

Iowa Lakes Community College

Finite Mathematics—Fall, 2009

Course Number

MA 140 (Sections 211 (Estherville), 212 (Emmetsburg), 213 (Algona), 214 (Spirit Lake), 215 (Spencer))

Instructor

David Michael Burrow

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Schedule

- Tuesday nights, 6 – 9pm, beginning September 1, 2009
- The class is broadcast over the Iowa Lakes television system, originating from the Algona Center

Credit & Prerequisites

- 3 semester hours
- Appropriate scores on one of ILCC 's mathematics placement tests are necessary for admission. The course is considered to logically follow "Math for Liberal Arts".

Transferability

This is a general education mathematics course. Students who intend to transfer to a four-year college should check with the admissions office and/or math department at their college regarding what transfer credit is given for this class.

Course Description

- **ILCC Catalog:** An applied mathematics course dealing with mathematics related to most academic disciplines. It provides introduction to matrices, linear programming, combinations, permutations, statistics, mathematics of finance, and logic.
- **General:** In this course you will learn techniques of working with multi-variable equations, sets, matrices, and statistics. You will use these techniques to solve problems from the worlds of business and science.

Overall Goals

1. Graph points and lines in Cartesian coordinates.
2. Apply the slope and distance formulas.
3. Derive the equations for lines.
4. Use linear equations to solve problems.
5. Understand and apply matrix arithmetic.
6. Use linear and matrix techniques to solve systems of linear equations.
7. Use linear programming to solve optimization problems.
8. Apply mathematical formulas used in finance.
9. Apply basic rules of probability.

Book

Tan. *Finite Mathematics for the Managerial, Life, and Social Sciences*. 9th Edition. Belmont, California: Brookes—Cole, 2009.

Calculator

A graphing calculator is essential for this class. It is helpful for simple computations, we will briefly use the graphing features (GRAPH mode), and it is vital for work with matrices (MATRIX mode) and financial math. Graphing calculators are available at discount stores such as K-Mart, Target, Shop-Ko, Pamida, Alco, or Wal-Mart for between \$60 and \$120, or through the ILCC bookstore. While no particular model is required, the TI-83 or TI-84 (which are essentially interchangeable) are probably the easiest to use, and are suggested for other math classes at ILCC. Other calculators in the TI sequence (i.e.: TI-81, TI-82, TI-94, TI-85, TI-86) are also acceptable, but you may find them more difficult to use at times. Graphing calculators made by other companies (Casio, H-P, Sharp, etc.) will also work; however, instructions in the class will be geared to the Texas Instruments machines.

Other Supplies

You will need to take organized notes almost every day, and you will want writing materials to do this. A small supply of graph paper may be useful for some problems. In addition, you may find it useful to have a ruler and/or protractor.

Assignments

You will be given suggested assignments most days in class. While these will not be turned in for a grade, it is suggested that you do the problems. We will go through most of the assigned problems in class.

Tests

You will be given five tests over the course of the semester. We will review in class before each test. By the nature of the course, each test will to some extent be cumulative, reviewing what came before. Tests will be graded on a straight points basis, with all tests (including the final) worth approximately the same number of points. The final will not specifically be cumulative, but by the nature of the course it will include material you have learned before. The tests as a whole will account for 75% of your grade.

- Tests will, in most cases, be given the first part of class on scheduled nights, with about 1½ hours scheduled for the test. We will begin learning new material following the tests.

Attendance & Participation

About 25% of your grade will be based on class participation. This includes your attendance, how well you pay attention in class, whether it appears you have done the daily assignments, and how well you participate in class. Unless you call attention to yourself in a negative way, it is assumed you will do well in this.

- Attendance is important in this class. You will find it much easier to do well if you attend regularly.
- After the first two absences, your class participation grade will be lowered for additional absences. If special circumstances come up, you must visit with the instructor to make arrangements.
- Tests must be taken when scheduled unless you make prior arrangements.

Grades

The standard ILCC grading scale applies:

- A = 90% +
- B = 80% +
- C = 70% +
- D = 60% +
- F = 59% –

Pluses and minuses are not recorded on ILCC grades. There is generally no "extra credit" in this class.

Weather Cancellation

Weather is almost always a problem at some point during the fall semester.

- In case of severe weather, the college will announce any cancellations on area radio stations. Listen throughout the afternoon for any announcements.
- Weather updates are also available on the ILCC website at <http://www.iowalakes.edu/announcement/> .

Tentative Schedule

The test dates on this schedule will not change, except due to weather-related cancellations. However, the material on individual dates may vary somewhat from what is shown here.

