MATH 156: INTRODUCTION TO STATISTICS

History

1. Jul 19, 2021 by O'Connor Susan (soconnor)

Viewing: MATH 156 : Introduction to Statistics
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1. Course Information

Subject
MATH - Mathematics

Course Number
156

School
Science, Technology, Engineering, Mathematics

Course Title
Introduction to Statistics

2. Hours

Semester Hours
3.00000

Lecture
3

Lab
0

Practicum
0

3. Catalog Description

For display in the online catalog
An introductory level course for non-mathematics majors who need or desire a working knowledge of statistics. This course is oriented towards all fields in which statistics finds applications. Topics include: summarizing data, probability, normal and binomial distributions, hypothesis testing, confidence intervals and correlation.

4. Requisites

Prerequisites
MATH 023 with a grade of C or higher, ENGL 098 with a grade C or higher

Corequisites
None

5. Course Type

Course Fee Code
2

Course Type for Perkins Reporting
non-vocational (not approved for Perkins funding)

6. Justification

Describe the need for this course

Describe the need for this course.

This course is designed to provide students with the mathematical knowledge

needed to successfully integrate statistics into their chosen area of study or career path statistical concepts that allow successful implementations of data handling in different areas of study or career paths.

7. General Education

Will the college submit this course to the statewide General Education Coordinating Committee for approval as a course, which satisfies a general education requirement?

Yes

General Education Category

Mathematics

General Education Status

Approved

8. Consistency with the Vision and Mission Statements, the Academic Master Plan, and the strategic initiatives of the College

Please describe how this course is consistent with Ocean County College's current Vision Statement, Mission Statement, Academic Master Plan, and the strategic initiatives of the College:

	Add item
1	This course helps to prepare students to become intentional learners who will be able to understand and employ quantitative analysis to solve problems, and demonstrate intellectual agility in mathematics.

9. Related Courses at Other Institutions

Comparable Courses at NJ Community Colleges

Institution

Brookdale CC

Course Title

Statistics

Course Number

MATH 131

Number of Credits

3

Institution

Mercer County CC

Course Title

Elementary Statistics I

Course Number

MAT 125

Number of Credits

3

Transferability of Course

Georgian Court University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 103, Making Sense of Data, STAT Thinking, 3	GE	

Kean University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MATH 1016, Statistics, 3	GE	

Monmouth University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
MA 151, Statistics with Applications, 3	GE	

Rowan University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
STAT 02260, Statistics I, 3	GE	

Rutgers - New Brunswick, Mason Gross School of the Arts

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
01960211, Statistics I, 3	GE	

Stockton University

Course Code, Title, and Credits	Transfer Catagory	If non-transferable; select status
CSIS 1206, Statistics, 3	GE	

10. Course Learning Outcomes

Learning Outcomes

	Students who successfully complete this course will be able to:
CLO1	Develop the student's use of basic statistical tools needed to summarize and analyze data from real problems.
CLO2	Develop the student's awareness of the use of statistics in experimental procedures and decision making.
CLO3	Recognize sampling methods and levels of data.
CLO4	Explain statistical terms.
CLO5	Interpret descriptive statistics.
CLO6	Illustrate statistical information using appropriate graphs.
CLO7	Apply appropriate probability formulas.
CLO8	Compare different probability distributions.
CLO9	Construct confidence intervals.
CLO10	Perform appropriate hypothesis tests.
CLO11	Apply correlation and regression analysis to bi-variable data.

11. Topical Outline

(include as many themes/skills as needed)

	Major Themes/ Skills	Assignments (Recommended but not limited to)	Assessments (Recommended but not limited to)	Course Learning Outcome(s)
TO1	Summarize and analyze data from real problems Descriptive statistics; sampling theory; sampling techniques	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO 1

TO2	Use statistics in experimental procedures & decision making Descriptive statistics; experimental procedures	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO 2
TO3	Use sampling methods and levels of data Frequency distributions; descriptive statistics	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO3
TO4	Statistical terms Accurately explain and use statistical terms.	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO4
TO5	Descriptive statistics Calculate and interpret descriptive statistics	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO8
TO6	Graphing data Frequency distributions; probability distributions; binomial distributions	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO6
TO7	Probability Probability techniques	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO7
TO8	Probability distributions Applications of probability distributions	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO8
TO9	Confidence intervals Construct confidence intervals	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO9
TO10	Hypothesis testing Hypothesis testing methods	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO10
TO11	Correlation and regression Correlation and regression analysis	Homework problems; writing assignments; Excel data analysis and/or one major statistical software package	Quiz; Test; Data Based Project	CLO11

12. Methods of Instruction

In the structuring of this course, what major methods of instruction will be utilized?

o Lecture
o Group activities
o Data sets

13. General Education Goals Addressed by this Course (this section is to fulfill state requirements)

Information

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Quantitative Knowledge and Skills
Yes

Related Course Learning Outcome
CLO2,3,5,6,7,8,9,10,11

Related Outline Component
TO2,3,5,6,7,8,9,10,11

Assessment of General Education Goal (Recommended but not limited to)
Quiz, test, writing assignment, Project

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Technological Competency
Yes

Related Course Learning Outcome
CLO1, 6, 9, 10, 11

Related Outline Component
TO1, 6, 9, 10, 11

Assessment of General Education Goal (Recommended but not limited to)
Quiz, test, writing assignment, Project

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Ethical Reasoning and Action
Yes

Related Course Learning Outcome
CLO1,3,5,6,7,8,9,10,11

Related Outline Component
TO1,3,5,6,7,8,9,10,11

Assessment of General Education Goal (Recommended but not limited to)
Quiz, test, writing assignment, Project

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Independent/Critical Thinking
Yes

Related Course Learning Outcome
CLO1,3,4,5,6,7,8,9,10,11

Related Outline Component
TO1,3,4,5,6,7,8,9,10,11

Assessment of General Education Goal (Recommended but not limited to)
Quiz, test, writing assignment, Project

14. Needs

Instructional Materials (text etc.):
Contact the department for current adoptions, Cassette tapes, and Workbook

Technology Needs:
Calculator, Computer software: Excel, CD tutorial, Stat-Pro

Human Resource Needs (Presently Employed vs. New Faculty):
Presently Employed

Facility Needs:
None

Library needs:
None

15. Grade Determinants

The final grade in the course will be the cumulative grade based on the following letter grades or their numerical equivalents for the course assignments and examinations

A: Excellent

B+: Very Good

B: Good

C+: Above Average

C: Average

D: Below Average

F: Failure

I: Incomplete

R: Audit

For more detailed information on the Ocean County College grading system, please see Policy #5154.

16. Board Approval

History of Board approval dates
Reviewed/Revised: December 1990; February 27, 1996; April 30, 1996; December 1998;
May 4, 2004; December 2004; July 2005; February 28, 2006; March 8, 2006; June 2006.
Board of Trustees Approval Date: November 6, 2006
Board of Trustees Approval Date: March 26, 2012
Board of Trustees Approval Date: March 26, 2012
Board of Trustees Approval Date: November 03, 2016

Key: 1685