

For students

This is a template syllabus. This file contains course specific information, such as catalog description, goals and objectives, which does not change. The parts highlighted in red are to be determined by the individual instructors. The official syllabus for each section will be provided by the instructor in the beginning of the semester.

MATH 1340

SYLLABUS Fall 20xx

The University of Iowa
The College of Liberal Arts and Sciences
Department of Mathematics

Mathematics for Business MATH 1340: xxxx

Time & Location for Lecture: xxxx

Some of the policies relating to this course (such as the drop deadline) are governed by its administrative home, the College of Liberal Arts and Sciences, 120 Schaeffer Hall.

Prerequisites: MATH:1005 with a minimum grade of C- or MPT Level 3 score of 9 or higher or ALEKS score of 45 or higher.

Approved GE: Quantitative or Formal Reasoning.

Instructor:

Office location and hours:

Phone:

E-mail:

Website address:

TA:

Supervisor: For this course, see the DEO.

DEO Contact Information: Professor ..., 14 MLH, 319-335-0714, ...@uiowa.edu

Catalog Description of Course:

This course includes the algebraic techniques and modeling that arise in management and economic sciences and is intended for those who need more work in precalculus techniques before taking MATH:1380. Topics include algebraic techniques, functions and functional models, exponential and logarithmic functions and models, linear programming, and an introduction to calculus. Examples and applications are from management, economic sciences, and related areas. The course is at a slightly higher level than MATH:1005 and has more

emphasis on exponential and logarithmic functions and modeling. Each week there are three hours of lecture by a faculty member and two hours of discussion sections led by TAs. Requirements usually include two one-hour evening exams, a final exam, and quizzes during discussion periods. Students are encouraged to use the Math Tutorial Laboratory for additional help.

Objectives and Goals of the Course:

The objectives for a student taking MATH:1340 are to have a solid understanding of basic algebra, graphs, and mathematical functions in preparation for the subsequent course MATH:1380 *Calculus and Matrix Algebra for Business* MATH:1380. Additionally, students will learn basic concepts of systems of linear equations and linear programming, and the first concepts of single-variable calculus.

MATH:1340 begins with a review of solutions to basic types of equations and inequalities including linear, quadratic, polynomial, rational, and others. We will study graphs of equations and then one of the most important concepts of mathematics: a function of a single variable. We study important families of functions including linear, quadratic, polynomial, rational and other types of function. Following this we give special attention to exponential and logarithmic functions. We will study mathematical models which use exponential functions including compound interest, present value, and future value. Following exponential functions and models, we will study basic concepts of systems of linear equations and matrices, and then apply these ideas to the linear optimization problem known as linear programming. The course concludes with a brief introduction to the first important concept of calculus, namely the derivative, which measures the rate of change of a function.

Required text: (Check the current textbook from Department Webpage)

<https://math.uiowa.edu/undergraduate-program/course-information/book-list>

The textbook used Fall 2018: *Mathematics with Applications in the Management, Natural, and Social Sciences*, by Lial, Hungerford, Holcomb, Mull with MyLab Math.

Material to be covered: The Chapters are from the text above. The topics will be essentially same if the textbook changes.

Chapter 1. Algebra and Equations: The Real Numbers, Polynomials, Factoring, Rational Expressions, Exponents and Radicals, First-Degree Equations, Quadratic Equations

Chapter 2. Graphs, Lines, and Inequalities: Graphs, Equations of Lines, Linear Models, Linear Inequalities, Polynomial and Rational Inequalities

Chapter 3. Functions and Graphs: Functions, Graphs of Functions, Applications of Linear Functions, Quadratic Functions and Applications, Polynomial Functions, Rational Functions,

Chapter 4. Exponential and Logarithmic Functions: Exponential Functions, Applications of Exponential Functions, Logarithmic Functions, Logarithmic and Exponential Equations

Chapter 5. Mathematics of Finance: Simple Interest and Discount, Compound Interest, Annuities, Future Value, Sinking Funds, Present Value, Amortization

Chapter 6. Systems of Linear Equations and Matrices: Systems of Two Linear Equations in Two Variables, Larger Systems of Linear Equations, Applications of Systems of Linear Equations, Basic Matrix Operations,

Matrix Products and Inverses, Applications of Matrices

Chapter 7. Linear Programming: Graphing Linear Inequalities in Two Variables, Linear Programming: The Graphical Method

Supplementary Chapter Graphing and Calculus: Why it is hard to draw graphs, The slope of the graph of a function, The derivative, Drawing graphs using the derivative, Maxima and minima

Grading:

For each course, the instructor chooses a grading strategy appropriate to departmental and college guidelines, and the related discipline. Some of the recommended options include (but not limited to) the following:

With **criterion-reference grading**, students receive grades based on the quality of their work in relation to the criteria defined by the instructor and by the rubrics or models specifying the qualities of each grade. Some instructors may choose to adjust the scale (criteria) if a need arises.

Norm-based grading is used in the course which is based on how others in the class perform. This method is generally used in large lecture courses or coordinated multi-section courses. The distribution of grades may be based on CLAS recommendations.

