Syllabus: English as a Second Language, Science

"Intellectual growth should commence at birth and cease only at death"
-------Albert Einstein

"The more I practice, the luckier I get"
- - - Golfer Gary Player

Instructor : Dr. Manju Prakash **Year:** 2009-2010

Course Goals & Course Philosophy:

The goal of English as a Second Language, Science course is to prepare students to succeed in future major Science courses. This is a comprehensive science course that covers Physical Science, Chemistry, and Biology. The focus will be to familiarize students with scientific vocabulary in English and the skills to build a foundation in science.

Students are expected to produce legible, scientifically meaningful, and grammatically correct work. The theme of this course is "Forces, Energy, & Matter."

What Should I do to Succeed in the Course?

You should be an active participant in the learning process. With hard work you will meet the goals of this course. To succeed in this course with a good grade you should follow these guidelines:

- Keep asking questions. Chances are very good that others are in the same situation as you.
- Take your homework seriously.
- Prepare your lab reports thoroughly. This will enable you to develop a strong scientific vocabulary to describe physical phenomena.
- Try to identify key concepts while reading the textbook regularly and carefully.
- Focus on developing strong problem solving skills.

Course Requirements:

- Textbook: Physical Science (4th edition) by L. Bernstein, Martin Schachter, Alan Winkler & Stanley Wolfe.
- Large classroom notebook
- Large 3-ring binder (homework)
- Laboratory notebook
- Netbook & Scientific Calculator
- Open mind, alertness, and consistent work

Grading Procedure:

Your end of the year grade will be determined as follows:

First Trimester: 15%
Second Trimester: 25%
Third Trimester: 35%
Mid-term exam: 10%
Final cumulative exam: 15%

Each Trimester has a grade breakdown as follows:

Laboratory: 15%
Quizzes: 25 %
Tests: 40%
Projects: 20%

There will be short quiz given at the end of each unit.

The grade-scale scheme is as follows:

A+: 97-100	D+: 67-69
A: 93-96	D: 63-66
A-: 90-92	D- 60-62
B+: 87-89	F: 0-59
B: 83-86	
B- 80-82	
C+: 77-79	
C: 73-76	
C-: 70-72	

Details on the projects as well as rubric will be provided during the trimesters. Dates on tests and quizzes will be announced a week before they are scheduled.

Classroom Policies:

- Please do not talk during the lecture-it is rude and disturbs others.
- Be punctual, late arrival puts you at disadvantage and distracts others.
- Cell phones, pagers, and iPods are not allowed during the classroom instruction.
- Always speak English. Please seek my help during Academic Help period.
- Come prepared and take charge of your learning process.
- Cheating or plagiarism may result in failing grade for the assessment. Such incidents may be reported to Honor Council.

Homework Policies:

- Make a reasonable attempt at all assigned questions.
- Homework will be assigned everyday and will be due next day.
- Student groups can be effective. However, when a student submits an assignment, he/she is stating that the material submitted has been fully comprehended. Therefore, joint submissions and plagiarism are unacceptable.

●When returned, homework and all other submitted items (tests, quizzes, labs etc.) are to be saved in your 3-ring binder.

●All submitted assignments must begin with the student's name and the homework assignment.

Trimester One

Week (#)	Chapters	Topics
1	1, 4	Scientific Process. Types of Matter
2	2, 3	Density, Elements, and Atoms
3	12	Forces
4	14	Energy
5	4	Compounds and Mixture
6	5,6	Solution and Suspensions
7	7, 8	Chemical Formula and Chemical Reactions
8	9	Acids and Bases
*********	**Parents Weekend**	********
9	10, 11	Metals
10	13, 14	Motion
11	1-14	Review and Final Test

Trimester 2

Week (#)	Chapters	Topics
1	14	Work & Energy
2	15	Machines
3	16	Heat
4	17	Waves
5	18	Sound
6	19	Light
7	Review	All
8	Review	All
9	**Review and Mid-Year Exam**	1-19
10	20	Circuits
11	21	Magnetism
12	14-21	Review and Final Test

