

_____SOUTH SEATTLE COMMUNITY COLLEGE_____

Academic Programs

COURSE OUTLINE

Revision: O. Shatunova and R. Downs, April 2008

DEPARTMENT: Academic Programs

CURRICULUM: Mathematics

COURSE TITLE: Pre Calculus I

COURSE NUMBER: MATH& 141

TYPE OF COURSE: Academic Transfer
Special Requirement Met: QSR

AREA(S) OF KNOWLEDGE: The Natural World: Science, Technology, and the Environment/ The Language of Science; Basic Requirement: Math

COURSE LENGTH: 1 quarter

CREDIT HOURS: 5

LECTURE HOURS: 55

LAB HOURS: 0

CLASS SIZE: 35 (25 when online)

PREREQUISITES: MATH 098 with a 3.5 or Math 102 or better or appropriate placement score.

COURSE DESCRIPTION:

Introduction to functions, equations and their graphs: polynomial, rational, exponential and logarithmic, and conic sections.

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STUDENT LEARNING OUTCOMES ADDRESSED:

1. Computation – Use arithmetic and other basic mathematical operations as required by program of study. Apply quantitative skills for personal, academic and career purposes.
2. Communication – Read and listen actively to learn and communicate.
3. Critical Thinking and Problem Solving – Think critically in evaluating information, solving problems and making decisions.
4. Technology – Select and use appropriate technological tools for personal, academic and career tasks.

GENERAL COURSE OBJECTIVES:

The first quarter of a two quarter sequence to prepare students for Calculus. Upon completion of this course the student will be expected to:

1. Determine, evaluate and graph functions
2. Understand the concept of a function
3. Recognize and graph polynomial functions and find zeros.
4. Recognize graphs of rational functions, including identifying asymptotes.
5. Understand and use exponential and logarithmic functions.
6. Solve systems of equations involving two and three variables.
7. Use course knowledge to solve a variety of applied problems.
8. To analyze and graph equations of a conic sections and use them in applied problems.
9. Understand the definitions, notation, and basic techniques for describing sequence and series.
10. Know when and how to use technology, such as graphing calculators, to accomplish the above objectives.

TOPICAL OUTLINE:

- I. Functions and their graphs
- II. Polynomial and rational functions
- III. Exponential and logarithmic functions
- IV. Analytic geometry – conic sections
- V. Systems of equations and inequalities

Additional topics to be determined from the following list by the math department.

1. Matrices and determinants
2. Sequences and series
3. Partial fractions

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TOPICAL OUTLINE CONTINUED:

4. Mathematical induction
5. Other related topics

APPROX HOURS: 55

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| SLO # | Included in Course Objective Number | SSCC Student Learning Outcomes |
|---------|-------------------------------------|---|
| SLO 1.1 | 1 – 10 | Communication - Read and listen actively |
| SLO 1.2 | | Communication - Speak and write effectively |
| SLO 2.1 | 1 – 10 | Computation - Use mathematical operations |
| SLO 2.2 | 1 – 10 | Computation - Apply quantitative skills |
| SLO 2.3 | 1 – 10 | Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills |
| SLO 3.1 | | Human Relations - Use social interactive skills to work in groups effectively |
| SLO 3.2 | | Human Relations - Recognize the diversity of cultural influences and values |
| SLO 4.1 | 1 – 10 | Critical Thinking and Problem Solving - |
| SLO 5.1 | 1 – 10 | Technology - Select and use appropriate technological tools |
| SLO 6.1 | | Personal Responsibility - Be motivated and able to continue learning and adapt to change |
| SLO 6.2 | | Personal Responsibility - Value one's own skills, abilities, ideas and art |
| SLO 6.3 | | Personal Responsibility - Take pride in one's work |
| SLO 6.4 | | Personal Responsibility - Manage personal health and safety |
| SLO 6.5 | | Personal Responsibility - Be aware of civic and environmental issues |
| SLO 7.1 | | Information Literacy - Access and evaluate information |
| SLO 7.2 | | Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society |

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