General Science 1110

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 1: Based on a reading provided by the instructor. 5 minutes long. Done in pairs.

Presentation 2: 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.

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)

Marking Scheme:

15%	short quiz
25%	Presentation 1
20%	1-page synopsis of seminar topic (one per group)
30%	Presentation 2
10%	Participation

Dates: September 8, 10, 15 – lectures
September 17 – quiz
September 17, 22 – Presentation 1
September 22 – Synopsis for Presentation 2 due
September 24, 29; October 1 – Presentation 2