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Course Description: (5 credits) Applications of functions (linear, quadratic, exponential, logarithmic) in business and social sciences, including total cost, total revenue, total profit, breakeven analysis, supply/demand and market equilibrium, exponential growth and decay, fitting curves to data with graphing utilities; theory of matrices; graphical methods for optimization (linear programming problems); and mathematics of finance (arithmetic and geometric sequences and sums).

Course Objectives: *The student will be able to ...*

- Construct, analyze, and interpret linear, quadratic and exponential functions applied to (1) total cost, total revenue, total profit; (2) breakeven analysis; (3) supply/demand and market equilibrium; (4) exponential growth and decay; and (5) fitting curves to data with graphing utilities.
- Solve optimization (linear programming) problems using graphical methods, matrices, and technology where appropriate.
- Interpret the meaning in everyday language of (1) the breakeven point, (2) the market equilibrium point, (3) function notation, (4) the results of Reduced Row Eschelon form of a matrix, and (5) mathematics of finance.
- Identify elements and dimensions of matrices, perform and interpret the results of matrix operations, including adding and multiply matrices and solving systems of equations.
- Accurately describe the important quantities, variables, and relationships (including units of measure) in a given application, using function notation where appropriate.
- Apply geometric sequences to solve finance problems, including solving for future or present value, interest rates, compounding times, lump sums, ordinary annuities and loans.

Text: BUY NO BOOK. We will use the Academic Systems *Personal Academic Notebook* (PAN). The PAN along with supplemental materials will be mailed to you. The cost is included in the fee for the course.

Internet Access: You must have a computer with internet access. Because this course requires you to install software on your PC, you cannot count on libraries for this. You also need a working e-mail account that you check regularly.

Prerequisite: Math 097 with a minimum grade of 2.0 or COMPASS algebra score of 71.

Calculators: A scientific calculator is required and a graphing calculator (TI 83/4) is recommended. To rent a graphing calculator, pay the rental fee at the cashier in building 6 and then submit the form to the librarian at the circulation desk.

Attendance: Since this is an online class, regular attendance is not required (although participation is). However, you will need to take four proctored exams during the quarter. These may be taken on campus or we can arrange a proctor if you are not able to come to campus.

Weekly Schedule: This is not a self-paced class. I have prepared a weekly schedule for you to follow. You may work ahead of the schedule, but it's important that you do not fall behind. The schedule of topics for this course assumes that you will be spending at least 12 to 15 hours per week studying the course materials online, doing homework, and working other practice problems. If mathematics is difficult for you, it may be necessary to spend more time both on-line and off-line working with the material.

Homework: There are two types of homework for each section – online and paper pencil. Each will be weighted equally toward your grade.

- i. **Textbook homework**
 - a. Homework from the PAN (textbook) will be assigned.
- ii. **Supplemental work**
 - a. Problems from supplemental handouts will be assigned.
- iii. **Format:** Write your name, the date, and the section in the upper-right corner. Multiple page assignments should be numbered. Each problem should be clearly labeled with the problem number. Your work should be done neatly in pencil and you should generously space each problem.
- iv. **Grading:** Your homework will be graded for completion. Missed assignments will be given a score of zero. *Late assignments will not be accepted.*

Evaluates: The Academic Systems course has computer-based “Evaluates” at the end of each section. These are similar to section quizzes.

- i. Each section begins with a “Pre-test.” I recommend that you skip over the pre-test until you have completed the section. At this point, you may take the pre-test as practice for the evaluate. If you score 95% on the pre-test, it will count as your evaluate score.
- ii. Be aware that you cannot exit the program in the middle of an evaluate, so avoid starting one at the end of class.
- iii. The Academic Systems program will allow you to take each evaluate a maximum of three times (the test changes slightly each time), with only the highest score counting towards your grade. I understand the desire to keep working on a single section until you “get it right.” But, I need to help you recognize when you must move on, regardless. For that reason, evaluates must be completed prior to each exam.

