MTH 160X: BASIC STATISTICS

History

1. Dec 4, 2025 by Sera Bird (sabird)

Viewing: MTH 160X : Basic Statistics
Last approved: 2025-12-04T08:03:55Z
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Effective Term
Winter 2026

Rationale and proposal summary
Per Anne Nichols, the prerequisite of ENG 111 and ENG111S should be updated to include "ENG 111 or ENG 111X." I am also updating language in the course description to be clear that all exams in the course are fully proctored. And, thirdly, the edition of the text needs updating as well.

Course Cover

Full Course Title
Basic Statistics

Transcript Title
Basic Statistics

Subject Code
MTH - Mathematics

Course Number
160X

Department
Mathematics Dept (MTHD)

Banner Division
MSE

Division/College
Math-Science-Engineering Tech (MS)

Org Code
12200

Course Description
In this course, students will use elementary statistics to achieve statistical literacy. Emphasis is on interpretation and evaluation of statistical results. Broad topics include descriptive statistics, linear regression, basic probability theory and inferential statistics. Specific topics include describing data sets graphically and numerically, measures of center and spread, bivariate data and least squares regression, correlation, random variables, basic probability distributions, confidence intervals and hypothesis tests. All exams in this course are proctored, and a graphing calculator is required (see the time schedule for current brand and model). This course includes additional instructor contact hours and is open to Math Level 1 and Math Level 2 students only.

Planned Delivery Format
Face to Face
Online

Has this course been approved for online or online blended?
Yes

Grading method
Standard Letter, Audit, Academic Forgiveness

Occupational Indicator
No

ACS Code
110

Degree Attributes
BCL - Below College Level Pre-Reqs

Credit hours, contact hours, repeatability

Repeatable for additional credit
No

Course credits
4

Lecture contact hours
75

Total Contact Hours
75

Expected Total Contact Hours
75

Prerequisites and prerequisite skill levels

College-Level Math
Other

College-Level Reading and Writing
Reduced Reading / Writing Scores

Approved Level I Prerequisite:
Academic Reading Level 3 and concurrently enrolled in ENG 111 or ENG 111X; or Academic Reading Level 5; Only open to students with Academic Math Level 1 or 2.

Is concurrent enrollment an option for this prerequisite?
Yes

Which courses?
ENG 111X

Course Assessment Plan
Learning Outcome

Outcome
Identify common statistical terminology, and represent qualitative and quantitative data in tables and graphs.

Assessment #1

Assessment Tool
Outcome-related common final exam questions

Anticipated Next Assessment Year
2027

Anticipated Next Assessment Term
Winter

Assessment Cycle
Every Two Years

Anticipated assessment population
Other

If not including all students from all sections, please provide an estimation of how many students will be included (percentage and estimated number), and how you're planning to ensure representation for all schedule types, delivery methods, full-time and part-time students, all instructors, etc.

All sections; 10-20% representative random sample of students from all sections of the course

How the assessment will be scored

The selected set of common questions for this outcome from the paper and online versions of the approved department final exam will be matched and scored with a rubric.

Who does the scoring?

Course mentor (coordinator)/department faculty

Standard of success

75% of students will score at least 70% on the selected set of questions assessed for this outcome.

Assessment #2

Learning Outcome

Outcome

Interpret, plan, produce and apply descriptive statistics, including common quantitative measures for univariate data and common quantitative measures related to linear regression analysis of bivariate data.

Assessment #1

Assessment Tool

Outcome-related common final exam questions

Anticipated Next Assessment Year

2027

Anticipated Next Assessment Term

Winter

Assessment Cycle

Every Two Years

Anticipated assessment population

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Who does the scoring?

Course mentor (coordinator)/department faculty

Standard of success

75% of students will score at least 70% on the selected set of questions assessed for this outcome.

Assessment #2

Learning Outcome

Outcome
Interpret and apply probability, discrete probability distributions and common continuous probability distributions.

