

# Syllabus: MATH-193-0657: Calculus II, Fall 2020.

## **Instructor Information Including Contact Information.**

Instructor Name: Kit Newton.

Email: [knewton@dvc.edu](mailto:knewton@dvc.edu)

Office: MA-128

Phone: 925-969-2674

Office Hours and Location: Monday 11:15 AM – 12:30 PM

Tuesday 10:00 AM – 11:15 AM

Wednesday 2:00 PM – 3:15 PM

Thursday 10:45 AM – 12:00 PM

All office hours will be held online through Zoom.

## **General Course Information.**

Course #: 193

Section: 0657

Days/Times: Monday, 9:35 AM – 10:50 AM

Wednesday, 9:35 AM – 10:50 AM

Location/Instruction Mode: Off Campus/Online

Units: 5

Semester: Fall

Year: 2020

## **Textbook/Materials/Supplies Required.**

Textbook: Zero-Cost OpenStax book “[Calculus Volume 2](#)” by Edwin Herman and Gilbert Strang. Reading will be assigned from the book. Homework assignments will be distributed through Canvas, no WebAssign or WebWork is required. Calculators are not required or recommended. We will use the CAS “[SageMath](#)” available free, as needed.

Technology: your computer needs to support synchronously joining our class over Zoom. Ideally, you have a webcam, microphone, and strong enough internet connection that we can video chat. However, if this isn't feasible for you, please email me and we can figure out how you can participate in the class.

## **Course Description.**

This course is a continuation of MATH-192. Techniques and applications of integration in geometry, science and engineering will be explored. Work with algebraic and transcendental functions will be continued. Other topics will include numerical methods in evaluation of the integral, infinite series, solving differential equations, applications of differential equations, polar coordinates, parametric equations and conic sections.

## **Course Outline.**

1. Areas between curves
2. Volume, volume of a solid of revolution
3. Additional techniques of integration including integration by parts and trigonometric substitution
4. Numerical integration; trapezoidal and Simpson's rule
5. Improper integrals
6. Applications of integration to areas and volumes
7. Additional applications such as work, arc length, area of a surface of revolution, moments and centers of mass, separable differential equations, growth and decay
8. Introduction to sequences and series
9. Multiple tests for convergence of sequences and series
10. Power series, radius of convergence, interval of convergence
11. Differentiation and integration of power series
12. Taylor series expansion of functions
13. Parametric equations and calculus with parametric curves
14. Polar curves and calculus in polar coordinates

## **Prerequisites.**

MATH192 - Analytic Geometry and Calculus I; or equivalent.

## **Attendance Policy.**

We have synchronous class meetings online at the scheduled meeting time for our class. We will do graded activities during class that will be counted towards “Participation”. If you must miss a class, please email me as soon as possible. We may be able to work out other arrangements for you to complete the graded activity.

## **Communication Plan for Faculty and Students.**

I aim to respond to email within 24 hours. This excludes weekends, except in case of emergency. Course related announcements will be posted on the Announcement Page on Canvas and sent to the class email list. Although I will try to make the same announcements during our class time, it will still be important for you to check your student email account and Canvas regularly to make sure you're not missing anything.

## **Homework and Late Submission Policies**

I plan to have 2 midterm exams, homework, quizzes based on the homework, and a final exam. We will do graded activities during the scheduled class time that will be counted towards “Participation”. If you have school or career obligations on scheduled test days, email me at least a week ahead of time for possible accommodations. If you have an emergency and must miss a test, email me as soon as possible. I plan to have one-on-one oral components to each exam.

In case of emergency, extensions on assignments may be possible. You must contact me about an extension **before** the due date/time. I will let you know if an extension has been granted and provide you with the updated due date/time. Assignments submitted after the due date/time without prior approval will receive zero credit.

## Submission of Assignments

Assignments will be turned in on Canvas.

## Student Learning Outcomes.

Students will be able to:

- A. Evaluate definite and indefinite integrals using a variety of integration formulas and techniques.
- B. Apply integration to areas and volumes, and other applications such as work or length of a curve.
- C. Evaluate improper integrals.
- D. Apply convergence tests to sequences and series.
- E. Represent functions as power series.
- F. Graph, differentiate and integrate functions in polar and parametric form.

