



Central  
North  
South  
SVI

## MATH224 - Vector Calculus

Document Type: Master Course Outline Supplemental

Proposal Type: Revision

Requester(s): Ted Coskey

College: South

Origination Approved: 06/11/2014 - 10:34 AM

### BASIC INFORMATION

**Requester(s):** Ted Coskey

**College:** South Seattle Community College

**Division/Dept:** Academic Programs

**Dean:** Laura Kingston

**Peer Reviewer(s):** Rick A Downs

### COLLEGE SUPPLEMENTAL

**Proposed Quarter of Implementation:** NA

Request Provisional Exception

The district stated that this class will be first offered Summer Quarter 2014 to make the fourth quarter of the calculus sequence comply with the Common Course Numbering System.

**Class Capacity:** 35

**Modes of Delivery:** (Check all that apply)

Fully On Campus

Fully Online

Hybrid

Other Explanation:

**Select the Special Designation(s) this course will satisfy, if applicable:**

(No Special Designations Selected)

**Class Schedule Description:**

Continuation of MATH& 163. Includes vector-valued functions, vector fields, line and surface integrals partial derivatives, and the theorems of Green, Gauss, and Stokes, vector operators and the extension of the calculus to the vectors in 2-D and 3-D space. Prereq: MATH& 163 with a 2.0 or higher or permission.

**Student Learning Outcomes:**

#### Computation

Use arithmetic and other basic mathematical operations as required by program of study

Apply quantitative skills for academic and career purposes

#### Critical Thinking and Problem-Solving

Think critically in evaluating information, solving problems, and making decisions

**Technology**

Select and use appropriate technological tools for academic and career tasks

**Program Outcomes:**

Included in Course Objective Number	SSCC Student Learning Outcomes	
SLO 1.1		Communication
SLO 1.2		Communication purposes.
SLO 2.1	1 - 8	Computation - U required by prog
SLO 2.2	1 - 8	Computation - A
SLO 3.1		Human Relations
SLO 3.2		Human Relations our multicultural
SLO 4.1	1 - 8	Critical Thinking and making deci
SLO 5.1	1 - 8	Technology - Sel and career tasks
SLO 6.1		Personal Respon and integrity.
SLO 6.2		Personal Respon online, and in all
SLO 6.3		Personal Respon time, and effecti work, and other
SLO 6.4		Personal Respon shops, and class
SLO 7.1		Information Liter from a variety of
SLO 7.2		Information Liter to the use of infc
SLO 7.3		Information Liter purpose.

**Course Outcomes / Objectives:**

A student who successfully completes this course should be able to:

1. Sketch quadric surfaces
2. Evaluate limits
3. Apply the chain rule for partial derivatives
4. Solve maxima and minima problems
5. Evaluate double and triple integrals in Euclidean, cylindrical and spherical coordinate systems
6. Evaluate line integrals.

7. Evaluate integrals using Green's theorem and Stoke's theorem
  8. Solve line and surface integrals
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**Explain the student demand for the course and potential enrollment:**

This course is offered two times a year at South.

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**Explain why this course is being revised:**

This is course revision is to update the outline to account for the change in the number of the third course in this sequence from Math& 153 to Math& 163.

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**What challenges, if any, do you foresee in offering this course:**

None.

**This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.**

Faculty involved in originating this program:

Ted Coskey  
Print Name

*Ted Coskey*  
Signature

5/14/2014  
Date

Dean:

Laura Kingston  
Print Name

*Laura Kingston*  
Signature

5/30/2014  
Date

**Results of SSCC Curriculum Coordinating Council Findings**

**Participating Faculty Response and Remarks**

- Recommended for approval
- Not recommended for approval

Chairman, Curriculum Coordinating Council:

Diane Schmidt  
Print Name

*Diane Schmidt*  
Signature

6/10/2014  
Date

Vice President for Instruction:

Donna Miller-Parker  
Print Name

*Donna Miller-Parker*  
Signature

6/11/2014  
Date