

# Math 120: Fundamentals of College Mathematics

3 credits • Spring 2012

**Instructor:** Damien Ennis

**Email:** dennis@tmcc.edu

**Office:** Vista B111C

**Phone:** 775-673-7109

**Webpage:** <http://juxtapositionsoftware.com/tmcc/>

**Office Hours:**

Tuesday 12:30-3:00

Thursday 12:30-3:00

## 1. Topics and Course Description:

This course will cover mathematical concepts particularly relevant to informed and aware citizenship in modern society. Topics include functions, graphs, problem solving, finance, geometry, probability, and statistics. This course satisfies the UNR core curriculum.

Assessment Outcomes for Math 120:

- Outcome 1: Students will demonstrate the ability to solve financial math problems.
- Outcome 2: Students will demonstrate the ability to solve exponential growth and decay problems.
- Outcome 3: Students will demonstrate the ability to solve basic problems in probability and statistics.

## 2. Learning Objectives:

- Describe and represent sets and combinations of sets.
- Compute and use the cardinal number of a set by using Venn diagram.
- Apply the rules of combinatorics and combinations of sets to compute the cardinal number of a set.
- Identify a probability experiment and construct or describe its sample space.
- Identify events and compliments of events and compute theoretical and empirical probabilities by using the definitions and rules of probability and combinatorics.
- Compute the expectation of a random variable.
- Construct or interpret a frequency distribution and histogram for a set of data.
- Compute the mean, median, mode, variance and standard deviation for a set of raw or grouped data.
- Use the Normal Distribution to perform computations in probability and to solve applied problems including but not limited to confidence intervals and margins of error.
- Find and interpret a linear regression equation for a set of data.
- Compute present and future values by using formulas appropriate to simple and compound interest as appropriate.
- Apply financial formulas to solve applied problems and make critical choices in situations involving add-on interest loans, simple interest amortized loans, and annuities.
- Convert units within and between unit systems by using Dimensional Analysis.
- Perform geometric computations involving perimeter, area, surface area and volume and apply these concepts to application situations.
- Find exact and approximate values for trigonometric ratios for angles measured in degrees.
- Apply trigonometry to problems involving solving and applying right triangles.
- Use exponential and logarithmic functions in mathematical modeling.
- Solve and apply exponential equations.

## 3. Academic Responsibilities:

- Learn all the material covered in this course.
- Learn basic calculator procedures to solve problems.
- Take all tests and complete ALL homework/group work as stated in the class policy.

- Watch lectures, read new sections, and complete reading assignments before coming to class.

#### **4. Required Materials:**

*College Mathematics*, Multimedia Edition (by Theodore J. Lambert, III)

*Homework Assistant* software

TI-83 or TI-84 graphing calculator

#### **5. Prerequisite:**

C or better in MATH 096 or equivalent or qualifying ACCUPLACER, ACT/SAT test results.

#### **6. Class Format:**

Reading assignments will be checked at the beginning of class. Classes will include lectures (that supplement the videos), question and answer sessions, in-class exercises, group work, and assigned homework. Students are expected to actively participate in class discussions and group work.

#### **7. Attendance:**

Attendance is checked every class period. Students are required to come to class on time and to stay for the entire class period. Any student who has missed more than three classes may be dropped from the roster.

#### **8. Homework:**

Homework will be assigned each class period and is to be completed using the *Homework Assistant* software. No late work will be accepted. If students are absent from class, they are responsible for obtaining the homework assignments from other students. It is the student's responsibility to keep current with the homework and ask questions to ensure proper understanding.

#### **9. Tests:**

There will be two exams and a comprehensive final which will each take a full class period. Make-up tests will be given only for documented emergency situations with prior approval and at my convenience. Having fallen behind in your studies is not an acceptable excuse. The make-up test will be considerably more difficult than the original, and there is no make-up test for the final.

#### **10. Reading Assignments:**

Reading assignments will be checked during the first 5 minutes of class. After that time no credit will be given.

#### **11. Grading:**

Students may choose one of the following two grading schemes. You must commit to one or the other when the policy sign-up sheet is distributed in class. If you do not sign up for a specific policy you will be graded under policy 2.

(1) Homework is graded on a completion basis. A homework certificate with a score of 80% or better is required for a homework set to be considered completed. All completed homework receives full credit. The final grade will be determined by the following percentages:

Exam 1	20%
Exam 2	20%
Final	30%
Reading assignments & participation	10%
Homework	20%

(2) Homework is graded based on homework certificate scores. The grade on the certificate is the grade recorded. The final grade will be determined by the following percentages:

Exam 1	15%
Exam 2	15%
Final	30%
Reading assignments & participation	10%
Homework	30%

In either case, letter grades will be assigned as follows:

A: 90-100% B: 80-89% C: 70-79%, D: 60-69% F: below 60%

Cheating will not be tolerated and will result in an F. Note that this includes any altered homework certificates.

### 12. Projected Schedule Breakdown:

Lecture	Sections	Lecture	Sections
1	1.1	16	Review
2	1.2	17	Exam 2
3	1.3	18	5.1
4	2.1	19	5.2
5	2.2	20	5.3
6	Review	21	5.4
7	Exam 1	22	5.5
8	3.1	23	6.1
9	3.2	24	6.2
10	3.3	25	6.3
11	4.1	26	6.4
12	4.2	27	6.4
13	4.3	28	6.5
14	4.4	29	Review
15	4.4	30	Final Exam

### 13. How to Succeed in this Class:

If you want to be successful in this course, you need to do the following things for every section in the given order:

1. Watch the video lecture for the upcoming section before the next class period.
2. Read the accompanying section in the textbook.
3. Complete the reading assignment for the section.
4. Do the appropriate *Homework Assistant* assignment.
5. Come to class with the homework and reading assignment completed. Ask any questions about the video, the reading, or the homework in class.
6. If your homework grade for a section is below 100%, try it again.

### 14. TMCC's Americans with Disability Act (ADA) Statement:

Qualified, self-identified students with documented disabilities have the right

to free accommodations to ensure equal access to educational opportunities at Truckee Meadows Community College. For assistance, contact TMCC's Disability Resource Center at 775-673-7277, TTY 775-673-7888, come by the Red Mountain Building, room 315 B, or visit [www.tmcc.edu/drc](http://www.tmcc.edu/drc).

**15. Student Classroom Conduct Statement:**

Truckee Meadows Community College encourages all students to pursue academic studies and other college-sponsored activities that promote intellectual growth and personal development. Students are responsible for complying with Nevada System of Higher Education (NSHE) and college guidelines. TMCC has an obligation to maintain conditions under which the work of the college can go forward freely, in accordance with the highest standards of quality, institutional integrity, and freedom of expression. These standards, procedures for reporting infractions, and processes for addressing complaints and allegations are available on the TMCC web site, college catalog (Appendix L) and the office of the Associate Dean of Students (RDMT 120, 673-7114).