Registrar

COURSE OUTLINE

# SCIENCE 100: SCIENCE AND SOCIETY

GPRC Fall 1991

**Instructor:** Keith Roscoe
**Office:** C213
**Phone:** 539-2095 (office), 539-6842 (home)
**Time & Place:** MTWRF, 10:00, J227
**Office Hours:** MW 11:00-12:00, 14:00-15:00; TR 14:30-15:30
**Text:** none (we will use course notes and handouts instead)

## Course Goals:

This course is intended to (a) provide students with a basic knowledge, understanding and appreciation of science and of science and technology-related social issues needed to be an informed citizen, (b) provide some preparation for students entering 110 level science courses at GPRC.

## Course Content

Throughout 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, and what should we do about it.
The exact details of the course content will depend on the interests of the class and instructor and on which issues and knowledge are currently interesting, controversial, and important. Here is a suggested outline:

| UNIT | CONCEPTS | EXAMPLE ISSUES |
|---|---|---|
| #1 Science &Technology | • science-what it is & what it isn't<br>• how science works<br>• technology: what it is<br>• how technology relates to science | What effects do science and technology have on society? (Are science and technology good, bad, or neutral?) Should science and technology be controlled? By whom? |
| #2 The Environment in Danger | • ecosystems & ecology<br>• interdependence<br>• food chains & webs<br>• greenhouse effect<br>• ozone depletion | Is the environment in danger? What should we do to protect the environment? |
| #3 Cells, DNA, & Genes | • cells: the unit of life<br>• genes and the genetic code<br>• reproduction & inheritance<br>• biotechnology | Should we have total control over the life and death of living things (eg animals for food and experimentation, gene therapy, making new organisms)? |

| | | |
|---|---|---|
| #4 Chemicals in Our Environment | • water pollution & hazardous wastes<br>• atoms, molecules and compounds<br>• chemical reactions<br>• solutions | What should we do about water pollution and the disposal of wastes? |
| #5 Energy and the Environment | • forms of energy<br>• energy conservation<br>• laws of motion<br>• electromagnetic radiation<br>• energy alterenatives | How safe is electromagnetic radiation in our envionment?<br>What energy sources should we be using now and in the future? |

**Teaching Methods:**

Some or all of the following will be used, according to student needs and interests:
(a) *Lecture /discussion:* with an emphasis on class participation; most classes will be of this type.
(b) *Small-group activities* : small group discussions, projects, exercises, presentations.
(c) *Practical activities:* in class and in the lab; observing, hypothesizing, collecting and interpreting data, classifying, problem-solving, and so on; as a whole class, in groups, and pairs.
(d) *Individual projects/activities* : clipping file, individual presentation, research (library) project.
(e) *Other possiblities :* visits to places of scientific interest, guest speakers, your suggestions.

**Evaluation:**

| | |
|---|---|
| Tests and Quizzes | 20% |
| Assignments & Labs | 40% |
| Midterm Exam | 10% |
| Final Exam | 30% |
| | 100% |

**Tests and Exams:**

There will be a test (50 min) about every three weeks or so, for a total of four tests for the course. "Quickie quizzes" (5-10 min) will be given at intervals between tests. Absence from tests, quizzes, or exams will result in a mark of zero for that test or exam unless a previous arrangement is made with the instructor for medical or other legitimate reason.

**Student Responsibilities:**

Here are some of your basic responsibilities as a student, from page 26 of the GPRC calendar:

• ***arrive on time and remain for the duration of scheduled classes or activities.***

(Regular attendance is expected, and attendance is taken. Students who miss more than 20% of classes may be barred from writing the final exam. Classes will start on time, so please arrive a few minutes early.)

• ***respect instructor's right to expect expect ...assignments to be submitted at the times specified, and establish penalities for failure to comply with deadlines.***

(failure to submit assignments and reports on time will result in late penalties:
1 day late= -25%; 2 days late= -50%, 3 days late= -100%)

• ***respect an instructor's right to expect assignments to be neatly presented.***

(submit lab reports and any assignments following the required format exactly)

• ***respect an instructor's right to expect that any work submitted by the student is original, and to know what plagiarism and other forms of cheating are.***

• ***respect an instructor's right to appropriate classroom behaviour...the instructor has the right to exclude a student from learning activities should a student be disruptive.***

• ***write tests and examinations at times scheduled by instructor.***

• ***assume responsibility for course work and assignments missed.***