# Community College of Philadelphia
# Statistics for Science - Math 251
# Section # 902; CRN #14863
# Spring 2015

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**Instructor:** Dr. Jane Grosset
**Contact Information:** CANVAS e-mail or jgrosset@ccp.edu
**Office Hours:** By appointment

**COURSE DESCRIPTION:** Algebra-based statistics for science. Statistical topics include descriptive measures, graphical methods, discrete and continuous probability distributions, estimation, one- and two-tailed hypothesis testing and categorical data. Prerequisite: MATH 118 with a grade of "C" or better or MATH 161 (or higher) placement.

**COURSE COMPETENCIES:**

- Students will be able to graph a set of one-variable data and identify symmetry, skewness, number of clusters and outliers.
- Students will be able to construct a two-variable scatter diagram and describe the linear relationship between the two variables based on the scatter diagram.
- Students will be able to compute and interpret uni-variate and bi-variate descriptive statistics including measures of location and variability, correlation and regression coefficients.
- Students will demonstrate an understanding of the process of hypothesis testing and appropriate inferential statistical applications including proportions, means and variances.
- Students will be able to use probability rules, counting rules, and formulas to compute probabilities and manipulate statistical formulas to derive other statistical formulas.
- Students will demonstrate the ability to write accurate analyses of research problems and to analyze and present data.
- Students will demonstrate a basic understanding of the use of spreadsheets for analyzing small information sets using the 'Data Analysis' and 'Chart Wizard/Insert' features in Excel. Interpretation of Excel output related to these options will also be developed.

- Students will learn how to use descriptive and inferential statistical procedures as tools to help make informed decisions.

**INSTRUCTIONAL RESOURCES:**

This course is taught online. Primary instructional resources for the course include the following textbook, Excel software, and links to websites. The required text is:

Heiman, Gary W. *Basic Statistics for the Behavioral Sciences*, 4/e or 5/e or 6/e or 7/e.: New York. Houghton Mifflin Company. It can be purchased at the following site.

http://www.cengage.com/search/productOverview.do?N=16&Ntk=P_EPI&Ntt=510131949518250550125926630453950192 8

**DETERMINATION OF GRADE:**

A final grade for this course will be based on the following:

- Completion of three high-quality statistical research papers that appear as Assignments in CANVAS Modules. Completion of all three papers is a course requirement; not an option.
- Successful and timely completion of the weekly assignments/activities outlined for the course in Assignments and Forum Discussions in CANVAS Modules.

These will be weighed as follows:

- Paper 1 – 35%
- Paper 2 – 25%
- Final Paper – 25%
- Assignments – 15%

Detailed description of papers and assignments and due dates are available in the Modules of the Course Website. Assignments are due the week of the session in which they appear and papers are due during the designated session. No late assignments will be accepted for any course requirement without prior approval of the instructor. Those without prior approval will be given a grade of 0.

## Academic Standards:

Academic Dishonesty, which includes plagiarism and cheating, is a serious offense which will result in grade reduction or failure. The following are examples of plagiarism and cheating:

- Dependence upon the aid or sources beyond those authorized by the instructor in writing papers, in preparing reports, in solving problems, or in carrying out other assignments;

- The acquisition, without permission, of tests or other academic material belonging to a member of the College faculty or staff.
- Paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgement.
- Collaborating with classmates or others on assignments when the instructions explain that individual work is expected.
- Deceiving the instructor to get more time on an assignment or paper.
- Unacknowledged use of materials prepared by another person or agency engaged in the selling or sharing of term papers or other academic materials.

## Disability Statement:

In order to receive testing accommodations, students with disabilities must be registered with the Center on Disability, and must provide their instructors with accommodation forms that have been prepared by a counselor in the Center.