Course Number: MATH 251C-ES Statistics/Early College Online	
Hours: 100% Online, Credits - 4.0	
Prerequisite(s): High school Algebra II or the equivalent	
Term: Spring 2025 (1/21/2025 – 5/10/2025)	
Faculty: Valerie LaVoice, MBA	
Faculty Accessibility: Office Hours on Mon & Wed from 2:00 - 2:50 PM in L203 or by Zoom	
E-mail: vlavoice@ccsnh.edu	

Syllabus Table of Contents

Course Description

Topics include basic measurements of central tendency and variability, frequency distributions, probability; binomial, Poisson, Chi-square, Student *t*, and normal distributions; sampling distributions, estimation of parameters, hypothesis testing, correlation, and linear regression. (Prerequisites: high school Algebra II or the equivalent)

Learning Outcomes

[Educated Person Statement of Philosophy](#)

Upon completion of this course, the student will be able to:

- Identify types of data and sampling methods.
- Identify, create, and interpret common statistical graphs.
- Calculate basic descriptive statistics (central tendency, variation, and position).
- Apply basic probability concepts (addition rule, multiplication rule, complement).
- Identify and solve problems involving discrete probability distributions.
- Identify and solve problems involving continuous probability distributions.
- Apply the Central Limit Theorem to problems involving sampling distributions.
- Calculate a confidence interval estimate of population mean, proportion, or standard deviation.
- Test a claim concerning a population mean, proportion, or standard deviation.
- Calculate and interpret the linear correlation coefficient.
- Produce a linear regression model to solve an application problem.

Course Materials and Resources

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

MyLab Statistics Activation Code

MyLab Statistics with Pearson eText Access Card -- for Elementary Statistics (18-Weeks)
This activation code is **<u>required</u>** to access the online eText, *Elementary Statistics*, and all homework assignments and tests. This option is best for students who do <u>not</u> want a printed textbook.

MyLab Statistics with Pearson eText Combo Access Card -- for Elementary Statistics (18 weeks)
This option includes the activation code to access all MyLab resources and assignments and a loose-leaf textbook that gets mailed directly to the student's home after the student registers with Pearson.

Technology

Access to **StatCrunch**, a powerful data graphing and analysis tool, is included with the activation code; no additional calculator is required except for basic arithmetic operations. StatCrunch Video Tutorials are provided under **Learning Tools** in MyLab.

Links to several excellent **web-based statistical calculators** are also provided in Canvas.

Canvas Orientation

If you are unfamiliar with Canvas, please complete the Canvas student orientation to familiarize yourself with its navigation and use.

If you need help navigating this course, the Student Guide, Chat, and Phone offer helpful information and are always accessible by clicking on the help button in Canvas.

Instructional Approach

The instructor has organized this course into a series of modules containing the following pages:

- **Overview and learning objectives** related to the course content under study.
- **Reading assignment and resources** (videos, handouts, web sites, etc.) to enhance the material presented in the textbook.
- **PowerPoint lectures**, prepared by the instructor, to illustrate use of StatCrunch or web-based technologies whenever applicable.
- *MyLab* homework assignment and test (when appropriate)

The Canvas course also includes a **Discussions** forum where students are invited to ask, and answer, questions related to the content under study or any other aspect of the course.

Homework problems are accompanied by one or more of the following MyLab learning aids:

- Help Me Solve This
- View an Example
- Video
- Animation
- Textbook
- StatCrunch
- Ask My Instructor
- Instructor Tip

If more clarification is needed, the student is encouraged to use any or all resources available, including:

- Posting in the online Discussion available in Canvas
- Using the **Ask my instructor** feature on the **Get more help** menu in MyLab
- Requesting an appointment with the instructor via Zoom
- Meeting with a tutor through the **24/7 Tutoring** service linked in Canvas

Students are strongly advised to keep a notebook containing solutions to homework problems for use as a reference while taking tests. Students should plan to spend a minimum of 12 hours per week on coursework.