Assessment #1

Assessment Tool
Outcome-related common final exam questions

Anticipated Next Assessment Year
2027

Anticipated Next Assessment Term
Winter

Assessment Cycle
Every Two Years

Anticipated assessment population
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Who does the scoring?
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Standard of success
75% of students will score at least 70% on the selected set of questions assessed for this outcome.

Assessment #2

Learning Outcome

Outcome
Interpret, plan, produce and apply inferential statistics.

Assessment #1

Assessment Tool
Outcome-related common final exam questions

Anticipated Next Assessment Year
2027

Anticipated Next Assessment Term
Winter

Assessment Cycle
Every Two Years

Anticipated assessment population
Other

If not including all students from all sections, please provide an estimation of how many students will be included (percentage and estimated number), and how you're planning to ensure representation for all schedule types, delivery methods, full-time and part-time students, all instructors, etc.

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Course mentor (coordinator)/department faculty

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Assessment #2

Course Objectives

	Objective(s)
1.	Use standard statistics terminology to describe the output of technology, or written narrative, of inferential statistics.
2.	Classify sampling methods, variables and types of data.
3.	Recognize and critique varied descriptive statistical summaries such as tables, graphs and numerical measures.
4.	Tabulate data, and prepare varied statistical summaries such as tables, graphs and numerical measures.
5.	Construct and interpret a scatterplot for two variables.
6.	Calculate and interpret the correlation coefficient for two variables.
7.	Calculate and interpret the equation of the least squares regression line, and use it to predict values of the response variable from values of the explanatory variable.
8.	Calculate and interpret basic probabilities via the fundamental probability principle, the addition rule, the rule of complements, conditional probability rules, and the multiplication rule.
9.	Produce discrete probability distributions corresponding to empirical data or discrete random variables.
10.	Interpret discrete probability distributions, and calculate the corresponding means and standard deviations.
11.	Interpret and apply normal probability distributions from normal populations, distributions of sample means, and distributions of sample proportions.
12.	Explore the Central Limit Theorem and summarize attributes of sampling distributions while recognizing their connection to the normal distribution.
13.	Interpret, construct and apply confidence intervals and calculate sample sizes necessary, given a margin of error and confidence level.
14.	Interpret and develop statistical hypotheses for one and two populations.
15.	Make statistical tests of hypotheses about means and proportions for one and two populations using z and t distributions.
16.	Interpret and make inferences based upon hypothesis tests using appropriate statistics terminology.
17.	Translate results of inferential statistics into everyday language.

General Education Area(s)

Area 1: Writing

No

Area 2: 2nd Writing or Communication/Speech

No

Area 3: Mathematics

Yes

Area 3 Mathematics Applicability

Area 3: Mathematics (AA)
Area 3: Mathematics (AAS)
Area 3: Mathematics (AS)

Area 4: Natural Science

No

Area 5: Social and Behavioral Science

No

Area 6: Arts and Humanities

No

MTA General Education

Yes

MTA Applicability

MTA Mathematics

Review

Is conditional approval requested?

No

Is this course currently conditionally approved, and you are now submitting it for full approval?

Yes

Key: 7446

Washtenaw Community College Comprehensive Report

MTH 160X Basic Statistics
Conditional Approval
Effective Term: Winter 2025

Course Cover
College: Math, Science and Engineering Tech
Division: Math, Science and Engineering Tech
Department: Math & Engineering Studies
Discipline: Mathematics
Course Number: 160X
Org Number: 12200
Full Course Title: Basic Statistics
Transcript Title: Basic Statistics
Is Consultation with other department(s) required: No
Publish in the Following:
Reason for Submission:
Change Information:
Rationale: As developmental education courses are reduced and eliminated at WCC, we are aiming to create college-level courses at WCC that serve level 1 and level 2 students.
Proposed Start Semester: Winter 2025
Course Description: In this course, students will use elementary statistics to achieve statistical literacy. Emphasis is on interpretation and evaluation of statistical results. Broad topics include descriptive statistics, linear regression, basic probability theory and inferential statistics. Specific topics include describing data sets graphically and numerically, measures of center and spread, bivariate data and least squares regression, correlation, random variables, basic probability distributions, confidence intervals and hypothesis tests. A graphing calculator is required for this course. See the time schedule for current brand and model. This course includes additional instructor contact hours and is open to Math Level 1 and Math Level 2 students only.