Trimester 3

Week (#)	Dates	Chapter	Topics
1	3/1-3/5	21	Magnetism & Electromagnetism
2	3/8-3/12	Hand-outs	Cell Structure
3	3/25-3/26	Hand-outs	Cell Functions
4	3/29-4/1	Hand-outs	Microorganisms
5	4/6-4/9	Hand-outs	Plants
6	4/12-4/16	Hand-outs	Plants
7	4/19-4/23	Hand-outs	Invertebrates
8	4/26-4/30	Hand-outs	Invertebrates/ Vertebrates
9	5/3-5/7	Hand-outs	Vertebrates
10	5/10-5/14	Review	All
11	5/17-5/21	Review	All
12	**5/24-5/26**	**Final Exam**	**All**

Tentative Outline of Topics

1. Scientific Process & Properties of Matter

A. Scientific Process
   (a) Predict-Observe-Explore-Explain
   (b) Organization and Classification

B. States of Matter
   (a) Solids
   (b) Liquids
   (c) Gases
   (d) Changes in States

C. Properties and Structure of Matter
   (a) Density
   (b) Atoms
   (c) Elements

2. Forces and Energy

A. Forces
   (a) What is Pull/Push?
   (b) Gravity
   (c) Friction and Air Resistance
   (d) Pressure

B. Energy
   (a) Forms of Energy
   (b) Liquids
   (c) Gases
   (d) Changes in States

3. Structure and Behavior of Matter

A. Atoms & Elements
B. Compounds and Mixtures
C. Solutions and Suspension
D. Chemical Formula
E. Chemical Reactions
F. Acids and Bases
G. Metals & Nonmetals

4. Motion, Energy, & Work

A. Motion
   (a) What is motion?
   (b) Speed, Velocity & Acceleration
   (c) Newton's Three Laws

B. Energy and Work
   (a) Energy and Motion
   (b) Energy and Power
   (c) Types of Machines
   (d) Machines and Work

5. Heat and Energy

A. Relation between Heat and Energy
B. Heat and Temperature
C. Heat Transfer Processes
D Specific Heat
E. Thermal Expansion

6. Waves, Sound, and Light

A. Waves
   (a) What are Waves?
   (b) Properties and Types of Waves

B. Sound
   (a) Sound as a Wave
   (b) Properties of Sound
   (c) Doppler Effect

C. Light
   (a) Light as a Wave
   (b) Electromagnetic Spectrum
   (c) Properties of Light
   (d) Photosynthesis

7. Electricity & Magnetism

A. Static Electricity
B. Current Electricity
C. Magnetism
D. Electromagnetism

8. Biology

A. Introduction to Biology
B. Cell Structure
(a) Cell Membrane
(b) Cytoplasm
(c) Cell Wall
(d) Nucleus
(e) Chromosomes
(f) Mitochondria
(g) Chloroplasts
(h) Endoplasmic Reticulum and Golgi
(i) Vesicles
C. Cell Function
(a) Passive and Active Transport
(b) Phagocytosis
(c) Pinocytosis
(d) Mitosis
D. Microorganisms
(a) Eukaryotes
(b) Prokaryotes
(c) Bacteria
(d) Fungi
E. Plants
(a) Photosynthesis
(b) Basic Structure
(c) Mosses and Liverworts
(d) Ferns and Horsetails
(e) Gymnosperms
(f) Angiosperms
F. Invertebrates
(a) Starfish and Urchins
(b) Octopi and Squid
(c) Snails – Clams
(d) Flat Worms, Round Worms, Segmented Worms
(e) Insects
(f) Spiders
(g) Crustaceans
G. Vertebrates
(a) Fish
(b) Amphibians

(c) Reptiles
(d) Birds
(e) Mammals

Laboratory Experiments

- Determine Density
- Determine g
- Frictional Force
- Conservation of Energy
- Acids & Bases
- Period of a Pendulum
- Sound as a Wave
- Properties of Light
- Circuits
- Classification of Plants