



UNIVERSITY OF NORTHERN COLORADO

Extended Campus

College of Natural & Health Sciences
School of Mathematical Sciences

UNC Dual Enrollment at Windsor High School

MATH 120-695/683: Mathematics and Liberal Arts (3 credits; LAC, gtP*)

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Office Hours: TBD

Prerequisite for UNC Dual Enrollment:

- Junior or Senior status
- 3.0 cumulative GPA
- Grade of “C” or better in Algebra. A grade of C- is not acceptable.
- Counselor/Instructor approval prior to taking the course
- Parent consent
- Special Exemptions to these qualifications may be made on an individual basis through written request to UNC Extended Campus

Course Description: Learn about several topics in mathematics through intuitive presentation to help those who want to know more about mathematics. Not open to mathematics majors and minors. Furthermore, the quantitative reasoning approach of the course helps students build the skills necessary to understand real-life situations and compels them to acquire the problem-solving tools that they will need to think critically about quantitative issues in contemporary society. Topics include logic and problem solving, critical thinking with quantitative information, finance, statistics, probability, functions and modeling, modeling with geometry, mathematics and the arts, and mathematics and politics.

Required Materials:

- Textbook: Bennett, J. Briggs, W. (2015). *Using & Understanding Mathematics: A Quantitative Reasoning Approach*, 6th ed. Boston: Pearson.
- Graphing Calculator. Acceptable models include TI-83, TI-83+, TI-84, TI-84+, all other models please ask. (Instructor will be using a TI-84+).
 - Sharing of calculators during quizzes or exams will not be permitted.
 - Bring calculators to class. We will be using them throughout the term.

Methods of Evaluation

Grading for Learning:

In an effort to further emphasize student learning, growth, and achievement, this class focuses on Grading for Learning. This system seeks to provide grades that are consistent, accurate, meaningful, and most of all that support learning. Two types of assessments are used to support such learning. Formative assessments are used for student learning to provide feedback and time for improvement. Summative assessments are assessments of learning, used to show student achievement. In essence you are being evaluated based on the quality of your work, not completion.

Types of assessments:

	Formative Assessments	Summative Assessments
Types	Homework, Class work, Checks for understanding, conferencing	Tests, Quizzes, Projects, other Performance Assessments
Purpose for Student	Happens during learning to give student feedback on their progress towards proficiency at a particular skill.	Happens at the end of learning to gauge students achievement of a skill
Grading	Formative Assessments will receive a score from 0 - 4 or mark; "M" = not submitted (0 points if not made up). These may or may not encompass multiple learning targets.	Summative Assessments will encompass multiple learning targets, and each will be assessed on a 0 - 1 scale for multiple choice and 0 - 4-point rubric scale free response. Rubrics will vary depending on the assessment.

Instead of quiz corrections you will be able to earn grade replacement from your test if you increase your score. NO points will be given back from tests.

Grade Breakdown:

Grading Scale (weighted):	
A 90% -100% 5 quality points	Grade Breakdown
B 80% - 89% 4 quality points	
C 70% - 79% 3 quality points	
D 60% - 69% 1 quality point	
F 0% - 59% 0 quality points	
Summative Assessments (tests, quizzes, projects)	70%
Formative Assessment (daily work, HW/HW quizzes, in-class activities)	20%
Semester Final Exam (Cumulative)	10%

Assignment Policy:

Assignments are generally given each class. The purpose of assignments and homework is to practice what has been learned in class. It is expected that you will come to class prepared to discuss the previous night's assignment with your team and/or class. I will check for assignment completion each day. Assignments are considered complete when every problem has at least been reasonably attempted, *including work*. Additionally, students may be randomly selected to present a particular homework problem.

Assessments:

- Quizzes will be relatively frequent and may range in length but will encompass necessary learning targets. Since my system utilizes grading for learning, learning targets may be reassessed throughout the semester at the instructor's discretion. Quizzes can be announced and/or unannounced and may be paper/pencil or online as well.
- Tests will be given throughout the semester to assess your expanded knowledge. You will generally be given a notice of one week before an exam is given.
- Projects may be given. Details will be announced at the time I assign them.
- Final Exams will be given each semester and will be cumulative.

Absences/Tardy Policy

Unexcused Absences: You are responsible for any content missed, but no credit will be given for missed assessments.

Excused Absences: Any quiz or test must be made up within one week after the original test date. If you only missed a review day or a test day, expect to take the test the day you return to school. *Please note that it is your responsibility to find time to come in outside of class to complete your test/quiz and to get any assignments or notes you missed.*

Tardy Policy: Prompt attendance is a key component to academic success. Attendance is taken at the beginning of each class period. If you are tardy to class, you must report to the Attendance Office for a tardy slip to be admitted to class. The teacher and/or administration may institute additional consequences including lunch detention, after school detention, etc. for students who are repeatedly tardy to classes.

Portable Electronic Devices

Please extend courtesy to your instructor and fellow students by turning off your portable electronic devices such as: cell phones, pagers, and iPods. Although not an audio issue, text-messaging is a distraction to other students and prevents you from full participation in class. You should keep your portable electronic devices in your backpack or purse during class. Your personal electronic devices should not be on your desks. If you know that you may need to accept an emergency phone call during class, please let the instructor know. If you need to take a phone call during class, please step out of the classroom while you complete your call. Thank you for your cooperation.

Honor Code

All members of the University of Northern Colorado community are entrusted with the responsibility to uphold and promote five fundamental values: Honesty, Trust, Respect, Fairness, and Responsibility. These core elements foster an atmosphere, inside and outside of the classroom, which serves as a foundation and guides the UNC community's academic, professional, and personal growth. Endorsement of these core elements by students, faculty, staff, administration, and trustees strengthens the integrity and value of our academic climate.

