

_____ SOUTH SEATTLE COMMUNITY COLLEGE _____

Academic Programs

COURSE OUTLINE

Revision: Ryan Dorman, Olga Shatunova, Jian Zou, April 2008

DEPARTMENT: Academic Programs

CURRICULUM: Mathematics

COURSE TITLE: Linear Algebra

COURSE NUMBER: MATH 220

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

COURSE LENGTH: 1 quarter

CREDIT HOURS: 5

LECTURE HOURS: 55

LAB HOURS: 0

CLASS SIZE: 35

PREREQUISITES: MATH& 152 with a 2.0 or better or placement exam

COURSE DESCRIPTION:

Systems of linear equations, matrices, determinants, vector spaces, inner product spaces, eigenvalues, eigenvectors, similarity of matrices, and linear transformations.

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Computation- Identify, interpret and utilize higher level mathematical and cognitive skills (for those students who choose to move beyond the minimum requirements as stated above.)

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STUDENT LEARNING OUTCOMES ADDRESSED: (cont.)

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 technology tools for personal, academic and career tasks.
5. Personal Responsibility – Be motivated and able to continue learning and adapt to change. Value one's own skills, abilities, ideas and art. Take pride in one's work. Be aware of civic and environmental issues

GENERAL COURSE OBJECTIVES:

1. To help prepare students entering the engineering field
2. To tie in linear algebra with systems of equations

TOPICAL OUTLINE:

APPROX HOURS: 55

- I. Introduction to linear systems
- II. Solving large linear systems
- III. Vector spaces
- IV. Eigenvalues: Applications and computations
- V. Systems of first order linear equations
- VI. Linear transformations

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SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1	1, 2	Communication - Read and listen actively
SLO 1.2		Communication - Speak and write effectively
SLO 2.1	1, 2	Computation - Use mathematical operations
SLO 2.2	1, 2	Computation - Apply quantitative skills
SLO 2.3	1, 2	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, 2	Critical Thinking and Problem Solving -
SLO 5.1	1, 2	Technology - Select and use appropriate technological tools
SLO 6.1	1, 2	Personal Responsibility - Be motivated and able to continue learning and adapt to change
SLO 6.2	1, 2	Personal Responsibility - Value one's own skills, abilities, ideas and art
SLO 6.3	1, 2	Personal Responsibility - Take pride in one's work
SLO 6.4		Personal Responsibility - Manage personal health and safety
SLO 6.5	1, 2	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

PREPARED BY: R. Dorman, O. Shatunova, J. Zou
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