General Science 1000

Course Outline, Section 1

The Nature of Scientific Enquiry

Contact Information

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Overview

This module will introduce both practical and philosophical aspects of the nature of scientific enquiry, focusing how measurements are made, reported, and used.

Topics: Definitions of terms (large/small numbers, S.I. units, etc.)
Definitions of fields (science, engineering, technology, etc.)
The nature of science (scientific revolutions, experimental *vs.* observational)
Causality, use of statistics in science

Format: Mixture of lectures and seminars, plus a small quiz. Students will be expected to participate in class both in lectures and in group discussions on topics presented by others (students and the instructor).

Presentation: A presentation of a current scientific subject *chosen by the student*. Topics can include any scientific subject, but must include scientifically relevant information (from reputable sources) – good starting points are popular science magazines such as Popular Mechanics, Scientific American, the Discovery Channel website, etc. Wiki-style websites are untrustworthy as primary sources, and the popular media (CNN, newspapers, etc.) often contains factual errors in science reporting. University-hosted websites are usually safe *if* they are part of a scientific department's sub-site; similarly, non-political governmental websites (*e.g.* NASA, Health Canada, National Research Council) are usually okay. Non-governmental organizations (NGOs) often have a political agenda and are therefore not to be trusted as a primary source either.
Students must approve topic with the instructor (to avoid duplication)
10 minutes long, done in pairs. The students will also submit a 1-page summary synopsis on their topic (due on the date given below)
Marks will be given for clarity of presentation, use of visual aids (*e.g.* PowerPoint), and scientific content.

Marking Scheme:

Item	*Value:* (% of this section)	(% of entire course)
quiz	36	6
1-page synopsis of seminar topic (one per group)	18	3
Presentation	36	6
Participation	10	1.7
Total:	100	16.7 ($^1/_6$)

Dates: September 14, 16, 21 – lectures
September 23 – lecture and tutorial, presentation synopsis due
September 28 – Quiz
September 30; October 5, 7 – Presentations