Course Credit Hours
Variable hours: No
Credits: 4
Lecture Hours: Instructor: 75 **Student:** 75
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 75 **Student:** 75
Repeatable for Credit: NO
Grading Methods: Letter Grades
Audit
Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing
Reduced Reading/Writing Scores

College-Level Math
No Level Required

Requisites
Enrollment Restrictions
Academic Reading Level 3 and concurrently enrolled in ENG 111 and ENG 111S; or Academic Reading Level 5. Open to Math Level 1 and Math Level 2 students only.

General Education

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Identify common statistical terminology, and represent qualitative and quantitative data in tables and graphs.
   ### Assessment 1
   Assessment Tool: Outcome-related common final exam questions
   Assessment Date: Spring/Summer 2025
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All
   Number students to be assessed: 10-20% representative random sample of students from all sections of the course
   How the assessment will be scored: The selected set of common questions for this outcome from the paper departmental final exam will be scored with a rubric
   Standard of success to be used for this assessment: 75% of students will score at least 70% on the selected set of questions assessed for this outcome
   Who will score and analyze the data: Course mentor (coordinator)/department faculty

2. Interpret, plan, produce and apply descriptive statistics, including common quantitative measures for univariate data and common quantitative measures related to linear regression analysis of bivariate data.
   ### Assessment 1
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3. Interpret and apply probability, discrete probability distributions and common continuous probability distributions.
   ### Assessment 1
   Assessment Tool: Outcome-related common final exam questions
   Assessment Date: Spring/Summer 2025
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All
   Number students to be assessed: 10-20% representative random sample of students from all sections of the course
   How the assessment will be scored: The selected set of common questions for this outcome from the paper departmental final exam will be scored with a rubric

Standard of success to be used for this assessment: 75% of students will score at least 70% on the selected set of questions assessed for this outcome
Who will score and analyze the data: Course mentor (coordinator)/department faculty

4. Interpret, plan, produce and apply inferential statistics.
   Assessment 1
   Assessment Tool: Outcome-related common final exam questions
   Assessment Date: Spring/Summer 2025
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All
   Number students to be assessed: 10-20% representative random sample of students from all sections of the course
   How the assessment will be scored: The selected set of common questions for this outcome from the paper departmental final exam will be scored with a rubric
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16. Interpret and make inferences based upon hypothesis tests using appropriate statistics terminology.
17. Translate results of inferential statistics into everyday language.

New Resources for Course

Course Textbooks/Resources

Textbooks
Navidi, W. and Monk B. *Elementary Statistics (Digital edition with ebook and ALEKS 360 Access)*, 4th ed. McGraw Hill, 2022
Manuals
Periodicals

Software

Equipment/Facilities

Level III classroom
Other: calculator emulator software (such as TI-84 Plus SmartView and/or statistics software as specified by math department)

Reviewer	**Action**	**Date**
Faculty Preparer:		
Robert Klemmer	*Faculty Preparer*	*Sep 27, 2024*
Department Chair/Area Director:		
Nichole Klemmer	*Recommend Approval*	*Sep 27, 2024*
Dean:		
Tracy Schwab	*Request Conditional Approval*	*Sep 27, 2024*
Curriculum Committee Chair:		
Assessment Committee Chair:		
Vice President for Instruction:		
Brandon Tucker	*Conditional Approval*	*Sep 27, 2024*