

SM 145 Foundations in Problem Solving and Scientific Literacy – Spring 2008

SM 145-01: T,R 5:00 -7:30 PM Brehm Lab Room 169

Instructor: Mr. William Lohner Room 173 Brehm Lab 775-3614 bill.lohner@wright.edu

Office Hours: Tuesday & Thursday, 4:00 – 5:00 PM, or by appointment

Student Teaching Assistant: TBA Email _____

Text: SM-145 Manual, *Foundations in Problem Solving and Scientific Literacy*. B. Basista with D. Crane. Third Edition, 1999.

Required Materials: Single subject spiral bound notebook; basic calculator.

Objectives: The purpose of this *laboratory* (activity-based) course is to provide a firm basis for subsequent science education courses in science concepts and processes through cooperative laboratory experiences SM-145 is a writing intensive course.

Course Organization: Students will work in cooperative groups of 3-5 on inquiry science units. Understanding is frequently checked at indicated times by the instructor and TA. As an activity based course with frequent individualized attention for students in groups, there is no direct lecture. However, whole-class discussions about homework solutions or concepts are held occasionally for the purpose of solidifying understanding of science concepts and processes.

Writing Across the Curriculum (WAC): There are three assignments for the WAC portion of the course. These are based on the three objectives:

To help students think clearly about the course material by writing about it.

To give students a chance to exercise their editing skills

To help students learn the conventions of writing in their own field of study.

Each assignment is graded on a ten point scale on the basis of content and grammar for a maximum of 30 points. In addition, in order to pass the writing intensive portion of the course, a student must have an average score on the three assignments of 7 or better.

Journal: A class journal is kept in a spiral bound notebook and contains a written record of work accomplished in class. All calculations, notes and answers to questions are entered neatly in order. Each day's work is dated. There are three journal checks each for ten points. These are done at the time of the three exams.

Homework: Homework assignments may be assigned each class and will be due the beginning of the following class period unless a student is absent. Points will be deducted for late homework (half credit if one class late, no credit thereafter).

Attendance/Participation: Due to the nature of this course, attendance is required. To further encourage regular attendance, a portion of the final grade is devoted to this. Each student can earn up to 1 point each class meeting. If you are late, ½ point will be subtracted for that day. (You must notify the instructor that you have arrived to receive credit for attending.) If you are absent you will receive no points. If you are absent for 4 (four) class meetings, you may be asked to drop the course. For excused absences, classes may be made up by special arrangements with the instructor. The class will be divided into cooperative learning groups. The members of the groups will work together to perform experiments and exercises, with each member recording the results and answers to questions in their own lab manual. Assessment of classroom participation will be based on the checkpoint discussions of the activities with the instructor (participation points given for completed checkpoints).

Pop-Quizzes: There are two pop-quizzes worth 10 points each. Their primary purpose is to prepare students before a major exam.

Performance Assessment: Performance assessment will be a "hands-on" group activity. Your grade will be assessed by selecting one paper at random with all members of the group receiving the same grade.

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Exams: There are three exams each worth 80 points. These will incorporate a variety of testing methods and may include group work.

Final: The final is comprehensive and is given during finals week.

Grading: The course grades will be calculated from total points earned during the quarter as follows:

	<u>Percent</u>
Attendance and Participation	5%
Homework	10%
Journal checks - 10 points each	5%
WAC - 10 points for each assignment	5%
Pop-Quizzes	5%
Performance Assessment (s)	5%
Exams E1 Science Process, Measurement, Surface, Spaces	15%
E2 Mass, Changes and Constancy in Properties	15%
E3 Density, Sinking, Floating	15%
FINAL	20%
TOTAL:	100%

Grading Scale: 100% to 90% (A); 89% to 80% (B); 79% to 70% (C); 69% to 60% (D); 59% and below (F).

Student Code of Ethics

The Student Code of Ethics will be adhered to in this course.

SCHEDULE

WEEK	SUBJECT
1	Pretest, Section I: Introduction to Science Process Section II: Measurement
2	Section II: Measurement Section III: Surfaces and Spaces
3	Section III: Surfaces and Spaces Section IV: Mass
4	Exam 1 WAC 1 due Section IV: Mass
5	Section IV: Mass Section IV: Mass
6	Section V: Changes and Constancy in Properties of Matter Section V: Changes and Constancy in Properties of Matter
7	Exam 2 WAC 2 due Section VI: Properties of Substances
8	Section VI: Properties of Substances Section VII: Density, Sinking and Floating
9	Section VII: Density, Sinking and Floating Section VII: Density, Sinking and Floating
10	Exam 3 WAC 3 due Review