A SUCCESSFUL ON-LINE ALGEBRA COURSE

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A SUCCESSFUL ON-LINE ALGEBRA COURSE

- Distance Education at SNHU
- SNHU Math Requirements
- Important Considerations
- Course Features
- Challenges
DISTANCE EDUCATION AT SNHU

- Began in 1996
- 7,000+ enrollments/yr.
- Mainly Non-Traditional Age Students
- Asynchronous
- 100% Internet-Based
- Eight-Week Courses
- Complete Degree Programs Offered
SNHU Math Requirements

- MAT 120 Finite Mathematics
- MAT 220 Introductory Statistics

Other Requirements (for Business Majors)
- MAT 121 Topics in Quantitative Analysis
- MAT 151 Calculus
- MAT 230 Discrete Math
IMPORTANT CONSIDERATIONS

Creating a Collaborative Community
- Student Introductions
- Student Homepages
- Learning Styles Inventory

Student Interaction
- Exploration Lessons
- Discussion Board

Faculty Facilitation
- Lessons
- Discussion Board
- Individual Feedback
COURSE AREAS

- Announcements
- Course Information
- Staff Information
- Course Documents
- Assignments
- Communication
- Discussion Board
- External Links
- Tools
Welcome Announcement

Fri, Aug 29, 2003 -- Welcome to MAT 050/W

Welcome, I am glad to meet you!!!

Check out our class areas:
Course Information - Syllabus, Assignment Timeline, Course Procedures, and other general information.
Staff Information - Information about me
Course Documents - Notes on each chapter we cover
Assignments - Required and optional homework problems for each chapter, worked out homework solutions, and tests (once assigned)
Communication - Discussion Board, E-mail, and Roster (to view student homepages)
Discussion Board - Area to collaborate about coursework with classmates and me. I expect you to contribute to this discussion at least 3 times per week.
Tools - Digital drop box (for sending in assignments), Edit your homepage (to share information about yourself with classmates), Gradebook (to check your status in this course)
External Links - Helpful math internet sites

Suggestions for opening documents:
1) Open the document in a new window. Once you maximize that window the formatting should make it easier to read. If the formatting looks bizarre (I use Comic Sans which sometimes presents font conflicts), Select All and change the font to something you know you have on your computer
2) Save Target As - If you want to save the file, this is the way to go. Then you can open the file within the program it was created with later on.
Thu, Sep 18, 2003 -- Simple & Compound Interest
A few important issues have come up in the Chapter 3 Discussion:

1) I am adding a new forum for discussion of applications as the older forum is getting very full and hard to manage.

2) Bravo to those of you that found my error on the Simple Interest notes Objective B Example 3. \(0.12 \times 1/6 = 0.02\). I will have to hire you as editors. Thanks.

3) The answers for HW 12 - Interest Worksheet are now available, I moved the date up since some of you are ready to check your answers. The problems with * indicate problems that often are challenging.

Reminder: Test #1 will be posted tomorrow.
I decided to only cover Chapter 1 & 2 on Test #1 to give everyone feedback on HW 8-11. This means that Test #1 will only cover HW 2-7.

Mon, Sep 15, 2003 -- Week 3: Linear Equations Continued
I'm back!!!!!! Got home from Syracuse last night at midnight after a wonderful visit with our daughter. Now I am busy catching up with our course discussion from the weekend so that you can submit HW 8-11 by tomorrow.

This week we will continue the study of linear equations by working on applications of equations in the "Real World". The vast majority of real life applications of algebra involve using formulas: income taxes, sales, profit & loss, temperature, area, to name a few. If you can use formulas as a means to solve problems, you will be able to handle almost all of the real math problems that will face you in the future. This week we will study some of those applications (most word problems aren't as difficult as we think they are). Take a deep breath and plunge ahead!!!!!!! I am here to help you along the way.

