COLLEGE OF ST JOSEPH

Division of Psychology and Human Services

Course Syllabus

02/15/2012

COURSE NUMBER: Sci 104 Spring 2012 **CLASS TIME**: T/Th 10:50 – 12:05 a.m.

COURSE TITLE: **Physical Science II w/lab**

COURSE DESCRIPTION:

An introduction to the fundamentals of chemistry, physics, geology, astronomy, weather and climate, and oceanography. Hands-on activities and real world applications will be emphasized along with the effects on society and human activity.

INSTRUCTOR: W. David Hoisington, Ph. D.
OFFICE HOURS: arrange with the professor
EMAIL: dhoisington@csj.edu or healertalk@comcast.net

RESOURCES:

REQUIRED TEXTS:

Physical Science, 9e by Bill W. Tillery (McGraw Hill)

Additional resources will be used from the professor's website and sent by email.

GOALS AND OBJECTIVES:

At the conclusion of this course the student will have:

1. Demonstrated an understanding of the methods scientists use to explore natural phenomena (scientific method), including observation, measurement, data collection and synthesis, hypothesis development, experimentation, mathematical analysis and data evaluation, and drawing conclusions with applications.
2. Applied scientific data concepts and models to real world problems. This will include a demonstrated skill with laboratory procedures.
3. Developed active learning skills through critical thinking;
4. An understanding of how chemical elements and compounds form the basis of the universe and provide real world examples of their actions;
5. Knowledge of how the Earth was formed, the rock cycle and the importance of these to modern man.
6. An understanding of the lithosphere, hydrosphere, and atmosphere and how they interact to affect the climate and society.
7. Knowledge of the Earth's place in our solar system and in the universe.

Methodology:

The format will be largely Socratic and "hands-on" in nature. Student will be asked to "seek and find" answers, just like they would if they in the "real world" trying to complete a job or teach about science. This will include analysis of scientific information, creation of hands-on projects, the use of laboratory equipment, and presentations of real world applications. Answers will not be given directly by the professor. Three papers/projects will be written by each student and each presented orally within the class. The student will also complete lab assignments. The professor will provide regular feedback to the students on the depth of their understanding of the material. This feedback will occur in class, on the written papers, and in emails. The Mastery approach will be used when grading written assignments. Students can meet with the professor by appointment for additional feedback. The mastery approach is one where the professor continues to return the paper to the student until it has reached B level competence. The student has the option of resubmitting to seek a higher level of competence (an A). Because of this format there are heavy **penalties** for late paper assignments. If you turn a paper in late, or incomplete, expect a lower final grade. (There is more information on the Mastery concept on the professor's web page).

Course Requirements:

All assignments are due by 11 AM, by email, on the day they are assigned. Because the Mastery approach is used there is a penalty for late papers or incomplete papers. The main goal of these assignments is to help the student learn the basic terminology used in science and how it is applied. The second goal is to learn about scientific analysis and it applications in the real world. This will help the student become more skilled in applying scientific thought and procedure to problems they might encounter.

Class Participation note that 20% of your grade is participation

The class will use a seminar format where student input will be required. Be prepared to be asked for input at each class. Regular attendance and active participation in discussions and learning activities **is required**. A reduction in grade will occur due to non-participation in class. This includes if you are tardy, if you leave early, if you have unexcused absences. Each of your presentations contributes to this portion of the grade.

If you know you are going to be absent send an email with the reason why.

Assignments Need to be Turned in On Time note that there is a point penalty

Please be sure to hand in all of your assignments on time. There is a point penalty for turning in late assignments (when there is no excused absence) that is equivalent to a full grade drop. This means that you can only get a B if the work is turned in late and it is A quality work. If the assignment is turned in more than a week late then there is a 2 grade penalty, meaning you can only get the maximum of a C.

Participate in class and turn your work in on time.

EVALUATION:

The evaluation process uses the Mastery Approach. No grade is given on any written assignment until it has reached B level competence. Since every student is unique in their learning style the requirements to meet competence are communicated between student and professor, mostly by email. This is done with every written assignment including labs.

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

The mastery approach is one where the professor continues to return the paper to the student until it has reached B level competence. The student has the option of resubmitting to seek a higher level of competence (an A). Because of this format there are **heavy penalties** (one entire grade, for example the maximum grade you could receive for a late paper would be a B, reduced down from the maximum of an A). This same penalty applies to submitting a paper that is grossly missing the fundamentals required of the assignment as outlined above (every section of the assignment MUST be addressed). This approach is described in more detail on the professor's CSJ web page. The student is encouraged to read the material on this web page and ask questions.

Course grading criteria is as follows:

Virtual Labs	40%
Projects/papers	40%
Participation	20%

Points Per Assignment:

Assignment	Points for Each	Number of Them	Total Points	Late Penalty* per assignment
Participation	10	33	330	2
Virtual Labs	30	22	660	5
Project	660	1	660	150

*This deduction is applied twice if the assignment is more than a week late. Bonus points are given when the assignment is on time.

Total possible points you can earn for the course is 1615. Earning 93 to 100% of these points would result in an A for the course.

Assignment Descriptions:

Virtual Labs: Links to the assignment are provided on the professors webpage. These are labeled by chapter number. In most cases the homework assignment for each chapter. The homework in most cases is an interactive "virtual lab". Follow the instruction of the lab and then answer the questions. Send the answers by email to the professor on the due date.

Application Projects: The student is to select one topic out of a list of five. The student will then complete one projects with each project illustrating the practical application of physical science to daily life. This is very much like a science fair project - testing a hypothesis, with procedure and results. The project will be presented to the class.

