DAKOTA COLLEGE AT BOTTINEAU

COURSE SYLLABUS

Course Prefix/Number/Title: MATH 104 Finite Mathematics

Number of Credits: 3

Course Description: An extension of basic algebra to areas that have applications in the economic, behavior, social, and life sciences. Topics include systems of linear equations and inequalities, matrices, linear programming, mathematics of finance, elementary probability and descriptive statistics.

Prerequisites: ASC 93 with a grade of C or higher, or appropriate Math Placement Test Score.

Course Objectives: Learners in MATH 104 will be able to:

1. Work with and apply elementary probability.
2. Work with and apply the mathematics of finances.
3. Solve systems of linear equations.
4. Solve systems of linear inequalities.
5. Work with and apply linear programming.
6. Work with and apply descriptive statistics.
7. Work with and apply demonstration of an understanding of matrices.

Instructor: Harmony Richman, M.Ed.

Office: McFarland 427C on the Valley City State University campus

Office Hours: See instructor's calendar to set up an appointment.

Phone: 701-200-3897 (cell)

Email: Harmony.Richman@vcsu.edu

Lecture/Lab Schedule: Online

Textbook(s): Business Precalc (2016) Edition 0.1; Lippman and Rasmussen for Units 1 through 6. Full free PDF version. Unit 7 will use portions of Introductory Statistics via Open Stax.

Technology tools required: Internet access which is regular and dependable. Internet browser (Firefox or Google Chrome preference), Office 365, Adobe Acrobat Reading, Adobe Flash Player, ability to record audio and/or video, additional free web-based software such as Desmos graphing calculator and MyOpenMath.

Course Requirements: Students who are in the college classroom either face-to-face or online have made the conscious choice to be a part of the course. In this course, you are viewed as a participant in the learning; hence there are expectations that come with the choice you made to take this course.

1. This course does not have standard class meeting time; students are expected to dedicate at least 450 minutes of total time on tasks per week that may include activities such as: reading, reviewing class lessons with notes, assignments, additional readings with ungraded practice, and discussion boards. *Course tasks and time are estimated based on time and effort needed by the typical student to successfully complete each of the learning activities in the course.* Occasionally a reading or research assignment may take longer.
    2. Actively participate regularly in class discussions through consistent, punctual, prepared and interested participation.
    3. Utilize MyOpenMath to support academic assessment work.
    4. Submit graded assignments by dates posted on the course calendar. It is unfair to selectively grant extensions to some students and not others. Therefore, late assignments are not accepted. Addendums to this rule include medical and/or prior approval from the instructor. A zero will be given for any assignment not turned in by the deadline.
    5. During the course of the semester, if you are experiencing any problems (family difficulties, sick relatives, etc.) that are affecting your academic performance, you must inform me of such problems ASAP if you want me to take them into consideration. The sooner I know about a problem, the more understanding I will be. If you come to me during the last week of the semester, before grades are about to be assigned to discuss difficulties which have affected you throughout the term, you will find that I am not nearly as understanding and that I can do very little to help you with your grade.
    6. Read assigned textbook chapters.
    7. Do ungraded, independent practice exercises.
    8. Submit some assigned problems with the Show Your Work Discussions as pdf or jpeg files.
    9. Complete graded quizzes/tests throughout and after each chapter within MyOpenMath.

Tentative Course Outline: See Table 1 Course Schedule below.

General Education Competency/Learning Outcome(s) OR CTE Competency/Department Learning Outcome(s):
Competency/Goal 3: Demonstrates the ability to solve a variety of mathematical problems
Learning Outcome 1: Utilizes mathematical skills to solve problems
Learning Outcome 2: Employs critical thinking skills to solve problems
Relationship to Campus Focus:
Students will explore real-world applications of mathematics in nature, economics, statistics, behavioral, social and life sciences.

Classroom Policies:
1. Our class "week" runs Saturday starting at 12:00AM through Friday at 11:59 PM.
2. Due dates for all assignments will be given throughout the duration of this course. Sufficient notice of due dates for assignments will be given, there is no reason why the assignments cannot be completed on time.
3. It is unfair to selectively grant extensions to some students and not others. Therefore, late assignments are not accepted. Addendums to this rule may include medical and/or prior approval from the instructor. A zero will be given for any assignment not turned in by the deadline.
4. Your final grade is determined by dividing the total points earned by the total points possible. Points will be awarded for thoughtful posts of show your work discussion boards, selected practice using MyOpenMath and unit quizzes using MyOpenMath.
5. Grades will be calculated using the following criteria:

A 90% - 100%

B 80% - 89%
C 70% - 79%
D 60% - 69%
F ≤ 59%

Student Email Policy:

Dakota College at Bottineau is increasingly dependent upon email as an official form of communication. A student's campus-assigned email address will be the only one recognized by the Campus for official mailings. The liability for missing or not acting upon important information conveyed via campus email rests with the student.