- **Chapter “A”** (September 1, September 8)
 - Mathematical Logic
 - Basic Algebra—Solving Linear Equations
- **Test #1**
 - September 15, 2009 ... 6:00 – 7:30pm
- **Chapter 1** (September 15, September 22, September 29)
 - The Cartesian Coordinate System
 - Slope and Distance Formulas
 - Graphing Lines
 - Parallel and Perpendicular Lines
 - Vertical and Horizontal Lines
 - Mathematical Models
 - Intersections of Lines
- **Test #2**
 - October 6, 2009 ... 6:00 – 7:30pm
- **Chapters 2 – 3** (October 6, October 13, October 20)
 - Systems of Linear Equations
 - Matrices and Determinants
 - Using Determinants to Solve Systems of Equations
 - Systems of Inequalities
 - Linear Programming
- **Test #3**
 - October 27, 2009 ... 6:00 – 7:30pm
- **Chapter 5** (October 27, November 3, November 10)
 - Simple Interest
 - Compound Interest
 - Effective Rate of Return
 - Annuities
 - Amortization
- **Test #4**
 - November 17, 2009
- **Chapters 6 – 8** (November 24, December 1, December 8)
 - Basics of Set Theory
 - Combinatorics and the Counting Principle
 - Experiments, Sample Spaces, and Events
 - Basic Rules of Probability
 - Counting Techniques
 - Conditional and Compound Probability
 - Expected Value
- **Test #5**
 - December 15, 2009 (This is scheduled as the first exam slot during Finals Week.)

STUDENT ACADEMIC HONESTY POLICY

Iowa Lakes Community College believes that personal integrity and academic honesty are fundamental to scholarship. Iowa Lakes strives to create an environment where the dignity of each person is recognized and an atmosphere of mutual trust exists between instructors and students. The faculty have confidence in the integrity of the students and encourage students to exercise good judgment in fulfilling this responsibility.

Actions contrary to academic integrity will not be tolerated. Activities that have the effect or intention of interfering with learning or fair evaluation of a student's work or performance are considered a breach of academic integrity. Examples of such unacceptable activities include, but are not limited to:

- **Cheating** (intentionally using or attempting to use unauthorized material, assistance or study aids in my academic work). For example, using a cheat sheet for a test, looking at another student's paper during an exam, stealing or buying all or parts of an exam or paper, altering and resubmitting work for a better grade without prior approval to do so, etc.
- **Plagiarism** (representing another's ideas, words, expressions or data in writing or presentation without giving proper credit, failing to cite a reference or failing to use proper documentation, using works of another gained over the Internet and submitted as one's own work).
- **Falsification and/or misrepresentation of data** (submitting contrived or made-up information in any academic exercise). For example, making up data, citing non-existent sources, etc.
- **Facilitating Academic Dishonesty** (knowingly helping or attempting to help another violate any provision of the academic honesty policy). For example, working together on a take-home exam or other assignment when the option has not been made available, giving a paper/assignment to another student for his/her use, etc.
- **Multiple Submissions** (submitting, without prior approval from the instructor involved, any work submitted to fulfill academic requirements in another class). For example, submitting the same paper for two different classes, etc.
- **Unfair Advantage** (trying to gain unauthorized advantage over fellow students). For example, gaining or facilitating unauthorized access to exam materials (past or present); interfering with another student's efforts in an academic exercise; lying about the need for an extension on a paper or assignment; destroying, hiding, removing or keeping library materials, etc.

Disciplinary Action

Any violation of this policy will be treated as a serious matter. The instructor has primary responsibility over classroom behavior and maintaining academic integrity. Depending on the nature and severity of the offense, Iowa Lakes Community College reserves the right to exercise disciplinary action as outlined in the Disciplinary Action Section of the Student Handbook.

Americans with Disabilities Act – Policy of Nondiscrimination

It is Iowa Lakes Community College policy to not discriminate against qualified individuals with disabilities and to provide reasonable accommodation(s), as required by law, to otherwise qualified applicants for admission or to students with disabilities in all education programs, activities, services and practices, including application procedures, admissions, course selection, the awarding of degrees, discipline and dismissal. Educational opportunities will not be denied to an otherwise qualified application or student because of the need to make reasonable accommodation(s) or modification(s) for the physical and mental impairment(s) of any such individual.

Iowa Lakes Community College students needing reasonable accommodation(s) and/or modification(s) should contact Linda Helmers by phone at (712) 852-5216 or (712) 362-8364 or via email at lhelters@iowlakes.edu. To assure that accommodation(s) and/or modification(s) will be ready when classes start, students must make the request as soon as possible, before a semester begins.

It is the policy of Iowa Lakes Community College not to discriminate on the basis of sex, race, national origin, creed, age, marital status or disability in its education programs, activities, or employment policies, as required by Titles VI and VII of the 1964 Civil Rights Act, Title IX of the 1972 Educational Amendments, Section 504 of the Federal Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act (ADA) of 1990.

Inquiries regarding compliance with Title IX, Title VI, Title VII, or Section 504 may be directed to Kathy Muller, Human Resources, Iowa Lakes Community College, 19 S. Seventh Street, Estherville, IA 51334, telephone (712)362-0433; to the Director of the Iowa Civil Rights Commission, Des Moines; or to the Director of the Region VII Office of Civil Rights, Department of Education, Kansas City, Missouri.