

Course Information

Number:	MS206
Name:	Math for Management and Economics
Description:	This course is an introduction to quantitative modeling in the context of business and economics. Students learn mathematical concepts, constructs and theory using the platform of spreadsheet modeling. Topics include principles of spreadsheet design, break even analysis, optimization as applied to curve fitting, cash flow analysis and time series analysis.
Credit(s):	3
Offered (DAY schedule):	Every semester
Instructor Permission Required:	N
Pre-Requisite(s):	MS120 or equivalent

Course Objectives

How to design a spreadsheet in a manner that applies to model building in any context including those not covered in the course.

"How to organize given information in a consistent, easy to read manner including the use of text boxes, comment tags, color coding, and range name assignments.

How to use spreadsheet models to validate solutions (e.g. obtain the solution in two different ways)

"How to use approximation techniques such as ""goal seek"" and how to do ""what if"" analysis on models that have been completed.

How to use Excel to perform optimization whether or not constraints are present.

How to use Excel to understand and conduct cash flow analysis.

Solve equations and systems of equation

Create graphs and charts to represent solutions to problem

Use matrices to aid in decision making

Determine best options for various financial situations

Use probability to assess multiple solutions to various situations.



Department of Arts and Sciences

COURSE NUMBER: MS 206 **CREDIT HOURS:** 3
COURSE TITLE: Math for Management and Economics **OFFICE:** AD 255
INSTRUCTOR: Andrea Thebarga **OFFICE HOURS:** By appt
EMAIL ADDRESS: thebarga@thomas.edu

REQUIRED MATERIALS

Text: Fundamentals of Business Mathematics, 7th Edition by Williams and Reed
Materials posted in Moodle
Calculator- NO cell phones allowed on tests and quizzes
Laptop with Microsoft Excel and Solver

COURSE DESCRIPTION

This course is an introduction to business and economic mathematical topics. Those topics will include principles of spreadsheet design. Attention will be paid, throughout this course, to real-world applications in business, such as inventory control, payroll and banking, taxes, interest and other basic topics in accounting.

COURSE OBJECTIVES

Upon completion of this course, the student should be able to:

1. Design a spreadsheet
2. Organize given information in a consistent, easy to read manner
3. Use approximation techniques such as “goal seek” and “what if” analysis
4. Use Excel to perform optimization with and without constraints
5. Use best options for various financial situations

COURSE REQUIREMENTS

Grading

Tests (2).....	40%
Final	20%
Homework/Quiz	10%
Project.....	20%
Attendance/Participation	10%

Tests

There will be two tests given in this course. The tests are designed to demonstrate your knowledge of the concepts that you have learned.

Final

The final will cover new material as well as a cumulative demonstration of concepts learned throughout the course.

Homework

Homework will be assigned daily. Repetition and self-assessment is the key to learning the basic concepts covered in the course. Occasionally, homework assignments will be turned in for a grade. Quizzes will be given periodically throughout the course.

Project

A semester long project will allow for real-life example of class material learned throughout the semester. Pieces of the project will be assigned, collected and graded throughout the semester. Late submissions of any piece of the project will not be accepted.

Attendance/Participation

Because of the nature of this course, class attendance and participation is required and essential. If it is necessary to miss a scheduled class, the student must notify the instructor via email or in person. Any make up work will be allowed at the discretion of the professor and must be done, if allowed, in a timely manner. Failure to contact the instructor or complete the make-up work when assigned will result in a grade of "0". You will earn a full score with 4 or fewer absences and your score will drop 5 points for each absence over 4. Anyone arriving/leaving more than 15 minutes late/early to class will be marked absent.

GRADING SYSTEM

A (94-100) A- (90-93) B+ (87-89) B (83-86) B- (80-82) C+ (77-79) C (73-76) C- (70-72) D+ (67-69) D (63-66) D- (60-62) F (below 60)

E-PORTFOLIO

E-portfolios allow students an opportunity to store work they feel demonstrates their proficiency in the four Thomas College Core Competencies of Communication, Leadership and Service, Analytical Reasoning and Community & Interpersonal Relations. Materials can come from class projects, extra-curricular and work experiences. Because it's an electronic format, a variety of file types can be stored in the portfolios. From documentation and spreadsheets to music and photographs- the portfolio accommodates them all.

The portfolios are set up on the SharePoint Portal Server on the Thomas College system. If they choose, students may also decide to create a web-page styled version of their electronic portfolio.

STUDENT BEHAVIOR POLICY

Lectures are provided to further student's understanding of the material. Students using chat rooms, playing on the internet, playing games, and using other similar diversions are disruptive to the rest of the class. This disruptive behavior may result in dismissal from the course.

ACADEMIC HONESTY

It is expected that you will make use of any resources available to you as you become proficient in the course objectives. This includes, but is not limited to, obtaining help from reference materials, other members of the class, and tutoring through the Learning Center. Items you submit for evaluation must represent your own work. It is permissible to obtain help from other persons when completing outside assignments, but you should make sure that you are able to reproduce the solution to any problem without assistance. When taking exams, you may not receive assistance from another person in any

way. Cell phones will not be allowed during exams. Calculators will be allowed during tests, however, the use of a cell phone or any other device other than a calculator may not be used. Any departure from these guidelines will be considered cheating and dealt with according to the procedures outlined in the student handbook.