After satisfactorily completing the homework assignments, the student should be adequately prepared to take the corresponding test. The instructor reviews work submitted with the test and gives detailed feedback on incorrect solutions. This feedback explains how the correct answer could have been obtained, with a focus on using technology (StatCrunch or 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

No assignments other than those described in this section will be offered.

- **Homework**

  All homework assignments are to be completed on or before the due date specified Canvas in the **Course Summary** at the bottom of the **Syllabus** page. No limits are placed on the number of attempts to answer each question. A late penalty is applied on questions answered after the due date (see Late Assignment Policy on page 7 for more information).

  Homework problems are accompanied by one or more learning aids (see list under **Instructional Approach** on page 3), when available. Questions on specific homework problems may be forwarded to the instructor through the *Ask my instructor* link under **Get more help** in the homework window.

- **Tests and Final Exam**

  The student's mastery of the course material is assessed by four tests and a final exam, to be submitted by midnight on the due date indicated in Canvas. The tests and final exam are timed and are available for a two-day period. **NOTE:** Requests to open a test or the final exam ahead of the original availability date will <u>not</u> be honored except in cases of extenuating circumstances that the student is able to support with appropriate documentation.

  The problems on the tests and final exam are taken from the homework assignments; therefore, the best way to prepare for tests is to complete the homework assignments.

  To potentially earn additional partial credit for incorrect answers, the student <u>*must show work on incorrect problems*</u> after submitting the test or final exam. A non-credit (optional) assignment in Canvas is provided as a location for uploading photos of work. This work must be legible, organized, and <u>show how the submitted answer was obtained</u>. In other words, this is not intended as an opportunity to correct errors. StatCrunch screen captures are accepted as work. <u>Please be sure that the question to which the work applies is clearly identified</u>.

  NOTE

  - The instructor will not provide the solution to a test question marked incorrect unless the student submits work showing a reasonable attempt to solve the problem.

  - When the student uses a StatCrunch tool to solve a problem, work will consist of the name of the tool and the input typed into the prompts. Screen captures of the tools (StatCrunch or TI-84 or other web-based technology, such as *desmos*) are permissible.

  - A question marked incorrect 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).

Grading Criteria and Grade Calculation

Category	% of Final Course Grade
MyLab Homework	30%
MyLab Tests	50%
MyLab 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

A detailed listing of homework assignments and due dates is available in the **Course Summary** at the bottom of the **Syllabus** page in the Canvas course.

UNIT	Module	Sections	Reading and Homework	Due
1	1	1-1 – 1-3	Statistical and Critical Thinking; Data Types; Collecting Sample Data 1-1 – 1-3 Homework	1/27
	2	2-1 – 2-3	Frequency Distributions; Histograms; Graphs that Deceive 2-1 – 2-3 Homework	2/3
	3	3-1 – 3-3	Measures of Center, Variation, and Relative Standing 3-1 – 3-3 Homework **TEST 1: Chapters 1, 2, and 3 (due 2/10)**	2/10
2	4	4-1 – 4-2	Basic Concepts of Probability; Addition Rule and Multiplication Rule 4-1 – 4-2 Homework	2/17
	5	4-3 – 4-4	Complements, Conditional Probability, and Bayes' Rule; Counting 4-3 – 4-4 Homework	2/24
	6	5-1 – 5-2	Probability Distributions; Binomial Probability Distributions 5-1 – 5-2 Homework	3/3
	7	5-3	Poisson Probability Distributions 5.3 Homework **TEST 2: Chapters 4 and 5 (due 3/10)**	3/10
			SPRING BREAK (3/17 – 3/23) – NHTI Closed	
3	8	6-1 – 6-2	Normal Distribution and Applications 6-1 – 6-2 Homework	3/24
	9	6-3 – 6-4	Sampling Distributions; Central Limit Theorem 6-3 – 6-4 Homework	3/31
	10	7-1 – 7-3	Estimating Parameters 7-1 – 7-3 Homework **TEST 3: Chapter 6 and 7 (due 4/7)**	4/7
4	11	8-1 – 8-2	Basics of Hypothesis Testing; Testing Claims About Proportions 8-1 – 8-2 Homework	4/21
	12	8-3 – 8-4	Testing Claims About Means and Standard Deviations 8-3 – 8-4 Homework	4/28
	13	10-1 – 10-2	Correlation; Regression 10-1 – 10-2 Homework **TEST 4: Chapters 8 and 10 (due 5/5)**	5/5
	14		Final Exam Review	
	15		**FINAL EXAM (due 5/9)**	**5/9**

