

Technology 21 – A Course on Technology for Non-Technologists

Abstract

There is a need to prepare non-technologists to assume senior management, political and other leadership roles in a highly technological world. Many non-technical college students have a fear and distrust of learning things mathematical, scientific or technical. At the University of Denver we have created a successful three-quarter long course called *Technology 21* that has been offered for thirteen years to non-engineering and non-science students as a means to meet their science general education requirement. The course covers the three basic resources of technology – Energy, Materials and Information – during the first two quarters. At the start of the first quarter a discussion of numbers to include orders of magnitude, charting of data and misrepresentation of data using numbers is presented for a better understanding of the numerical content of the course. The material in these first two quarters remains relatively constant and includes numeric and laboratory components. The course culminates with a capstone quarter wherein students working in groups of ten are required to solve a current national or global technological issue for either the current US president or Congress. Issues change every year and address such topics as “What should US policy be towards: *Electricity*”, “*Petroleum*”, “*Automobiles*”, “*Global Warming*”, “*The Internet*”, or “*Nuclear Energy*”. Each group is required to produce a learned, 20-page, single-space, coherent policy paper that considers the scientific, technological, social, political, economic, legal, environmental and ethical aspects of the issue. Each group must orally defend their position vis-à-vis other positions arrived to by the other groups. Lectures by individuals from appropriate industry, political, social organizations, as well as, other experts from across the faculty add realism to the course since they often express contradictory views. Enrollment is usually capped at about 90 students and the course has always had a long waiting list.