

1 Warning

Community College of Philadelphia is a firm adherent to the principle of academic freedom. In light of this, faculty are not required to follow a particular approach or a particular textbook for the courses they teach. Most faculty, however, have more or less uniform guidelines for specific courses, and indeed, many use a particular textbook or approach in order to conform to area institutions. Therefore, the sample syllabus found here is not binding to faculty, but represents a synthesis of what most faculty do or aspire to do when they teach a particular course. What follows should not be interpreted as a prescription, but rather, as a means to help the placement of our students in transfer institutions.

2 Catalogue Description

Cartesian coordinates, linear equations in two variables, graphing lines, systems of linear equations and inequalities, Gauss-Jordan elimination, matrices, matrix addition and multiplication, matrix inversion, geometric solution of linear programming problems, the Simplex method, duality. Prerequisite: MATH 118 with a grade of C or better or MATH 161 or higher placement.

3 Allotted Time

Math 151 is a 3-credit course. Courses at Community College of Philadelphia run for about **42 55**-minute periods. Instructors usually give three or four exams (generally lasting at least **55** minutes), and a 2-hour long final exam.

4 Topics Outline

- Graphs. Equations of Lines. Linear Models.
- Linear Inequalities.
- Quadratic Graphs. Quadratic Models. Quadratic Inequalities.
- Polynomial and Rational Inequalities.
- Systems of Linear Equations.
- The Gauss-Jordan Method.
- Matrices and Matrix Operations.
- Applications of Matrices.
- Graphing Linear Inequalities in Two Variables.
- Linear Programming: The Graphical Method.
- Applications of Linear Programming. The Simplex Method: Maximisation.

- The Simplex Method: Duality and Maximisation. Nonstandard Problems.