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Course Notices

MyLab Statistics Enrollment Requirement

The homework assignments, unit tests, and final exam in this course are to be completed in Canvas after enrolling in *MyLab Statistics*. To enroll, follow the instructions in the **Start Here** module in Canvas. A free, two-week trial period is available so that students waiting for financial aid can enroll without delaying participation in the course.

Students are expected to enroll in *MyLab Statistics* via the NHTI Canvas course with permanent access by no later than **February 3, 2025** (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.

Faculty E-mail Response Time

You can expect a response within 12 hours of sending an e-mail.

Posting of Grades

Grades on homework assignments and tests are continually kept up-to-date automatically and will be regularly imported into Canvas and viewable on the **Grades** page. Any discrepancy should be reported to the instructor as soon as possible.

Course Drop Deadline

The deadline for withdrawing from this course with a grade of W (which has no impact on the student's GPA) is **March 31, 2025**. Students must contact the [NHTI Registrar](#) to withdraw. Please see [Academic Affairs Notices](#) for more information.

Attendance Policy

Logging into an online class is not sufficient, by itself, to demonstrate academic attendance by the student. Participation is indicated by the student's activity in the *MyLab* web site, 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 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 (including the final exam) must be completed by **Saturday, May 10, 2025**.

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.

Students are automatically permitted an extension on a homework due date. A late penalty of 20% is imposed on only those problems not completed by the due date.

Students are automatically allowed a one-day extension on a test due date, however, a 10% late penalty will be applied to the overall score. Extensions beyond the one-day automatic extension

may be granted at the discretion of the instructor if the student asks <u>at least 12 hours before the test due date and has scored at least 50% on all related homework assignments</u>. The instructor may require evidence (for example, a doctor's note or court summons) to support the need for an extension. <u>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</u>.

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Recommended Sequence for Study

The following is a recommended sequence for study to properly prepare for tests:

1) Start with the **Canvas module** to see the learning objectives for the module.

2) View the **PowerPoint Lectures** provided by your instructor. These lectures give an overview of the key concepts from the textbook and include examples showing how to use technology to solve application problems like those you will encounter on homework and tests.

3) Complete the **reading assignment** given on the *Reading and Resources* page. The online textbook provides example videos and solutions to example problems to help you assess your learning as you go.

4) After viewing the learning aids listed above, complete the ***MyLab Statistics* homework** in Canvas. Links to these assignments are found in each module and at the bottom of the **Syllabus** page in Canvas. *Keep a notebook containing a copy of each homework problem and your worked-out solution to use as a reference while taking tests*.

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Where to Get Help

Here are some suggested things to try if you get stuck:

- Watch the **videos** provided in the textbook and on the *Reading and Resources* page to gain insights into statistical concepts and to learn how to solve sample problems.

- Click the **Ask my instructor** link on the **Get more help** menu in the homework window. An e-mail containing a copy of the problem and your question will be sent to your instructor who will then clarify or elaborate upon the problem via an e-mail response. Technology tips will be included whenever appropriate.

- Visit your instructor during **office hours** (Mon/Wed 2-4 PM in L203) or request a **Zoom session** with the instructor. Be sure to suggest convenient days and times for the meeting.

- Use **24/7 Tutoring** to connect with a tutor. A link to this service is provided in the Canvas navigation panel.

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Academic Affairs Notices

Students are responsible for reading the Academic Affairs Notices, which are posted in Canvas in the **Start Here** module. These are the same for each course at NHTI and are updated each semester.

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