Academic Integrity:

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.

Disabilities or Special Needs:

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services.

Title IX:

Dakota College at Bottineau (DCB) faculty are committed to helping create a safe learning environment for all students and for the College as a whole. Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if a student tells a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the College's Title IX Coordinator. Students wishing to speak to a confidential employee who does not have this reporting responsibility can find a list of resources on the DCB Title IX webpage.

Table 1 Course Schedule

The Topics and Readings with Assignments are subject to change based on learners, weather, and other components that are unable to be identified before the semester begins. Refer to Blackboard for official due dates.

Week	Content	Due Date
Week 1 June 5th - June 9th	Welcome MyOpenMath Registration Unit 1 Functions and Lines *Course Objective 3: Solve systems of linear equations.* ● 1.1 Functions and Function Notation ● 1.2 Domain and Range	Due date for all items bulleted this week is June 9th at 11:59 PM

	• 1.3 Rates of Change and Behavior of Graphs • Show Your Work Discussion • 1.4 Linear Functions • 1.5 Graphs of Linear Functions	
Week 2 June 10th - June 16th	Unit 1 Functions and Lines • 1.6 Modeling with Linear Functions • 1.7 Fitting Linear Models to Data • Unit 1 Quiz Unit 2: Systems of Equations and Matrices *Course Objective 3: Solve systems of linear equations.* *Course Objective 7: Work with and apply demonstration of an understanding of matrices.* • 2.1 Systems of Equations • 2.2 Solving Systems of Matrices • Show Your Work Discussion	Due date for all items bulleted this week is June 16th at 11:59 PM
Week 3 June 17th - June 23rd	Unit 2: Systems of Equations and Matrices • 2.3 Matrix Operations • 2.4 Solving Systems with Inverses • Unit 2 Quiz Unit 3: Linear Programming *Course Objective 4: Solve systems of linear inequalities.* *Course Objective 5: Work with and apply linear programming.* • 3.1 Inequalities in One Variable • 3.2 Linear Inequalities • 3.3 Graphical Solutions • Show Your Work Discussion	Due date for all items bulleted this week is June 23rd at 11:59 PM
Week 4 June 24th - June 30th	Unit 3: Linear Programming • 3.4 Applications of Linear Programming • Unit 3 Quiz Unit 4: Finances *Course Objective 2: Work with and apply the mathematics of finances.* • 6.1 Simple and Compound Interest • 6.2 Annuities • 6.3 Payout Annuities • Complete the Show Your Work Discussion	Due date for all items bulleted this week is June 30th at 11:59 PM
Week 5 July 1st - July 7th	Unit 4: Finances • 6.4 Loans • 6.5 Multistage Finance Problems • Unit 6 Quiz Unit 5: Sets *Course Objective 1: Work with and apply elementary probability.* • 7.1 Sets • 7.2 Venn Diagrams and Cardinality • Unit 7 Quiz	Due date for all items bulleted this week is July 7th at 11:59 PM
Week 6 July 8th - July 14th	Unit 6: Probability	Due date for all items bulleted this

	Course Objective 1: Work with and apply elementary probability. ● 8.1 Concepts of Probability ● 8.2 Conditional Probability and Bayes Theorem ● 8.4 Expected Value ● Unit 6 Quiz	week is July 14th at 11:59 PM
Week 7 July 15th - July 21st	Unit 7: Statistics *Course Objective 6: Work with and apply descriptive statistics.* ● 9.1 Basic Statistical Terminology ● 9.2 Data Types ● 9.3 Frequency Distributions and Graphs ● 9.4 Measures of Center	Due date for all items bulleted this week is July 21st at 11:59 PM
Week 8 July 22nd - July 28th	Unit 7: Statistics ● 9.5 Measures of Variance ● 9.6 Empirical Rule ● 9.7 Percentiles, Quartiles, and Boxplots ● 9.8 Scatterplots, Correlation and Regression ● Unit 9 Quiz	Due date for all items bulleted this week is July 28th at 11:59 PM