UNIVERSITY OF MASSACHUSETTS DARTMOUTH

Course: MTH 146-7101 – Finite Mathematics – Summer ____

Time: ONLINE

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Tutoring: STEM Learning Lab (Science & Engineering Building, Room 217, #8718)

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1. COURSE DESCRIPTION

Math 146 is the first semester math course for all majors in the Charlton College of Business at UMass Dartmouth. The goal of this course is to provide mathematical analysis techniques used in today's global business community. Topics include a review of linear functions, systems of linear equations and inequalities, linear programming, simple interest and compound interest, annuities, loans, set theory, counting principles, and basic probability rules.

After this course, students will be able to represent and solve business and economics problems using systems of linear equations and inequalities; apply the basic techniques of linear programming to solve maximum or minimum values of linear functions of two variables subject to a number of linear constraints (linear inequalities); determine the compound interest, present and future values, and payments for annuities and sinking funds; solve problems using fundamental concepts and techniques of sets and counting as well as probabilities. The graphing calculator will be used to help students to visualize and solve problems.

2. LEARNING OUTCOMES

Learning outcomes specific to this course:

1. Graph linear functions, write their equations, and interpret slopes and intercepts.
2. Represent and solve business and economics problems using elementary functions (linear functions).
3. Solve systems of linear equations and inequalities in two variables both algebraically and graphically.
4. Solve two-variable linear programming problems graphically by graphing the systems of linear inequalities and determining the feasible region (corner points), and maximum or minimum values of linear expressions.
5. Calculate the simple and compound interest and solve time value of money problems.
6. Determine the present and future values of annuities and sinking funds.

7. Apply sets and set operations, Venn diagrams, the addition and multiplication principles.
8. Recognize and apply the concepts of simple events, compound events, independence and conditional probability.
9. Develop critical thinking and problem-solving skills by using technology and different tools (such as the TI 83/84+).

Learning outcomes with respect to Cluster 1D – Mathematics

1. Recognize when to apply mathematical concepts and methods to specific problems.
2. Manipulate mathematical expressions to solve for particular variables.
3. Draw conclusions from quantitative information and communicate these conclusions verbally and graphically.
4. Implement mathematical models to obtain accurate or approximate solutions using appropriate tools.
5. Apply mathematical techniques to social and scientific problems.

3. COURSE MATERIAL

TEXT (OPTIONAL): Finite Mathematics, 1st Custom Edition for UMass Dartmouth. **You are not required to buy the book but you have to register for MyMathLab.**

WEBSITE: www.mymathlab.com

Course ID: Koumas_____

GRAPHING CALCULATOR: TI-84 (or TI-83)

4. ACADEMIC INTEGRITY POLICY

The Academic Integrity Policy, including plagiarism and cheating, appears in both the undergraduate catalogue and the student handbook. You must visit the following link: **http://www.umassd.edu/studenthandbook/academicregs/ethicalstandards.cfm**

5. EVALUATION POLICY

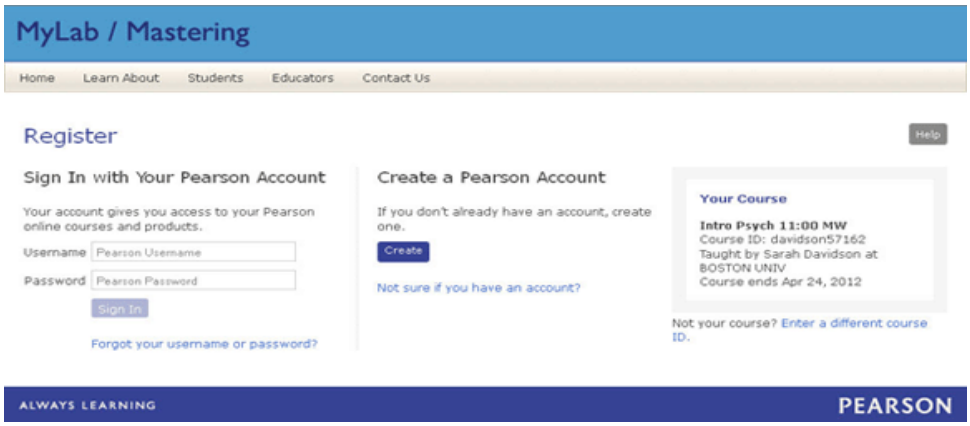
You have 5 online tests, 13 online homeworks (the lowest grade will be dropped) and a final exam.