## Support and Resources.

- [MathLab](#) (available remotely, see [video](#) for instructions!)
- [Online Learning at DVC](#)
- [Counseling](#) (available remotely)
- [Disability Support Services](#) (for students seeking accommodations)
- [Library](#)
- [Multicultural Center](#)
- [Financial Aid](#) (including COVID assistance)
- [Basic Needs](#) (food, shelter, health services)

## Evaluation Criteria and Grading Standards.

Assignment	Percentage of Final Grade
Homework	15
Quizzes	15
Participation	10
Exam 1	20
Exam 2	20
Final Exam	20
<b>Total</b>	<b>100</b>

Grading Scale:

<b>Grade</b>	A	B	C	D
<b>Score</b>	90-100	80-89	60-79	50-59

Final grades are recorded as A=4.0, B=3.0, C=2.0, D=1.0, F=0

### **Syllabus Changes.**

I may modify the syllabus or schedule with reasonable notice to you. Look for an Announcement in Canvas and an email.

### **ADA.**

Diablo Valley College has Disability Support Services available. For information about accommodations for this and other courses, please visit the [DSS](#) page at the DVC website. If approved for accommodations, DSS will provide you with an accommodation plan. Please share your accommodation plan with me and discuss your approved accommodations as early in my class as possible. If your accommodation needs are not being met, please inform me and Disability Support Services as soon as possible.

### **Equity and Inclusion.**

This class aims to be a safe and affirming learning space for all students, regardless of age, race, ethnicity, citizen status, gender, sex, sexual orientation, parental status, religion, ability, or socioeconomic status. As an instructor, I pledge to respect all students based upon these factors, including the use of preferred names and pronouns, and I encourage open communication. Students are welcome and encouraged to share any/all viewpoints relevant to course material.

### **Academic Integrity.**

Academic dishonesty, including cheating and plagiarism, is a violation of the DVC Student Code of Conduct and will not be tolerated. This includes giving or receiving assistance on any assignment, quiz, or exam unless specifically authorized by your instructor. These actions are grounds for academic consequences, such as receiving no credit for the assignment or a reduced grade in the class, and disciplinary consequences from the college. If you have any questions about academic dishonesty or plagiarism, please see the [DVC Academic Integrity Policy](#). Unless otherwise specified, your work in this class is individual work; helping or being helped on assessments is cheating; the penalty is up to a zero on the test for one offense, and an F in the class for a second offense.

### **Tentative Schedule.**

Generally, we will follow our book listed above.

<b>Week:</b>	<b>Topic:</b>	<b>Reading:</b>
8/24 – 8/28	Intro to integrals, area, FTC	Chapter 1

8/31 – 9/4	Applications of integration	Chapter 2
9/7 – 9/11	Applications and techniques of integration	Chapter 2, 3 (3.1 – 3.3)
9/14 – 9/18	Techniques of integration	Chapter 3 (3.3 – 3.5)
9/21 – 9/25	Numerical integration, improper integrals	Chapter 3 (3.6 – 3.7)
9/28 – 10/2	Intro to differential equations	Chapter 4 (4.1 – 4.3)
10/5 – 10/9	Logistic equation, first order linear	Chapter 4 (4.4 – 4.5)
10/12 – 10/16	<b>Exam 1 probably this week</b>	
10/19 – 10/23	Sequences, intro to series	Chapter 5 (5.1 – 5.2)
10/26 – 10/30	Tests of convergence	Chapter 5 (5.3 – 5.6)
11/2 – 11/6	Power series	Chapter 6 (6.1 – 6.3)
11/9 – 11/13	Taylor series and applications	Chapter 6 (6.3 – 6.4)
11/16 – 11/20	Parametric equations and curves	Chapter 7 (7.1 – 7.2)
11/23 – 11/27	Polar coordinates	Chapter 7 (7.4 – 7.5)
11/30 – 12/4	<b>Exam 2 probably this week</b>	
12/7 – 12/11	Review – <b>Final: last day of class</b>	