Instructor: Thomas Lever  
Email: levert@arcadia.edu  
Office Hours: Tuesday/Thursday 10:30-11:30 or by appointment  
Prerequisite: placement exam or successful completion of MA 100  
Credits: 4 credits

Course Materials:  
"MyLab and Mastering" and a TI-84 graphing calculator are the only required materials for this course. MyLab access includes use of the e-textbook, "Mathematics with Applications" by Lial, Hungerford, et. al. If you don’t have a TI-84 calculator, you may rent one at www.rentacalc.com/ti-84-plus-graphing-calculators.html for $6.95 per month with the first month free. Shipping is free. There is a fully refundable deposit. Note: ordinary scientific calculators don’t support the TVM Solver which is used extensively at the start of the course.

Course Description:  
This course will introduce the mathematics necessary for a business student to pursue quantitatively oriented business courses including accounting, economics, marketing, finance, and operations research. Topics will include savings, loans, and annuities; linear equations, linear systems, matrices, and linear programming; quadratic, exponential and logarithmic equations, and business applications; regression, rates, and differentiation. Some of the specific applications include fitting of curves, interest rate calculations, present and future values of annuities and marginal analysis. Optional: students will complete Excel related exercises, applying the course concepts.

Learning Outcomes:  
Upon successfully completing this course, students will be able to:
1. Apply concepts of finance to real-world applications, such as simple and compound interest, present and future value of annuities, mortgage payments & create an amortization table  
2. Write a system of equations as a matrix equation and solve the system  
3. Understand systems of equations/matrices and their applications  
4. Identify linear programming problems for various applications and be able to solve them, including finding the optimal point(s)  
5. Formulate, apply, and interpret linear, quadratic, exponential and logarithmic models for business applications  
6. Calculate and interpret business concepts, such as profit, break-even points, market equilibrium, supply & demand, marginal profit, that are within linear and quadratic equations  
7. Solve applications involving average and instantaneous rates of change  
8. Compute the derivative as it relates to the rate of change in a business application  
9. Solve optimization, and other applications using the derivative.

Grading Breakdown:  
Homework (20 %)  
Four tests (50 %)  
Final exam (20 %)  
Group Work & Participation (10 %)  
* This break-down of grades is tentative and subject to change with ample notice.
Classroom Expectations:

1. I expect you to be a good classroom citizen and a full participant in the course. Turn off your phone and other distractions. If attending via Zoom, find a quiet place to work, keep your camera turned on so we can see you, but mute your audio when you’re not speaking.

2. Read the textbook and do the practice exercises regularly. You can’t learn Math by cramming the night before an exam. An average student should spend at least two hours outside of class for every hour in class.

3. Submit MyLab and groupwork assignments by their due dates. Homework is essential to your understanding and your ability to use the material – keep up with it!

4. Ask questions in class, before or after class, during office hours, or via email when you don’t understand a concept, a technique, or an answer. You can also contact the Learning Resource Network (LRN) for free tutoring help.

5. Make every effort to attend every class. Arriving more than 10 minutes late, doing unrelated activities during class time, or leaving early will count as absence. If you miss more than 15% of classes, your highest possible course grade will be “B”. If you miss more than 30%, your highest possible grade will be “C”.

6. There are no make-up exams. However, if you have a conflict on a testing day and consult your instructor in advance, it may be possible to make other arrangements.

7. If you miss a test, your lowest test score will count twice, and your highest possible course grade will be “C”. You will receive a zero for each additional test missed.

8. I will post class notices on Canvas which can forward them to your phone or send them to your student email account. It is your responsibility to check these resources frequently.

Health and Safety:
If an individual in the class tests positive for COVID, the University will contact people who were in close proximity to that person for an extended period of time. In our class, we will frequently work in small groups. Maintaining the same individuals in these groups throughout the semester will facilitate contact tracing. Please work with the same group of students consistently during the semester.

Wearing masks during class: Masking requirements can fluctuate during the semester based on changes in the pandemic. Please follow current University mask requirements and when required to wear a mask, use it to cover your nose and mouth; do not come to class without wearing it properly.

Remote Attendance:
Unless you make other arrangements in advance, you are expected to attend classes in person. The class will be accessible via Zoom for students who are not on campus. In cases of illness or other emergency, you may request short-term access to Zoom or class recordings from your instructor.