Follow my comments on for each HW below:

HW #12 Simple & Compound Interest
This topic is not covered in your text. Make sure to use my lecture notes as a guide for this material. You will go into greater detail with interest next term in MAT 120. The HW #12 worksheet is in Assignments. I have also
Staff Information

Contact Information
- E-Mail
- Phone
- Fax
- Office Hours

Personal Biography
- Teaching Background
- Personal Interests
COURSE DOCUMENTS

Chapter 4 Polynomials
Objectives 4.1-4.5A

4.1 Addition and Subtraction of Polynomials
4.2 Multiplying Monomials
4.3 Multiplying Polynomials
4.4 Negative Exponents & Scientific Notation
4.5A Dividing a Polynomial by a Monomial (Use the text for this topic)
We do not cover 4.5B

Follow your text's explanation for the objectives without lecture notes. It is actually pretty good on these topics.

Chapter 6 Equations with Fractions
6.6A Solving Proportions
6.5A Equations with Fractions
6.6B Applications of Proportions
6.7A Literal Equations

Chapter 7 Linear Equations in Two Variables
Graphing Linear Equations
X & Y Intercepts
Slopes
Slope/Intercept Form of an Equation
Equation of a Line

Chapter 11 Quadratic Equations
11.3 The Quadratic Formula
11.4 Graphing Quadratic Equations (my approach is a bit different than your text)

Chapter 9 Inequalities
9.3 Solving Inequalities
9.4 Graphing Linear Inequalities
SAMPLE COURSE DOCUMENTS

- Solving Percent Equations
- Graphing Linear Equations
- Finance Flowchart

Course Document Challenges
- Formatting Problems
- Missing Images
- Interactive Elements Needed
ASSIGNMENTS

Tests
All tests are due by Monday morning at 10 am.

You may use your calculator, text, lecture notes, and homework for reference. This is to be your own work. You are not permitted to get help from: me, classmates, spouses, children, friends, pets, etc. Failure to follow these rules will result in automatic failure in this course. I trust that you will all adhere to this honor system.

Homework Solutions
You can find my solutions to many of the common problems that I will post on the class web page each week for new additions.

Assignment Timetable
[Word File (43008 Bytes)]
This is the same timetable that is in Course Information. It lists all required assignments and tests with their due dates.

In addition, for each chapter (See individual chapter assignments below) you will find another listing of optional practice problems keyed to each objective that we cover.

Chapter 1 & 2 Pre-Tests
In case you haven’t gotten your book yet, I am posting copies of HW 2 & 3, the pre-tests that are due this Thursday.

Chapter 1 Real Numbers
[Html File (13451 Bytes)]
Required and Optional Practice Problems are given. The optional problems are keyed to each objective that we cover.

Chapter 2 Variable Expressions
[Html File (11274 Bytes)]
Required and Optional Practice Problems are given. The optional problems are keyed to each objective that we cover.
SAMPLE ASSIGNMENTS

- Assignment Timetable
- Chapter 1 Review
- Slope Intercept Worksheet
- Student Test #1
- Student Test #2

Assignment Challenges
- Academic Honesty
- Technology Proficiency
- Incompatible Software
COMMUNICATION

◆ E-mail
  - Assignment/Test Feedback
  - Private Communication

◆ Discussion Board
  - Class Conversations
  - Discuss Homework Problems
  - Post at least 3 times per week

◆ Virtual Chat
  - Drop-in Office Hours
DISCUSSION BOARD

1. Introductions
   Introduce yourself to classmates here.

2. Learning Styles Inventory
   Post the results of your LSI here. It is interesting to see how different we all are.

3. Using Your Calculator
   One objective of this course is for you to learn to use your calculator. If you have any trouble with that, post your questions here and we will try to work that out together.

