

GRANDE PRAIRIE REGIONAL COLLEGE
ACADEMIC UPGRADING DEPARTMENT

SEP. 05 2002

COURSE OUTLINE

SC0100 : SCIENCE AND SOCIETY

INSTRUCTORS:	Bill Shaw	Devinder Sekhon
OFFICE:	C207	C417
PHONE:	539 - 2713	539-2991
OFFICE HOURS:	As posted on the Office door, or by appointment	
TEXT:	No text required	
SUPPLIES:	Plastic folder to hold loose-leaf, pen, pencil & ruler.	
CLASSROOM:	B305 Monday / Friday 11:30 - 12:50 Tuesday / Thursday 11:30 - 12:20	

COURSE GOALS:

This course is intended to (a) provide students with the basic knowledge, understanding, and appreciation of science and science-related issues needed to be an informed citizen, (b) provide some preparation for students entering 0100 level science courses at GPRC.

COURSE CONTENT:

Through the course there will be an emphasis on two major themes for science in our times: (1) **science**: what it is and how it works, and (2) **science issues in society**: how science and technology affect our lives, what the different sides of the issues are, and what we should do about it. The exact details of the course will depend on class and instructor interests, and on which current science-technology issues are interesting and important.

Unit#1:

September 5 - 20
12.5 hrs

Lab:

Acid & Bases

Ecology and Ecosystems

- interdependence
- photosynthesis and respiration
- food chains & webs, pyramid of energy
- greenhouse effect, acid rain, ozone depletion
- water cycle, carbon cycle, nitrogen cycle
- composition of atmosphere, convection currents

Unit#2

September 23 - Oct. 11
13.5 hrs

Lab:

Density

Chemistry

- classification of matter
- atoms, elements (symbols), molecules, & compounds
- mass, density, weight, and volume
- chemical properties/changes, solutions, mixtures
- atomic mass, atomic number
- chemical reactions, reactants, products, formulas
- impact on technology

Unit#3

October 15 - Nov. 01
12 hrs

Physics

- What is physics?
- SI unit of measurement
- fundamental units and derived units
- scientific notation
- position / time
- distance / displacement
- speed, velocity, acceleration
- concept of vectors / scalars

Unit#4

November 04 - 18
10 hrs

Scientific Method (Process)

- science- what is it & what it isn't
- how science works
- technology: what is it
- how technology relates to science

Unit#5

November 19 - Dec. 06
13.5 hrs

Lab:

Cell

Biology

- Cells, DNA, & Genes
- cells: the unit of life
- prokaryote and eukaryote cells
- asexual / sexual reproduction
- DNA structure /replication
- mitosis, genes & the genetic code
- reproduction & inheritance
- Human genome project, biotechnology

Teaching Methods:

Some or all of the following, according to student needs and interest:

- a. Lecture/discussion: with an emphasis on class participation - most classes will be of this type.
- b. Small - group activities: small group discussion, projects, exercises, presentations.
- c. Practical - activities: in class and in lab: observing hypothesis, collecting data, and interpreting data, classifying, problem solving, and so; as a whole class, in groups and in pairs.
- d. Individual activities: assignments based on newspaper/magazine articles, individual presentations, research project.
- e. Other possibilities: visits to places of scientific interest, guest speakers, or your suggestions.

EVALUATION:

Unit Tests : Unit 1,2,3,5 (12% each)	48%
Unit Quizzes : 3% each x 5 units	15%
Unit Test #4 : Scientific Method	7%
Plato Activities (80% pass mark for each test)	10%
Internet research project	5%
Lab Reports / or Class Activity	<u>15%</u>
Total	100%

Tests and Quizzes:

There will be a test (50 min.) about every two weeks or so, for a total of five tests for the course. Absence from tests, or labs, will result in a zero for that test, or lab unless a previous arrangement is made with the instructor for medical or other legitimate reasons. The quizzes will be 3% each for the 5 units. You will be informed as to the date of the quizzes. **Please be prepared to write the quiz on "one days notice".**

TOTAL 47 WORKING DAYS!