Online Tests	60% (5 tests, each one for 12%)
Online Homework	24% (12 homeworks, each one for 2%)
Final Exam	16%

6. REGISTER & SIGN IN FOR MYMATHLAB

To register for MyMathLab, you have to go through the following steps:

1. Go to:www.mymathlab.com (same as pearsonmylabandmastering.com)
2. Click **Student** under **Register**.
3. Enter the **Course ID** and click **Continue**. The Course ID is: Koumas_____
4. Sign in or create an account:



   - You already have a Pearson account if you have used one of their online products before. Enter your username and password and click **Sign In**.
   - If you think you have a Pearson account, but can't remember your sign in information, click **Forgot your username and password**. An email will be sent to you.
   - If you don't have an account, click **Create**. You will create a username and password and add your contact information. Read and accept the license agreement. Click **Create an Account**.
5. Pay for access to your instructor's online course.
   - Use **a credit card** and enter billing and payment information, then review and submit your order. **Note:** If using a parent's credit card be sure to use the correct billing address and put your name in the **Your Name** field, not your parent's name.

To sign in for MyMathLab, you have to go through the following steps:

1. From the home page (www.mymathlab.com), click **Sign in**.
2. Enter your username and password, and click **Sign in**.
3. Your course is listed in the **MyMathLab** section of the page. Click on **MTH 146 (Online) Summer ____,** will take you to the course content.
4. From the course home page, you will use the course **menu** to navigate.

7. TEACHING PROCEDURES

ONLINE HOMEWORK

A student will begin a chapter by reading the text, watching video lectures and performing homework. There is a wealth of material next to each homework problem to aid the student's learning, including tutorials, videos and links to the text covering the needed material to complete that problem.

A student may attempt a homework problem at least 3 or 4 times (except the multiple choice questions). A minimum of 75% is required for every online homework before you move to the next homework. Of course there is a possibility to get 100% on all your homework assignments if you are willing to put in the effort.

ONLINE TESTS

After two or three online homeworks, there will be an online test that will be taken to test your level of mastery for these chapters. As mentioned above, you must score at least 75% on the homework material. You should try all the homework problems before taking a test. All the hard problems are not at the end of the test, but mixed in.

- If a student successfully scores a 70% or better on the online test, then the student may continue to the next homework section. However you **may** retake the test for a second time in order to improve your grade.
- If a student scores less than 70%, then you **must** take the online test for a second time. You can take every online test twice and the highest grade will count.

FINAL EXAM

The final exam will be given online on _____ and it will be cumulative (Chapters 1, 2, 3, 5, 6 & 7). You will have a time frame of 240 minutes (4 hours) to complete it.

8. SCHEDULE OF WEEKLY ACTIVITIES

Week 1 (June ___)

Syllabus

Introduction to MyMathLab

CHAPTER 1 – Linear Functions –
1.1 Slopes and Equations of Lines

Homework 1 (Chapter 1.1)

CHAPTER 1 – Linear Functions –
1.2 Linear Functions and Applications

Homework 2 (Chapter 1.2)

CHAPTER 1 – Linear Functions –
1.3 The Least Square Line

Homework 3 (Chapter 1.3)

<u>Week 2</u> (June ___)

Online Test 1 (Chapter 1)

CHAPTER 2 – System of Linear Equations –
2.1 System of Linear Equations in Two Variables

Homework 4 (Chapter 2.1)

CHAPTER 3 – Linear Inequalities and Linear Programming –
3.1 Linear Inequalities in Two Variables
3.2 Systems of Linear Inequalities in Two Variables

Homework 5 (Chapter 3.1 & 3.2)

<u>Week 3</u> (July ___)

Online Test 2 (Chapters 2 and 3)

CHAPTER 3 – Linear Inequalities and Linear Programming -
3.3 Linear Programming in Two Dimensions: A Geometric Approach

Homework 6 (Chapter 3.3)

<u>Week 4</u> (July ___)

CHAPTER 5 – Mathematics of Finance –
5.1 Simple Interest
5.2 Compound and Continuous Compound Interest

Homework 7 (Chapter 5.1 & 5.2)

CHAPTER 5 – Mathematics of Finance –
5.3 Future Value of an Annuity; Sinking Funds

Homework 8 (Chapter 5.3)

CHAPTER 5 – Mathematics of Finance –
5.4 Present Value of an Annuity; Amortization

Homework 9 (Chapter 5.4)

<u>Week 5</u> (July ___)

Online Test 3 (Chapter 5)

CHAPTER 6 – Sets and Counting –
6.2 Sets

Homework 10 (Chapter 6.2)

CHAPTER 6 – Sets and Counting –
6.3 Basic Counting Principles
6.4 Permutations and Combinations

Homework 11 (Chapter 6.3 & 6.4)

<u>Week 6</u> (July ___)

Online Test 4 (Chapter 6)

CHAPTER 7 – Probability –
7.1 Sample Spaces, Events, and Probability
7.2 Union, Intersection, and Complement of Events

Homework 12 (Chapter 7.1 & 7.2)

<u>Week 7</u> (July ___)

Chapter 7 – Probability –
7.3 Conditional Probability, Intersection, and Independence

Homework 13 (Chapter 7.3)

Online Test 5 (Chapter 7)

<u>Week 8</u> (August ___)

FINAL EXAM (CHAPTERS 1, 2, 3, 5, 6 and 7)

Evaluations and Grades