Registrar

DEPARTMENT OF ACADEMIC DEVELOPMENT

PHYSICS 120

COURSE OUTLINE

INSTRUCTOR: Nancy Fraser

PHONE NUMBER: 539-~~2959~~ 2980

COURSE GOALS: This course is designed to give the student an understanding of some basic concepts and principles of physical science involving waves, sound, light, optics, and color. The student will develop problem-solving skills and gain an appreciation of the role of physics in modern society.

FORMAT: The course will be mainly lectures. There will also be a lab and a problem session component to Physics 120.

ATTENDANCE POLICY: Regular attendance is expected. Attendance at labs and problem sessions is absolutely required.

EVALUATION: Your final mark will be based on 1 unit test , 4 labs, 4 hand-in assignments, homework assignments, and a final exam.

Assignments	20%
Labs	20%
Mid Term	15%
Test	5%
Final Exam	40%
	100%

Percentage/Grade Point Equivalency

%	Grade Point
90 - 100	9
80 - 89	8
72 - 79	7
65 - 71	6
57 - 64	5
50 - 56	4
45 - 49	3
26 - 44	2
0 - 25	1

* There will be a penalty of 2 stanine grades per day for late assignments or labs.

COURSE CONTENT

1. Study heat. Distinguish between heat and temperature. Study Celsius and Kelvin scales of measuring temperature. Study first and second laws of thermodynamics.

2. Study gas laws: Boyles' Charles' and combined laws.

3. a) Simple Harmonic Motion: Frequency, Period, Problem solving.
   b) Waves

4. a) Sound: Speed, etc.
   b) Resonance: Vibrations, Resonance in air columns.

5. Reflection of Light: Mirrors, Law of reflection, Formation of images.

6. Refraction: Law of refraction, Index of refraction, Lenses, Total internal reflection.

7. Wave Nature of Light: Interference; Diffraction, Newton's rings, etc.

8. a) Light Energy: Speed of Light, Intensity and Illumination.
   b) Color: Dispersion; Primary and secondary colors; Mixing of colors, The eye, colors.
   c) Blackbody Radiation.

9. There may be time remaining for topics of interest; eg. astronomy, laser, etc.