Course Number: MATH 120C-ES eStart Quantitative Reasoning	
Hours: 100% Online, **Credits -** 4.0	
Prerequisite(s): Satisfactory placement test scores as defined by the mathematics faculty or successful completion [with a grade of C or higher] of MATH 092C or by permission of the math department chair.) Students who have received credit for MATH 120C may not also receive credit for MATH 120XC.	
Term: Fall 2023 (8/28/23 – 12/15/23)	
Faculty: Amy Ballou	
Faculty Accessibility: Appointment via Zoom or by e-mail	
Email: aballou@ccsnh.edu	

Syllabus Table of Contents

This syllabus is to be used as a guide; it contains information about the course, how it will be taught, what will be required of students, and assessment methods that will be used. All information is subject to change at any time.

Course Description

This course is designed to expose the student to a wide range of general mathematics. Problem solving and critical thinking skills, along with the use of technology, will be emphasized and reinforced throughout the course as the student becomes actively involved in solving applied problems. Topics include: number systems; set theory; modeling; finance; geometry; measurement; probability; statistics; selected subtopics related to the student's major field of study. A TI-84 or TI-30X IIS graphing calculator is strongly recommended. (Prerequisite: Satisfactory placement test scores as defined by the mathematics faculty or successful completion [with a grade of C or higher] of MATH 092C or by permission of the math department chair.) Students who have received credit for MATH 120C may not also receive credit for MATH 120XC.]

Learning Outcomes

Educated Person Statement of Philosophy

Upon completion of this course, students will be able to:
- Solve problems involving percent and proportion.
- Convert between number systems that have different bases.
- Apply finance formulas for simple and compound interest and annuities.
- Convert between standard and metric systems of measurement (area, volume, weight, temperature).
- Calculate perimeter, area, volume, and surface area of two- and three-dimensional objects.
- Apply trigonometric relationships.
- Apply counting methods and fundamentals of probability.
- Calculate measures of central tendency and dispersion.
- Build and interpret frequency distributions and statistical graphs.
- Apply the normal distribution to solve problems.
- Apply and interpret linear correlation and regression.

Course Materials and Resources

Textbooks, materials, and software are available online at www.nhtishop.com unless specified by your instructor.

Textbooks, Required

Lumen OHM **Generic Course Activation Code** (ISBN: 9781640871632)
The *Lumen OHM* access code is required to gain access to all online Exercises and Tests. Students not enrolled in *Lumen OHM* by September 11, 2023 (which is the last day to withdraw from a full-semester course with a tuition refund) will be dropped from the course as Never Attended.

Materials, Required

The student must have access to and know how to use **Microsoft Word** and **Microsoft Excel** to complete the Finance Project Part 1 and Finance Project Part 2 assignments.

Materials, Strongly Recommended

TI-84 or equivalent calculator
The TI-84 calculator is used extensively in MATH 251C Statistics, the course that follows MATH 120XC; for this reason, calculator-based solutions are emphasized. Formula-based solutions to Exercise questions will occasionally be demonstrated, using the calculator available in the Lumen OHM assessments. Links to web sites offering calculators that perform similar functions to the TI-84 will be posted in Canvas on the **Reading and Resources** pages, when appropriate.

Canvas Orientation

If you are unfamiliar with Canvas at CCSNH, please complete the Canvas student orientation.

Available Technical Support

If you need help navigating this course, explore the Canvas Student Guide. The Student Guide, Chat, and Phone offer helpful information and are always found by clicking on the help button on the ❓ right side of every page in Canvas.

Instructional Approach

Each week, students are expected to complete the Reading Assignment and view the PowerPoint Lecture on the **Reading and Resources** page prior to attempting to complete the corresponding Lumen OHM Exercises. Several learning aids are available in each module on the **Reading and Resources** page, including videos demonstrating how to solve selected problems from the homework, handouts, and links to YouTube videos and online calculators (when applicable). Students should plan to spend a minimum of 12 hours per week on coursework.

