough fashion with extremely simple arithmetic. Illustrations from mathematics, paleontology, astronomy, and other searches into extreme situations. There is not a huge amount of material in this conception, but serves as an excellent opportunity to explore mathematical basics and ideas about time scales. An implication is getting deep into the question about what science is.

possible sources:


individualized Internet sources
Title 3: Introduction to Contemporary Climatology with elementary practice calculations.

Contemporary climatology is of timely interest and serves well as an introduction to practical computations. How many cubic feet of atmosphere would we have to scrub per hour to effectively reduce the carbon dioxide and methane in the stratosphere? How many calories do we get from burning a ton of coal and how much does that add (not counting the carbon dioxide supplied) to the whole warming situation? Possibly a comparison of energy and byproducts from various fuels. Appropriate chemistry would be introduced, or perhaps some investigations of the possible relationship between global warming and previous species extinctions.

possible sources:

individual Internet resources and news reports

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Title 4: Time in Geology and Palaeontology.

History and ideas of geology and palaeontology as an introduction to practical mathematical computation. Just getting one’s head around the time scale of geological processes is so disturbing philosophically, that as late as 1785, Hutton had the temerity to tell the Royal Society of Edinburgh, about the geological history of the earth, that he could see "no vestige of a beginning, no prospect of an end." Several years later, the brave assertion was made that layers of rock on top were newer than rocks underneath. Yet it took over a century for people to begin to fathom the awful numbers of years and their meaning and characteristics, and the incredible majesty of earth’s dynamism. The Gaia concept appears to be an understatement. We encounter the implications of the conflicts between beliefs and evidence. The incredible idea of plate tectonics revolution was hinted at in 1915 by Wegener, but didn't have evidence and believers until the second half of the century.

possible sources:

individual Internet resources

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Title 5: Why do People Hate Math?

Theorizing about why people hate math is fun, but an exploration of different sorts of abstract thinking might result in personal enlightenment on the issue. Illustrations of how abstract thinking works from Descartes and Pascal, Boolean Algebra, Linear Algebra, Euclidian Geometry (including Archimedes’ proto-calculus). We will ponder how this terrible deficit can be removed from the socialization experience of future children. The questions occur as to how we become afraid or insulted by intellectual pursuits in general and abstraction in particular, and what does it mean to “make sense”?

possible sources:

individualized Internet resources