PreCalculus – Math 147
Section 008
Fall, 2007

"For Dr. Petroski, acceptance of uncertainty and possible failure - he calls it "**coping with the imponderable**" - is what separates the "**given world**" of the scientist from the "**built world**" of the engineer." (From the May 2, 2006 New York Times article about Henry Petroski of Duke University (page D3))

Course Information: PreCalculus, Math 147, section 008; MTWRF; 5 credit hours; Room ET 103.

Professor: William P. Clement
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Office hours: I will be available during Friday's Engineering 110 period. I am also available in my office, MG206-B most of the time except during exercise hour (11:30-2:00).

I am a geophysicist – a geoscientist that uses physical principles to understand the structure and processes of the Earth. Mostly, I use FM frequency radio signals to produce images of the upper 20 meters of the Earth. I have been a research professor at Boise State University since 1997. Hopefully, my background as a scientist will provide context to this course.

Teaching Assistant: Randi Walters
Office hours: 4:40 to 5:30 Monday and Wednesday (right after class).
e-mail: RandiWalters@mail.boisestate.edu
Room: MEC103

Text: PreCalculus: Mathematics for Calculus, Fifth edition, by Stewart, Redlin, and Watson, 2006.

Course Description:
MATH 147 PRECALCULUS (5-0-5)(Area III). A single course equivalent to College Algebra (MATH 143) plus Analytic Trigonometry (MATH 144). Credit cannot be granted for both MATH 143 and MATH 147, nor for both MATH 144 and MATH 147. PREREQ: MATH 108 or satisfactory placement score.

This course requires a lot of work. Repetition is the key to learning much of the material. Learn by doing. Chapter 1 should be review for many of you. We will cover this thoroughly, but quickly. Chapters 4 and 7 are the most difficult chapters in the course.

Class website:
http://cgiss.boisestate.edu/~billc/Math147. I also have a link to this page from my homepage.

Course aims and objectives:
PreCalculus lays the foundation for successful completion of Math 170 and 175. The concepts and methods learned in this course will form the fundamental basis for further studies in math and, most importantly for you, in engineering. Much of the math you will do in engineering is taught in this course. Learn it now so you can avoid struggle in upper level classes later.

You need to determine how you learn best, for example, by seeing the information, hearing the information, or reading the information. You might do best with a combination of different methods. What is important is that you **learn <u>how to</u> learn** and you **learn how to <u>enjoy</u> learning.**

Processing information is the key to learning. I can transfer lots of information to you (tell you the information), but until you process it, until you work with it, you will not develop a deep understanding the information.

Format and procedures:
Math 147 is primarily a lecture course combined with self-learning through ALEKS. This course is part of a Learning Community which includes Engineering 110. You must be registered for both courses to participate in this section (section 008) of Math 147. Attendance in both courses is beneficial to successfully passing Math 147.

Quizzes or exams will be delivered every Friday during Engineering 110. Homework for Math 147 consists of working through ALEKS mostly on your own, but also during Friday's Engineering 110 class after the quiz or exam. Some additional (paper and pencil) homework may also be assigned.

I expect you to attend class and to participate by being actively involved in class. The simplest way to be involved is to think about why a topic or method is being presented. What is the purpose of posing or solving the problem this way. Ask questions if you do not understand something. **Do not be afraid to ask a question. If you do not know the answer, many other students will not know the answer too!** If someone is brave enough to ask a question, I expect you to honor their bravery by showing **respect** to your classmate.

I view mathematics as a language that more concisely and accurately conveys and describes engineering and scientific concepts. Mathematics is often the best way to present engineering and scientific theory. Thus, learning mathematics is not the end goal

of this course. The goal is to be sufficiently comfortable with mathematics so that you can focus on new engineering concepts without being confused by the mathematics. But being comfortable with something means using it frequently and understanding its nuances. You must spend significant time practicing simple, repetitive problems to fully understand the beauty of mathematics.

Grading:

Homework and Quizzes – 30%
Exams (5 during semester) – 55%
Final exam – 15%

Your final homework grade will be based on your percentage of pie chart completion in ALEKS and on timely completion of ALEKS chapter deadlines. Quizzes and exams will be delivered through ALEKS during Friday's Engineering 110 class period. The questions will be generated by ALEKS and each individual quiz or exam will be different. However, the level of difficulty will be the same for everyone. For the exams only, I will require you to write your work in a bluebook. Your work must be handed in at exam time for credit on the exam and for partial credit on questions. The final will be a traditional paper and pencil type exam. It will not be in ALEKS. Extra credit will not be given in this class.