To support the health and safety of Arcadia community members, please do not attend class for any of the following reasons and contact Student Health Services for assistance:

- A positive test for COVID
- Assignment to quarantine or isolation
- You feel unwell
- Notification or personal awareness that you may have been exposed to a person with COVID

Changes in the pandemic could result in shifts by the University to remote learning. Because of the availability of the vaccine and our capacity for COVID testing, such changes would likely be for short periods of time. Decisions will be made based on changes in our environment, and local, state, and national guidance.
Code of Academic Responsibility:
This code may be found here:
https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6004-code-academic-responsibility

Violations of this code are handled as described here:
https://www.arcadia.edu/faculty-handbook/6000-course-policies-procedures-and-resources/6005-violations-code-academic

Academic Support:
Tutoring is available from the Learning Resource Network. Their web page explains the process for joining the Virtual LRN and scheduling appointments.

Disability statement:
Arcadia University provides reasonable accommodations for students with documented disabilities. If you require accommodations or other academic supports due to a physical, psychological, psychiatric or learning disability, you should contact Disability Support Services at (215) 572-4033.

Title IX Statement:
“Arcadia University is committed to providing a learning, living, and working environment that is free from discrimination. The University has a Policy Prohibiting Sexual Misconduct, Relationship Violence, and Stalking detailing our commitment to preventing and addressing such behavior. I understand the impact that sexual harassment and sexual misconduct can have and am committed to doing my part to foster an environment that is safe and equitable.

Please know that all faculty on campus are mandatory reporters. This means that if you disclose an experience of sexual harassment or sexual misconduct to me outside of a classroom discussion, a writing assignment, or a University-approved research project, I must share what you reported to me with Arcadia’s Title IX Coordinator. This does not mean that you will have to pursue an investigation or go through a grievance process. Even if you do not choose these options, the Title IX Office can provide supportive measures and other resources to you.

If you or someone you know has experienced sexual harassment or sexual misconduct, please know that you are not alone. If you would like to speak to someone confidentially, confidential resources are provided on the Office of Equity and Civil Rights website.”
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<thead>
<tr>
<th>Week of</th>
<th>Sections covered</th>
<th>Content</th>
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<tbody>
<tr>
<td>August 30</td>
<td>5.1 – 5.2</td>
<td>Simple interest; discount; compound interest</td>
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<tr>
<td>Sept 8 (W-F)</td>
<td>5.3</td>
<td>Savings annuities; future value; sinking funds</td>
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<td>Sept 13</td>
<td>5.4</td>
<td>Payout annuities; present value; amortization</td>
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<td>Sept 20</td>
<td>2.2, 2.3, &amp; 3.3</td>
<td>Linear equations, models, &amp; applications (Chapter 5)</td>
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<td><strong>TEST #1</strong></td>
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<td>Sept 27</td>
<td>6.1 – 6.3</td>
<td>Systems of linear equations &amp; applications</td>
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<td>Oct 4</td>
<td>6.4 – 6.6</td>
<td>Matrix operations &amp; applications</td>
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<td>Oct 11</td>
<td>7.1 – 7.3</td>
<td>Graphing linear inequalities; linear programming</td>
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<td>Oct 18</td>
<td>7.3 3.4</td>
<td>Linear programming applications</td>
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<td><strong>TEST #2</strong></td>
<td>Review for Test 2 (Chapters 6 &amp; 7)</td>
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<tr>
<td>Nov 1</td>
<td>4.1 – 4.2</td>
<td>Exponentials &amp; Logarithms</td>
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<td>Nov 8</td>
<td>4.3 – 4.4</td>
<td>Exponential &amp; log applications</td>
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<td>Nov 15</td>
<td>11.3 – 11.5</td>
<td>Intro to calculus; rates of change; the power rule (Chapters 3 &amp; 4)</td>
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<td><strong>TEST #3</strong></td>
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<td>Nov 22 (M)</td>
<td>12.1</td>
<td>Relative extrema</td>
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<tr>
<td>Nov 29</td>
<td>12.2 – 12.3</td>
<td>Points of inflection &amp; optimization</td>
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<tr>
<td>Dec 6</td>
<td><strong>TEST #4</strong></td>
<td>Review for Test 4 (Chapters 11 &amp; 12)</td>
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<td>Dec 13 (M)</td>
<td>Review</td>
<td>Review for final exam</td>
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<td>Dec 20 (M)</td>
<td><strong>FINAL EXAM</strong></td>
<td>Comprehensive</td>
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