Academic Conduct: UNC's Policies

UNC's policies and recommendations for academic misconduct will be followed. For additional information, please see the Dean of Student's website, <http://www.unco.edu/dean-of-students/>. Off-campus students taking courses from UNC, should familiarize themselves with the academic regulations and procedures contained in the current UNC catalog: <http://catalog.unco.edu/>.

Students with Disabilities

Any student with disability accommodations/modifications will be supported the fullest extent.

***Liberal arts core & Colorado gtPathways.** This course satisfies 3 credits of Area 2. (Mathematics) of the UNC Liberal Arts Core. This course has been approved by the Colorado Commission on Higher Education for inclusion in the Colorado Guaranteed Transfer Program, gtP. gtP courses automatically transfer to any public institution in Colorado and will continue to count toward general education or other graduation requirements for any liberal arts or science associate or bachelor's degree program IF a grade of C- or higher is recorded. Statewide articulation agreements prescribe specific general education and degree requirements in the following professional degree programs: business, early childhood, elementary education, engineering and nursing. Most other courses not approved for the gtP designation will also be accepted in transfer by other institutions but may not fulfill general education or degree requirements. For more information on the GT Pathways program, go to <http://higherred.colorado.gov/academics/transfers/gtpathways/curriculum.html>.

Students who successfully complete the Area 2 Liberal Arts Core requirement in mathematics will have developed an understanding of fundamental mathematical concepts and their applications, will have developed their quantitative problem-solving skills, and will have developed a level of quantitative literacy that provides a foundation for success in their programs of study, careers, and citizenship.

Specifically, they will be able to:

- a) Demonstrate good problem-solving habits, including:
 - estimating solutions and recognizing unreasonable results
 - considering a variety of approaches to a given problem, and selecting one that is appropriate
 - interpreting solutions correctly
- b) Generate and interpret symbolic, graphical, numerical, and verbal (written or oral) representations of mathematical ideas
- c) Communicate mathematical ideas in written and/or oral form using appropriate mathematical language, notation, and style
- d) Apply mathematical concepts, procedures, and techniques appropriate to the course
- e) Recognize and apply patterns or mathematical structure
- f) Utilize and integrate appropriate technology
- g) Demonstrate competency in Quantitative Literacy by being able to:
 - 1) Interpret Information
 - a. Explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words).
 - 2) Represent Information
 - a. Convert information into and between various mathematical forms (e.g., equations, graphs, diagrams, tables, words).
 - 3) Perform Calculations
 - a. Solve problems or equations at the appropriate course level.
 - b. Use appropriate mathematical notation.
 - c. Solve a variety of different problem types that involve a multi-step solution and address the validity of the results.
 - 4) Apply and Analyze Information
 - a. Make use of graphical objects (such as graphs of equations in two or three variables, histograms, scatterplots of bivariate data, geometrical figures, etc.) to supplement a solution to a typical problem at the appropriate level.
 - b. Formulate, organize, and articulate solutions to theoretical and application problems at the appropriate course level.
 - c. Make judgments based on mathematical analysis appropriate to the course level.
 - 5) Communicate Using Mathematical Forms
 - a. Express mathematical analysis symbolically, graphically, and in written language that clarifies/justifies/summarizes reasoning (may also include oral communication). Students will be assessed on the content and competency criteria through a combination of tests, quizzes and homework assignments.

Changes

The instructor reserves the right to amend, adjust, or otherwise modify the outline and syllabus at any time during the course.

Course Outline

- 1) Logic and Problem-Solving
 - a) Fallacies
 - b) Proposition and Truth Values
 - c) Sets and Venn Diagrams
 - d) Analyzing Arguments
 - e) Critical Thinking in Everyday Life
- 2) Approaches to Problem Solving
 - a) Working with Units (Conversions)
 - b) Problem Solving with Units
 - c) Problem-Solving Guidelines and Hints
- 3) Numbers in the Real World
 - a) Uses and Abuses of Percentages
 - b) Scientific Notation
 - c) Dealing with Uncertainty
 - d) Index Numbers
- 4) Finance
 - a) Power of Compounding
 - b) Annuities
 - c) Loans
 - d) Income Taxes
 - e) Federal Budget
- 5) Statistics and Probability
 - a) Statistical Study Design
 - b) Descriptive Statistics, Tables, and Graphs
 - c) Correlation and Causality
- 6) Statistics
 - a) Characterizing Data
 - b) Measures of Variation
 - c) Normal Distribution
 - d) Statistical Inference
- 7) Modeling
 - a) Linear
 - b) Exponential
- 8) Mathematics and the Arts

Dropping or withdrawing from a course

- *Note: Drop and withdrawal dates for the courses at your school can be found on your [dual enrollment page for your high school](#).*
- Please use the [Dual Enrollment Drop & Withdrawal Form](#).
- You can drop your course up until the designated Drop Deadline. The course will be removed from your transcript and you will receive a full tuition refund.
- After the Drop Deadline and up until the Withdrawal Deadline you can withdraw from your course. The course will remain on your transcript with a grade of “W” (this does not impact your GPA), and there is no tuition refund.
- After the withdrawal deadline you are unable to be removed from the course. The course will remain on your transcript with the grade that you have earned, and there is no tuition refund.

- If you stop attending the course but fail to officially withdraw from the course(s), you will be responsible for full tuition and fees and the course grade will remain on your transcript.