4. Chapter 1: Real Numbers
   1.1 Vocabulary
   1.2 Addition & Subtraction of Integers
   1.3 Multiplication & Division of Integers
   1.4 Rational Numbers (Fractions, Decimals & Percents)
   1.5 Exponents & Order of Operations (PEMDAS)

5. Chapter 2: Variable Expressions
   2.1 Evaluating Expressions (Formulas)
   2.2A Combining Like Terms
   2.2B Multiplying Monomials
   2.2C The Distributive Property
   2.2D Removing Parenthesis to Simplify Expressions
SAMPLE DISCUSSION FORUM

Threads Grouped by Subject
Sample Discussion

Subject: Simple interest B #5

Don't know why, but I did not get 12%.
I think it is the "fraction" issue..
Anyone have the example so I can see it done??

Jonina

Current Forum: Chapter 3 Applications

Date: Fri Sep 19 2003 9:30 am
Author: Cote, Michele <m_cote86@minerva.sahu.edu>
Subject: Re: Simple interest B #5

Hi Jemima - These are my calculations - hope they help.

\[ 545 = 500 \left[ 1 + (r \times 0.75) \right] \]
\[ 545 = 500 \left[ 1 + 0.75r \right] \]
\[ 545 = 500 + 375r \]
\[ 500 = 375r \]
\[ 45 = 375r \]

Isolate "r" by dividing by 375:
\[ 45 / 375 = 0.12 \]
\[ r = 12\% \]
Hi, I submitted the DE evaluation, I am assuming this spot is for other feedback. I thought this course was challenging, but I liked the format of students assisting each other with questions. The feedback from Professor Cohen as well as other students really did help a lot, and was direct, which I appreciated. I learned that while working online I do better if I say what I'm writing to retain it or catch mistakes easier.

I am taking the next math course which is finite mathematics.

I'm looking forward to working with some of my classmates again, misery enjoys commradey!

Bonnie
TOOLS

- Digital Drop Box
- Edit Your Home Page
- Gradebook
- On-Line Manual
EXTERNAL LINKS

**Text Book Web Site**
(http://college.hmco.com/mathematics/aufmann/introductory_algebra/6e/students/)
This is the page for all resources available online for our text.

**Practice Quiz Site**
(http://college.hmco.com/mathematics/aufmann/introductory_algebra/6e/students/ace.html)
Here you will find quizzes for every objective in the text.

**Algebra Help on the Web**
(http://www.algebrahelp.com/)
Thank you Kim Fyler for finding this very useful site!!!

**A Collection of Math Stuff**
(http://mathforum.org/dr.math/index.html)
There is a huge collection of information available here. Pick a topic and see what is available.

**Typing Math Symbols on the Computer**
(http://mathforum.org/dr.math/faq/faq.typing.math.html)
This document will give you some easy tips for typing math symbols on-line.

**History of Calculating Devices**
(http://americanhistory.si.edu/teachingmath/)
An interesting Smithsonian Institute exhibit about different calculating devices.

**History of Mathematics Site**
(http://www-groups.dcs.st-andrews.ac.uk/~history/)
A collection of information about mathematicians and their accomplishments. You can find information by topic, mathematician name or by time frame. There is also a listing for women mathematicians.

**Graph Paper on the Web**
(http://www.mathematicshelpcentral.com/graph_paper.htm)
There are several different types of graph paper that you can print out for yourself. I suggest choosing Black & White to save your ink cartridge.

**Texas Instrument Calculator Guides**
You can get instructions on using your TI calculator here.
CONTINUING CHALLENGES

- Formatting Documents
- Missing Images
- Student Experience with Technology
- Incompatible Software
- Non-interactive Lessons
- Academic Honesty
TEACHING OPPORTUNITIES

On-Line teaching application is available at the Southern New Hampshire University Web-Site.

www.snhu.edu

→ Academics
→ SNHU On-Line
→ SNHU On-Line Faculty
→ Apply SNHU On-Line Program
QUESTIONS??????

For additional information:  
Contact me at p.cohen@snhu.edu