STUDENTS WITH DISABILITIES

Students requiring academic accommodations to be successful in this course are encouraged to arrange a meeting with Lisa Desautels-Poliquin, Dean of Student Affairs. At that meeting, strategies for success will be discussed, as well as any accommodations required for the classroom, which will then be communicated with the instructor.

THOMAS COLLEGE
Waterville, Maine
Department of Arts and Sciences
Fall 2018

Course Number: MS206

Credit Hours: 3

Course Title: Math for Management and Economics

Clock Hours: 45

Instructor: Andres E. Morales

Office: Room AD109

Office Hours: Monday – Friday 11:00 am to 12:00 pm

Others: By appointment.

e-mail: moralesa@thomas.edu

Required Text:

Salzman, S. A. and Clendenen. G. **BUSINESS MATHEMATICS**. 14th Edition. 2018. Pearson, with MyMathLab access card (required) **ISBN:** 9780133906226. Purchase ACCESS code with new textbook, or, register (and pay) directly at start of class when Professor provides you with Course ID:
<http://www.pearsonmylabandmastering.com/northamerica/mymathlab/>

Recommended:

Gross, D., Akaiwa, F. and Nordquist, K. **Succeeding in Business with Microsoft Excel® 2013**. 2014, Cengage Learning.

Technology:

MS Excel®, Scientific Calculator

Course Description:

This course is an introduction to quantitative modeling in the context of business, management and economics. Students learn mathematical concepts, constructs, and theory using the platform of spreadsheet modeling. Topics include principles of spreadsheet design, invoices and discounts, interest, annuities, depreciation, break-even analysis, optimization as applied to curve fitting, cash flow analysis, and time series analysis.

Course Objectives and Outline:

This course will proceed in concert with the learning objectives of Thomas College as represented in the core competences. Therefore, one of the main goals will be to develop an ability to communicate effectively and persuasively using a variety of forms including visual, tabular and conceptual models. Students will also be expected to demonstrate the ability to apply analytical and

mathematical concepts and to communicate their findings using the most appropriate approach for a specific problem or project.

Upon completion of this course, the student should be able to:

- Calculate cash discounts, trade discounts, series discounts.
- Calculate simple interest and apply the concept and techniques to short term notes and loans.
- Calculate compound interest for both lump sums and annuities.
- Develop amortization and sinking fund payment schedules.
- Identify loan options using effective interest.
- Solve linear equations.
- Demonstrate breakeven and equilibrium using calculations and charts.
- Determine optimum solutions to multivariable problems.
- Design a spreadsheet in a manner that applies to model building in any context including those not covered in the course.
- Use spreadsheet modeling to validate solutions (e.g. obtain the solution in two or more different ways)
- Use approximation techniques such as “goal seek” and conducting “what if” analysis on models that have been completed.
- Use “Solver” from Excel to solve systems of linear equations.
- Use Excel to perform optimization whether constraints are present.
- Use Excel to understand and conduct cash flow analysis.
- Perform mathematical calculations using both calculator and spreadsheet.

Course Requirements:

Working knowledge of Excel is expected, however, use of Excel business related formulas and spreadsheet modeling will be covered in class in detail.

Get in contact with the instructor if help is needed, to better understand the operations with formulas in Excel.

Grading:

Homework Assignments	25%
Test/Quizzes.....	40%

Attendance and Participation	10%
Final Exam	25%

Grading Ranges:

96 --- 100	A	66 --- 70	C
91 --- 95	A-	61 --- 65	C-
86 --- 90	B+	59 --- 60	D+
81 --- 85	B	57 --- 58	D
76 --- 80	B-	55 --- 56	D-
71 --- 75	C+	Under 55	F

Homework and Study Plan:

Homework will be worked out online: www.mymathlab.com. Registration is mandatory to have access to homework and study plan, as well as to the e-version of the book. Instructions on how to register will be posted on Moodle. Once homework is past due, there will be no chance for late submissions in MyMathLab, so it is important to keep checking homework due dates.

IF STUDENT HAS NOT CREATED AN ACCOUNT IN MYMATHLAB BY **09/14/2018**, HE/SHE WILL BE DROPPED FROM THIS COURSE.

If more than two weeks' worth of assignments are not submitted in MyMathLab, student will be dropped from this course.

Exams/Tests/Quizzes

Exams/Tests/Quizzes will be given at the end of each major section of the class. Exams may be projects combining math completed by hand and math completed using a spreadsheet or may be solely one or the other.

Academic Honesty Policy:

It is expected that you will make use of any resources available to become proficient in the course objectives. This includes, but it is not limited to, obtaining help from reference materials, other members of the class, and tutoring through the Learning Center. Items you submit for evaluation must represent your own work. It is permissible to obtain help from other persons when completing assignments, but you should make sure that you can reproduce any problem that initially required assistance without any help. Any departure from these guidelines will be considered academic dishonesty and dealt with per the procedure outlined in the student handbook. Possible consequences range from receiving a zero "0" on the item to receiving a zero "0" for the course, but all consequences will be determined at the instructor's discretion.