Missed exams or quizzes: **Do not miss them!** You will be allowed to drop the score from one quiz; presumably you would drop the score from the quiz you missed. To miss an exam, you must let me know ahead of time, and have a ligitamate excuse with documentation (e.g., death in the family – funeral announcement; emergency medical problem – Doctor's note).

A grade of C- or higher is necessary for Math 147 to count as a prerequisite for another course or to be used to fulfill a core requirement.

Academic Integrity/Honesty:

Academic integrity is expected of every student. The Student Code of Conduct states, "Cheating or plagiarism in any form is unacceptable. The University functions to promote the cognitive and psychological development of all students. Therefore, all work submitted by a student must represent her/his own ideas, concepts, and current understanding. Academic dishonesty also includes submitting substantial portions of the same academic course work to more than one course for credit without prior permission of the instructor(s)." A range of acts can be considered academic dishonesty or misconduct. I will evaluate each case of academic misconduct on its own basis and appropriate sanctions will be applied. Such sanctions may be, but are not limited to, a zero for the assignment or a reduced grade for the course. All instances of misconduct will be reported to the Student Conduct Office – **no exceptions**! Furthermore, students who cheat on an examination will receive a zero for the exam, fail the course, and be reported to the Conduct Office. *(modified from Lisa Brady, History, Boise State University)*

Boise State University Student Code of Conduct:
http://www2.boisestate.edu/studentconduct/studentcodeofconduct.htm

Resources for study help:
Work together! Most students find that working with other students is an effective way to learn new material and prepare for exams. I strongly recommend that you form study groups.

Two Math Drop-In Centers offer free tutoring. MDIC I is located in the Math/Geosciences building in room 243. MDIC I is open Monday through Thursday, 8:00 AM to 9:00 PM, Friday from 8:00 AM to 3:30 PM, and Saturday from 10:00 AM to 2:00 PM. MDIC II is located in the Gateway Center in room 116. This center is open Monday through Friday from 9:30 AM to 3:30 PM. For more information on private tutors, see http://tutoring.boisestate.edu.

Tentative Calendar:

Week	Week starts (Monday)	Monday	Tues	Wed	Thurs	Fri	Friday, ENGR 110	Exam	Exam coverage (chapter)
1	27-Aug	Chap 1	Chap 1	Chap 1	Chap 1	Chap 1	Quiz 1	1	**1**
2	03-Sep	**Holiday**	Chap 1	Chap 1	Chap 1	Chap 1	**Exam 1**	2	**2**
3	10-Sep	Chap 2	Chap 2	Chap 2	Chap 2	Chap 2	Quiz 2	3	**3 & 4**
4	17-Sep	Chap 2	Chap 2	Chap 2	Chap 2	Chap 2	Quiz 3	4	**4, 5&6**
5	24-Sep	Chap 2	Chap 2	Chap 2	Chap 2	Chap 3	**Exam 2**	5	**6 & 7**
6	01-Oct	Chap 3	Chap 3	Chap 3	Chap 3	Chap 3	Quiz 4	Final	**1 through 8**
7	08-Oct	Chap 3	Chap 3	Chap 3	Chap 3	Chap 4	Quiz 5		
8	15-Oct	Chap 4	Chap 4	Chap 4	Chap 4	Chap 4	**Exam 3**		
9	22-Oct	Chap 4	Chap 4	Chap 4	Chap 4	Chap 5	Quiz 6		
10	29-Oct	Chap 5	Chap 5	Chap 5	Chap 5	Chap 5/6	Quiz 7		
11	05-Nov	Chap 6	Chap 6	Chap 6	Chap 6	Chap 6	**Exam 4**		
12	12-Nov	Chap 6	Chap 6	Chap 6	Chap 6	Chap 7	Quiz 8		
	19-Nov	**Holiday**	**Holiday**	**Holiday**	**Holiday**	**Holiday**			
13	26-Nov	Chap 7	Chap 7	Chap 7	Chap 7	Chap 7	Quiz 9		
14	03-Dec	Chap 7	Chap 7	Chap 7	Chap 7	Chap 7	**Exam 5**		
15	10-Dec	Chap 8	Chap 8	Chap 8	review	review	Quiz 10		
	Final			19-Dec					

Note: Chap 9 covered in ENGR 110.

ALEKS Due dates

Chapter	Complete chapter date	total available ALEKS topics
1	**Fri, 9/7***	79
2	**Fri, 9/28**	20
3	**Fri 10/12**	21
4	**Fri Oct. 26**	15
5	**Fri Nov. 2**	8
6	**Fri Nov. 16**	14
7	**Fri Dec. 7**	21
8	**Fri Dec. 14**	20