Text: : <u>Calculus</u>, Anton 11th edition, Wiley	
Class meets: M-F, 1/13/20-5/22/20, 12:00-12:50; CCI 200	
Prerequisite: Math 5B	**Basic Skills Advisories**: Eligibility for English 125 and 126

Description

This is the third of three courses in the basic calculus sequence. Topics include solid analytical geometry, three-dimensional vectors, vector valued functions, partial differentiation, multiple integration, line integrals, divergence, Green's, and Stokes' theorems.

Expectations / Responsibilities

Instructor
- Motivate and inspire student success.
- Provide a classroom climate in which the student takes responsibility for learning.
- Provide instruction and model the quality of work to be successful in Math 6.
- Clearly communicate progress in a timely fashion.

Student
- Be the kind of student you would want your child to be.
- Follow the class rule – **Be Nice**.
- Check **Canvas** and **study daily**.
- Learn the assigned material and *seek additional assistance* when necessary.
- All written work must be *neat, complete, concise and accurate* to receive full credit.
- Promptly *communicate* any class related issues and *follow up in person*.
- If you miss any class time it may be counted as an absence.
- Please see me at the end of class if you are tardy.

You may be dropped if:
- You violate the class rule.
- You are absent for two consecutive classes.
- You are absent for a test.
- Your homework average is below 90% on Friday, March 13, 2020.
- Your test average is below 60% on Friday, March 13, 2020.

Important Dates

January 13, 2020	MON	FIRST DAY OF CLASS
January 24, 2020	FRI	FIRST DROP DEADLINE – **Refund** deadline.
January 31, 2020	FRI	SECOND DROP DEADLINE - Last day to **ADD/DROP** a class OR "**W**"
March 13, 2020	FRI	LAST DROP DEADLINE - Last day to **DROP** OR **Letter Grade**.
May 18, 2020	MON	FINAL 12:00-1:50

*Dates are subject to change.

Grading	**A** 90-100%	**B** 80-89%	**C** 70-79%	**D** 60-69%
Tests *80%*	Tests are *NOT EQUALLY* weighted. Point values per problem will vary. *NO TEST RETAKES*.			
Homework *20%*	Homework may be *online* or *handwritten*.			

*Grades may be accessed in Canvas.

SPRING 2020	MON	TUE	WED	THU	FRI
8:00	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB
9:00	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB	MATH 11 WEB
10:00	MATH DEPT	MATH DEPT	MATH DEPT	MATH DEPT	MATH DEPT
11:00	MATH DEPT	**Office Hour**	**Office Hour**	**Office Hour**	**Virtual Office Hour**
12:00	**MATH 6** CCI 200	**MATH 6** CCI 200	**MATH 6** CCI 200	**MATH 6** CCI 200	**MATH 6** CCI 200
1:00	MEETING TBD	MATH DEPT	MEETING TBD	MATH DEPT	MEETING TBD
2:00	SCFT	MATH DEPT	SCFT	MATH DEPT	SCFT
3:00	SCFT	MEETING TBD	SCFT	MEETING TBD	SCFT

TESTING PROCEDURE

1) TEST INSTRUCTIONS will be provided IN-CLASS and/or by ANNOUNCEMENT prior to testing.
2) BE PROMPT and well-prepared to take the test.
3) NO PHONES or CALCULATORS without prior approval.
4) The SCCCD policy regarding ACADEMIC DISHONESTY will be applied when appropriate.

ACADEMIC DISHONESTY

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents.

NOTE: If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act or section 504 of the Rehabilitation act please contact me as soon as possible.

Please refer to SCCCD policies for guidance on all matters relating to this course.

Objectives

In the process of completing the course, the student will:

1. perform vector operations.
2. determine equations of lines and planes.
3. find the limit of a function at a point.
4. evaluate derivatives.
5. write the equation of a tangent plane at a point.
6. determine differentiability.
7. find local extrema and test for saddle points.
8. solve constraint problems using Lagrange multipliers.
9. compute arc length.
10. find the divergence and curl of a vector field.
11. evaluate two and three dimensional integrals.
12. apply Green's, Stokes', and divergence theorems.

Course Outline

A. Three Dimension Space, Vectors
1. Three-dimensional Cartesian coordinates
2. Sketching of cylindrical surfaces
3. Vectors
4. Dot, cross, and triple products and projections
5. Planes and lines
6. Quadric surfaces
7. Spherical and cylindrical coordinates

B. Vector Valued Functions
1. Introduction to vector valued functions
2. Limits, derivatives, integrals, change of parameter and arc length
3. Unit tangent, normal, and binormal vectors
4. Curvature
5. Motion along a curve-position, velocity, and acceleration

C. Partial Derivatives
1. Functions of several variables, level curves and surfaces
2. Limits, continuity, partial derivatives, and differentiability
3. Chain rules for partial derivatives
4. Normals to surfaces, tangent lines and tangent planes
5. Directional derivatives and gradients
6. Local and global extrema and saddle points
7. Lagrange Multiplier Method

D. Multiple Integrals
1. The double integral, rectangular regions, and non-rectangular regions
2. Double integrals in polar coordinates'
3. Applications for double integrals
4. Surface area in polar coordinates
5. Triple integration
6. Centroids and center of mass
7. Triple integrals in cylindrical and spherical coordinates
8. Change of variables theorem

E. Topics in Vector Calculus
1. Vector fields, divergence and curl
2. Line integrals
3. Independence of path and conservative vector fields
4. Green's Theorem
5. Surface Integrals
6. Applications of Surface Integrals
7. Divergence Theorem
8. Stokes' Theorem