Finite Mathematics

MA103 02 Fall 2015

CRN 80434

Professor: Dr. Olga Herman
Office: JXJ 2215
Email: opendlet@nmu.edu
Potential Office Hours*: M,W,R,F 9:00-11:00 am, 1:00 - 2:00 pm, T 11:00-2:00 pm
*appointments must be made via e-mail in advance; other hours are available


Course description:
Satisfies the foundations of natural science- mathematics requirement [Division III]

Prerequisite: MA 100 (Passed with C- or better) or satisfactory score on the Math Placement Exam.

The course covers linear equations, systems of linear equations, matrices, inequalities, linear programming, functions, the mathematics of finance, permutations, combinations and probability.

This course is designed primarily for students in business, economics, management, and the social sciences and life sciences. MA 103 builds on the algebraic skills of MA 100 while emphasizing applications, modeling, and decision-making from business, social and natural sciences, medicine, and other areas. It is a prerequisite for MA 171 and can be used as a Liberal Studies elective under Division III Natural Sciences/Mathematics.

Course Content

1. Review of Algebra
   a. Polynomials and rational expressions
   b. Solving equations and inequalities
   c. Exponents and radicals
2. Linear Functions
   a. Equations of lines
b. Functional notation and definitions
c. Linear functions and models
d. Math models and curve fitting
3. Matrices
   a. Definitions and applications for matrices
   b. Solving systems of equations using matrices
   c. Operations with matrices and finding inverses
   d. Modeling and solving problems using matrices
4. Linear Programming
   a. Graphing linear inequalities
   b. Solving linear programming problems graphically
   c. Modeling and solving linear programming applications
5. Finance
   a. Simple and compound interest
   b. Geometric sequences and annuities
   c. Loans and amortization
   d. Present value of future money
6. Probability
   a. Notation, Venn diagrams, counting techniques
   b. Probability of simple and compound events
   c. Conditional probability
   d. Bernoulli trials
   e. Probability distributions of random variables; means (or expected values)
7. Introductory Statistics
   a. Graphical representations of data-sets, frequency tables
   b. Numerical summaries of data-sets

Course Requirements:

Students will complete six exams. All exams will be open book/open notes. These six exams will constitute 60% of the class grade. Homework will be assigned intermittently and may or may not be collected or reviewed. Collected homework will be graded as submitted or not (0 or 1).

Grades:

   Homework : 10%
   Six in-class exams: 60%
   Final Exam: 30%
Scate:

A ≥ 94%    A- 90% - 93%    B+ 87% - 89%    B 84% - 86%    B- 80% - 83%
C+ 77% - 79%    C 74% - 79%    C- 70% - 73%    D+ 67% - 69%    D 74% - 76%
D- 60% - 63%    F < 60%

Schedule:

Expect to spend an average of 15 hours of study per chapter. A few things to consider:
- Some chapters are easier than others and will take less time. Expect to spend more than 15 hours on some of the harder chapters.
- There is a math help lab available (check with the math department main office for the location and times). These are conducted by students who have usually had this class and can offer assistance.

Attendance: Attendance in lecture classes is not mandatory. Attendance will be taken sporadically primarily so I can get to know you individually. However, you are responsible for any material or announcements (i.e. test dates, assignment due dates, etc.) made in class. Therefore, except for test days, no absentee excuses are necessary.

Homework policy: Homework will be evaluated as attempted (1) or not (0) and will be used in assessing the final grade by no more than 10%. This generally serves as a factor in determining borderline grades. If you feel you may need the homework to help your grade you should try to submit all collected assignments. There will be an opportunity before each class period to ask questions about the homework or lecture material. Late homework is always accepted at any time during the semester.

Make-up exam policy:

Make-up exams will only be allowed with permission of the instructor for valid health issues or approved extenuating circumstances. If permission is granted, the exams MUST be made-up within ONE-WEEK of the original test date. Re-takes of exams will not be given except in extenuating situations with permission from instructor.

Communication: Communication will be via my NMU email address: opendlet@nmu.edu. All emails will be answered within 48 hrs. Grades will be communicated via educat. No other forms of electronic communication (i.e. educat email or stats portal) will be acknowledged.

Disability Services
If you have a need for disability-related accommodations or services, please inform the Coordinator of Disability Services in the Dean of Students Office at 2001 C. B. Hedgcock Building (227-1700 or disserv@nmu.edu). Reasonable and effective accommodations and services will be provided to students if requests are made in a timely manner, with appropriate documentation, in accordance with federal, state, and University guidelines.

*This syllabus is subject to change with notice.*

**Tentative** Timeline for MA103 Fall 2015

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<th>Week</th>
<th>Date</th>
<th>Chapter</th>
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<td>8/24</td>
<td>Ch.1</td>
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<td>2</td>
<td>8/31</td>
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<td>3</td>
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<td>13</td>
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<td>14</td>
<td>11/23</td>
<td>Thanksgiving break</td>
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<td>Final review</td>
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**Final exam choice of days/times**

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<td>Tues 12/8 12:00-1:50 pm</td>
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<td>Wed 12/9 2:30-3:50 pm</td>
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