Tests: There will be five tests given during the quarter.

- i. Tests - There will be five paper and pencil tests. Each test is given in a 2 day window in the Testing Center building 3 room 101. Test dates are Friday (open 4 p.m. to 8 p.m.) and Saturday (open 1 p.m. to 5 p.m.) Tests are planned to be completed in about 1 hour, BUT you are not timed and may take as long as you need if you plan accordingly and are in the test center in plenty of time. You will NOT be allowed to start the exam one day and finish it another. You choose the day (Friday or Saturday) that works best for you.
 - a. You will need to have photo ID with you when you take the test.
 - b. No notes, no books, but calculators and pencils are a must!!
 - c. Turn your homework problems (stapled and labeled with your name and section from the book) to the testing proctor.
- ii. The tests will be cumulative, but will emphasize the material covered since the last test.
- iii. The tests will cover computer and supplemental topics (see schedule).
- iv. If a score of less than 70% is earned on an exam, you must meet (in person or by phone/e-mail) with your instructor prior to taking subsequent exams. In these conversations, personalized learning plans may be developed.

- v. If you miss a test, a score of 0% may be assigned.
- vi. Spoken and written communication as well as sharing of calculators during exams is prohibited.

Grading: E-mail responsiveness: 5%, Homework: 15%, Evaluates: 15%, and Tests 65%. GPA's will be given according to the following scale:

95-100%	4.0	%%%	GPA	%%%	GPA	%%%	GPA	%%%	GPA
93-4%	3.9	81%	3.1	73%	2.3	65%	1.5	57%	0.7
91-2%	3.8	80%	3.0	72%	2.2	64%	1.4	56%	0.6
89-90%	3.7	79%	2.9	71%	2.1	63%	1.3	55%	0.5
87-8%	3.6	78%	2.8	70%	2.0	62%	1.2	54%	0.4
85-6%	3.5	77%	2.7	69%	1.9	61%	1.1	53%	0.3
84%	3.4	76%	2.6	68%	1.8	60%	1.0	52%	0.2
83%	3.3	75%	2.5	67%	1.7	59%	0.9	51%	0.1
82%	3.2	74%	2.4	66%	1.6	58%	0.8	0-50%	0.0

Policies and Notes:

- i. **Conduct:** This is an academic class. Your instructor and classmates should be treated with respect. Disregard for this policy will impact your grade.
- ii. **Corrections:** Changes and corrections to grading must take place during the week following the original distribution of the graded material. It is your responsibility to confirm accurate grading and bring it to my attention in a timely fashion.
- iii. **H1N1, absence, and missed exams:** In general, I do not give make up exams or accept late work. However, if you contact me in advance regarding a missed exam, I will allow you to replace the missing exam grade with a subsequent score. For example, if you missed Test 2, your Test 3 score would be used in place of the missing exam.
- iv. **Math Resource Center:** Math materials, study space, and math tutoring help is available in 26-319H. Some of my office hours will take place in the MRC.
- v. **Academic Dishonesty:** Cheating, plagiarism, and other forms of academic dishonesty are unacceptable at Highline Community College and may result in lower grades and/or disciplinary action. It is both your right and responsibility to be familiar with the document entitled: Student Rights and Responsibilities code WAC 132I-1210 adopted by the Board of Trustees of Community College District 9 on December 13, 2007. This is available in the counseling center.
- vi. **Special Concerns:** If you have any special concerns about this class, please talk to me personally in my office. The more I know about you individually, the more I can help you be successful in this course. If you need course adaptations or accommodations because of dis-Ability; if you have emergency medical information to share with me; or if you need special arrangements in case the building must be evacuated, please provide me with the Letter of Accommodation you have received from the Office of Access Services. Access Services is located in Building 6 in the Student Development Center.
- vii. **Important Dates:** The last day to drop without incurring a “W” and the last day to officially withdraw with a “W” are listed in the quarterly.