PROPOSED COURSE OUTLINE:

DATE	PROPOSED CLASS WORK	ASSIGNMENTS*
01/10/12	INTRODUCTION TO THE CLASS THE SCIENTIFIC METHOD	HOMEWORK - VIRTUAL LAB 1 (REVIEW) READ CHAPTER 1
01/12/12	**Motion**	HOMEWORK - VIRTUAL LAB 1 (DUE) READ CHAPTER 2
01/17/12	***Energy 1***	HOMEWORK - VIRTUAL LAB 2 (DUE) READ CHAPTER 3
01/19/12	***Energy 2***	HOMEWORK - VIRTUAL LAB 3 (DUE)
01/24/12	Heat and Temperature	HOMEWORK - VIRTUAL LAB 4 (DUE) READ CHAPTER 4
01/26/12	Waves and Sound	HOMEWORK - VIRTUAL LAB 5 (DUE) READ CHAPTER 5
01/31/12	Electricity	HOMEWORK - VIRTUAL LAB 6 (DUE) READ CHAPTER 6
02/02/12	LIGHT	HOMEWORK - VIRTUAL LAB 7 (DUE) READ CHAPTER 7
02/07/12	Atoms and the Periodic Table	HOMEWORK - VIRTUAL LAB 8 (DUE) READ CHAPTER 8
02/09/12	Chemical Bonds	HOMEWORK - VIRTUAL LAB 9 (DUE) READ CHAPTER 9
02/14/12	Chemical Reactions I	HOMEWORK - VIRTUAL LAB 10 (DUE) READ CHAPTER 10
02/16/12	*Organic Chemistry*	HOMEWORK - VIRTUAL LAB 11(DUE)
02/21/12	Presidents Day	VACATION
02/22/12	Presidents Day	VACATION
02/28/12	Water and Solutions	HOMEWORK - VIRTUAL LAB 11(DUE) READ CHAPTER 11
03/01/12	Nuclear Reactions	HOMEWORK - VIRTUAL LAB 12(DUE) READ CHAPTER 12
03/06/12	The Universe	HOMEWORK - VIRTUAL LAB 13(DUE) READ CHAPTER 13
03/08/12	The Solar System	HOMEWORK - VIRTUAL LAB 14(DUE) READ CHAPTER 14
03/13/12	Earth in Space	HOMEWORK - VIRTUAL LAB 15(DUE) READ CHAPTER 15
03/15/12	Rocks and Minerals	HOMEWORK - VIRTUAL LAB 16(DUE)

		READ CHAPTER 16
03/20/12	Plate Tectonics I	HOMEWORK - VIRTUAL LAB 17(DUE) READ CHAPTER 17
03/22/12	Plate Tectonics 2	HOMEWORK - TIME FOR EXTRA CREDIT READ EXTRA CREDIT
03/27/12	Building Earths Surface	HOMEWORK - VIRTUAL LAB 18(DUE) READ CHAPTER 18
03/29/12	Shaping Earths Surface	HOMEWORK - VIRTUAL LAB 19(DUE) READ CHAPTER 19
04/3/12	Spring Break	ENJOY!!
04/10/12	Geologic Time	ENJOY!!
04/12/12	Atmosphere	HOMEWORK - VIRTUAL LAB 20(DUE) READ CHAPTER 20
04/17/12	Weather and Water	HOMEWORK - VIRTUAL LABS 21 AND 22 (DUE) READ CHAPTERS 21 & 22
04/19/12	Applications of Science	HOMEWORK - WORK ON YOUR PROJECT **SEND IN PROJECT PROPOSAL**
04/24/12	Applications of Science	HOMEWORK - WORK ON YOUR PROJECT **SET UP YOUR EXPERIMENT IN CLASS**
04/26/12	Applications of Science	**STUDENTS PRESENT PROJECTS - IN CLASS**
05/01/12	Applications of Science	**STUDENTS PRESENT PROJECTS - IN CLASS**
05/03/12	Applications of Science	**STUDENTS PRESENT PROJECTS - TURN IN YOUR FINAL PROJECT**

***ALL ASSIGNMENTS ARE DUE THE DAY ON WHICH THEY ARE LISTED. BECAUSE OF THE MASTERY APPROACH, THERE ARE HEAVY PENALTIES FOR LATE PAPERS OR PAPERS TURNED IN THAT ARE NOT COMPLETE.**

MISSION STATEMENT – Writing Across the Curriculum:

Dedicated to the proposition that the ability to write effectively is an important life skill, the faculty of the College of St. Joseph advocates writing across the curriculum for all students as a vehicle to develop good writing habits. Writing across the curriculum enhances student success by encouraging writing to learn and learning to write in all academic disciplines, recognizing a diversity of needs in society. Developing these skills is incorporated in course work throughout the curriculum in a manner that promotes writing as a valuable and enjoyable means of learning.

COURSE POLICY:

Late Assignments: All out of class assignments must be turned in to the instructor at the beginning of class on the due date. Late assignments will be heavily penalized.

Lab Safety: Adherence to safety rules in the lab is necessary and students are required to read and sign the lab safety agreement. Unruly behavior is not acceptable and will result in the student being asked to leave, along with a failing grade for that day.

ADA/Disability Statement: If you require an accommodation based on a disability, I would like to meet with you in private during the first week of the semester. This meeting would address the reasonable accommodations that you could receive within my class.

GRIEVANCE POLICY:

A student who has concerns regarding any aspect of the course is encouraged to seek resolution by implementing the following process in the order outlined.

a. Consult with the instructor to resolve the issue in question.
b. If no resolution is achieved, address the issue with the Division Chairperson.
c. If a resolution is not attained, consult the Vice President of Academic and Student Affairs.

Should the student so desire, he or she may seek the guidance of his/her academic advisor to facilitate the process outlined above.