Students are encouraged to ask for clarification using any or all resources available, including:

- Posting in the online Discussion available in Canvas
- Using the *Message instructor* feature in the *Lumen OHM* homework
- Requesting an appointment with the instructor via Zoom
- Meeting with an NHTI tutor through the Online Tutoring service (a link is posted in Canvas)

After satisfactorily completing the Exercises assigned for homework, the student should be adequately prepared to take the corresponding test. The instructor reviews test results and gives detailed feedback on incorrect answers for which the student showed work. This feedback explains how the correct answer could have been obtained, with a focus on using the TI-84 calculator. The student is expected to read these review comments and seek further explanation, if required. The review comments are intended to help the student avoid making similar mistakes on the final exam at the end of the course.

Assessment of Learning

Assignment/Assessment Descriptions

Exercises
> Exercises must be completed online by the due date specified in Canvas. If the student is unable to come up with the correct answer to a question after two tries, the correct answer will show. The student can enter this answer for 25% credit and move on to the next question or you can *Try a similar problem* to attempt to get full credit for the question. If after repeated attempts the student cannot figure out how to get the correct answer, the student should use the *Message instructor* link at the bottom of the question or work with an online tutor via Zoom through the NHTI Math Lab tutoring center. For more information, see **Late Assignment Policy** in this syllabus.

Finance Project
> In addition to a test for the Finance module, the student will complete a project that simulates real-life scenarios intended to introduce the basics of personal finance. The project is divided into two parts: 1) Simple and ordinary compound interest and Annual Percentage Yield (APY); and
> 2) Family Budget, which involves future value (saving for retirement or college) and present value (car loan, mortgage, credit cards). The student will receive one score for the project.

Tests
> Tests become available on the day prior to the due date and have a two-hour time limit.   The student is expected to satisfactorily complete the corresponding Exercises assignments prior to taking the test. Although there is no *Try a similar problem* option, the student is allowed two tries at each test question. A 30% penalty is applied after the first try.

Students are expected to take each test by the scheduled due date. **NOTE:** Requests to open a test ahead of the original availability date will not be honored except in cases of extenuating circumstances that the student is able to support with appropriate documentation. For more information, see **Late Assignment Policy** in this syllabus.

Students may submit a photo of their written work for any *incorrect* answer to a test question in consideration for potential additional credit. This work must show how the submitted answer was obtained. If the student's approach is correct, the instructor will give additional partial or full credit for the problem. The photo is to be attached to the incorrect question after the test has been submitted.

NOTE

- The instructor will not provide the solution to a test question marked incorrect unless the student submits work showing that he or she made a reasonable attempt to solve the problem.
- When the student uses the TI-84 calculator to solve a problem, shown work will consist of the command used and the input typed into the command prompts.
- A question marked wrong for which no work was submitted will receive no partial credit except in those instances where the student gave a correct answer but made a minor rounding or typographical error or used the wrong format (for example, entering a decimal when a fraction was expected).

Final Exam

The Final Exam covers the entire course and has a three-hour time limit. The Final Exam will be available for a two-day period. **NOTE:** Requests to open the final exam ahead of the original availability date will not be honored except in cases of extenuating circumstances that the student is able to support with appropriate documentation.

In accordance with institute policy, all students are required to take the Final Exam, regardless of their academic standing at the end of the semester.

For potential additional credit students may show how an *incorrect* answer was obtained by typing their work or attaching a photo of work done on paper. The photos are to be attached after the final exam is submitted.

Any student who misses the due date for the Final Exam – *unless acceptable, documented evidence can be produced to excuse the student's absence* – receives a score of 0 for the exam. If the student is ill, the student must notify the instructor *prior* to the time at which the Final Exam is due. The student is then responsible for arranging with the instructor a new date by which to submit the Final Exam.