Grading System: Plus/minus grading will be used.

XX% X midterms (dates)

XX% Final exam (date, time and place to be announced)

XX% X Quizzes, about every other week (dates)

XX% Homework, assigned weekly, and usually due the following week

XX% Attendance and class participation (optional)

All exams are comprehensive, unless specified otherwise.

A Word about the Date and Time of the Final Exam: The date and time of every final examination is announced by the Registrar generally by the fifth week of the classes. **No exams of any kind are allowed during the last week of classes.** All students should plan on being at the UI through the final examination period. Once the Registrar has announced the date, time, and location of each final exam, the complete schedule will be published on the Registrar's web site and will be shared with instructors and students. It is the student's responsibility to know the date, time, and place of the final exam.

Make-up policy:

As stated in CLAS webpage: <https://clas.uiowa.edu/faculty/student-attendance-and-absences>:

“University policy requires that students be permitted to make up examinations missed because of illness, mandatory religious obligations, authorized UI activities, or unavoidable circumstances. An unavoidable circumstance is defined as an event beyond the student's control and often involves a serious and unexpected hospitalization, a family tragedy, or a related incident. Such circumstances **do not include** attendance at a wedding, a family vacation, obligations related to work or other such matters. The instructor of a student participating in an authorized UI activity is sent a statement generally by email from the UI official in charge of the event before the absence occurs; this statement will include the specific date and time that the student will miss class. Activities related to employment, fraternities or sororities, or volunteer activities are not UI authorized activities.”

Student Collaboration: Student collaboration is NOT permitted on exams. Any attempt to collaborate during exams will result in a 0 score on that test. **The instructors will specify if collaboration is allowed on assignments and, if so, the expectations for a student's individual performance.**

Other Course Policies: For Fall 20xx

Students are expected to attend all lectures, and do all of the homework regularly. Students are responsible for everything covered in the lectures, textbook and the prerequisites. Important announcements about changes (if necessary) to the syllabus, homework, exams, etc. will be done in the lectures or they will be e-mailed to your UI e-mail address.

There may be quizzes, depending on the section (excluding the weeks of the exams), consisting of problems similar to those assigned as homework. Taking all quizzes and all exams (midterms and final) is mandatory. In the exams, you are expected to show all of your work in an organized and coherent fashion. In the long problems, all work must be shown, and giving only a final solution obtained by guessing or using a calculator may not earn full credit. Make-ups may be given for the exams missed due to unavoidable circumstances and compelling reasons which are documented in writing. If you have a conflict or a medical reason, discuss your situation with your lecturer as soon as possible.

You are strongly encouraged to go to your lecturer's office hours as well as your TAs. Make an appointment, if you have a conflict with the listed office hours.

Cell phones must be turned off during the lectures and exams. If you have to read or text a message during the lecture, please do it outside the classroom. During the exams, the cell phones are required to be put (far) away, preferably at the bottom of your backpack. During the exams, you cannot hold them in your hand, not keep them on your desk, chair, or anywhere easily accessible, and you cannot use it as a calculator.

Resources for Students:

Math Tutorial Lab: 125 MLH <http://www.math.uiowa.edu/math-tutorial-lab>

Students will find the Writing Center and the Speaking Center very useful for this course:

Writing Center: <http://www.uiowa.edu/~writingc/>

Speaking Center: <http://clas.uiowa.edu/rhetoric/for-students/speaking-center>

Notes to the Students:

1. All students in the College have specific rights and responsibilities. You have the right to adjudication of any complaints you have about classroom activities or instructor actions. Information on these procedures and your responsibilities is available in the Schedule of Courses and on-line in the College's Student Academic Handbook, (<https://clas.uiowa.edu/students/handbook>) In summary, first see the person you wish to complain about, and then see his/her immediate supervisor. The chain is: graduate or undergraduate assistants, then Prof. XX, then the Chairman of the Department of Mathematics Prof. YY, and then an appropriate Dean. The Department of Mathematics has offices in 14 MLH (MacLean Hall). To make an appointment to talk to the chairman of the department call 335-0714 or contact the departmental secretary in 14 MLH.
2. We would like to hear from anyone who has a disability which may require some modification of seating, testing, or other class requirements so that appropriate arrangements may be made. Please contact your lecturer during his office hours, in the beginning of the semester and far in advance of the exams. You should notify the Office of Student Disability Services, SDS and obtain the form(s) needed. The necessary modifications will be made available to you after the SDS processes and approves your request.
3. We are planning to use ICON for posting grades and other course material. Also, some announcements may be e-mailed through ICON to your UI e-mail. Check ICON and your UI e-mail regularly, and make sure that UI has your correct e-mail address.
4. This course plan may be modified during the semester. All changes will be announced in class in advance. It is solely the student's responsibility to be informed of such announced changes.

CLAS Teaching Policies & Resources — Syllabus Insert

<https://clas.uiowa.edu/faculty/teaching-policies-resources-syllabus-insert>