Grading Criteria and Grade Calculation

Category	% of Final Course Grade
Exercises/Projects	30%
Tests	40%
Discussions	10%
Final Exam	20%
Total	**100%**

Grading Schema	
A	93-100
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	73-76
C-	70-72
D+	67-69
D	63-66
D-	60-62
F	< 60

Course Schedule

Module	Dates	Topics	Assignments	Tests	Due
1	8/28 – 9/3	Problem Solving	Exercises/Discussion		9/4
2	9/4 – 9/10	Counting Systems	Exercises	Test 1	9/11
3	9/11 – 9/17	Measurement	Exercises		9/18
4	9/18 – 9/24	Geometry	Exercises		9/25
5	9/25 – 10/1	Trigonometry	Exercises/Discussion	Test 2	10/2
6	10/2 – 10/8	Finance	Exercises		10/9
	10/9 – 10/15	Finance	Project		10/16
7	10/16 – 10/29	Sets	Exercises	Test 3	10/30
8	10/30 – 11/5	Probability	Exercises		11/6
9	11/6 – 11/12	Basic Statistics	Exercises		11/13
10	11/13 – 11/19	Normal Distribution	Exercises	Test 4	11/20
11	11/20 – 11/26	Correlation and Regression	Exercises		11/27
12	11/27 – 12/3	Voting and Apportionment	Exercises/Discussion	Test 5	12/4
	12/4 – 12/10	Final Exam Review	Practice Test		12/11
		FINAL EXAM			12/14

Enrolling in Lumen OHM

All Exercises and Tests (including the Final Exam) in this course require the student to be enrolled in in *Lumen OHM*. The activation code required to enroll in *Lumen OHM* must be purchased at the NHTI Bookstore. To enroll, click the link for any Exercises assignment in the **Course Summary** at the bottom of the **Syllabus** page in Canvas and enter the activation code (printed on the bottom of your receipt or sent in an e-mail confirmation of your online purchase through the NHTI Bookstore). A free, two-week trial period is available so that students waiting for financial aid can enroll without delaying participation.

Students are expected to enroll in *Lumen OHM* via the NHTI Canvas course with permanent access by no later than **September 11, 2023** (which is the last day to drop the course for a full refund). Students who fail to meet the enrollment deadline are eligible to be dropped from the course as Never Attended.

Course Notices

Faculty Email Response Time

The student can expect a response within 24 hours of sending an e-mail.

Posting of Grades

Grades are continually kept up-to-date automatically in Canvas. The student should notify the instructor as soon as possible if a discrepancy in assignment scores is discovered.

Attendance Policy

Logging into an online class is not sufficient, by itself, to demonstrate academic attendance by the student. Participation is indicated by activity in Canvas, which automatically tracks the time spent on each assignment and test. Attendance can also be demonstrated by engagement in an academically related activity, such as participation in discussion forums or initiating contact with the instructor to ask a course-related question.

A student who has only logged into the online class but has not demonstrated any engagement toward course outcome-specific assignments, or course-content specific discussion participation, will be identified as Never Attended on the official attendance roster. A student who has not completed any assignments for any continuous one-week period without contacting the instructor is subject to termination from the course with a grade of AF. All course work must be completed by **Thursday, December 14, 2023**.

Late Assignment Policy

Due dates for all assignments are listed in Canvas under **Course Summary** on the **Syllabus** page. Work submitted by 11:59 p.m. Eastern Time (EST) on the due date is considered on time. Late work will not be accepted for credit.

At the start of the semester, each student is given five Late Passes which may be redeemed on any homework assignment (at most one Late Pass is permitted per assignment). A Late Pass may be redeemed any time within 48 hours past the original due date to gain access to the assignment without the need to contact the instructor. A late penalty of 30% is imposed on problems completed during the 48-hour extension period. Once the 48-hour extension date is passed, a Late Pass may not be used, and the assignment receives a score of 0.

An extension on a test due date may be granted at the discretion of the instructor and will be considered only in cases in which:

- The student asks at least 12 hours before the test due date. **NOTE:** Late Passes are not permitted to extend test due dates.

- The student can present written documentation supporting the need for the extension (for example, hospitalization, physician's orders, court appearance, etc.) If the student is granted an extension on a test, a 10% late penalty will be applied. A student who does not meet the extended deadline arranged with the instructor will receive a score of 0 with no further opportunity to make up the test.

Academic Affairs Notices

Students are responsible for reading the Academic Affairs Notices. These are the same for each course at NHTI and are updated each semester.

A link to the Academic Affairs Notices is posted in the **Syllabus** module in the Canvas course.