High School Course of Study Approval Request Form

High School Site	Signature - Principal or Academic AP Designee	Signature - Teacher Leader (enter N/A if no Teacher Leader)	Comments:
American Canyon HS	Andrew Goff	Ron Eick	
Napa HS	Kate Gauger	Heather Oja	
Napa Valley Independent Studies	Susan Wilson	NA	
New Tech HS	Riley Johnson	Jon Southam	
Valley Oak HS	Maria Cisneros	Rafael Garcia Avila	
Vintage HS	Katelyn Estudillo	Brandon DeJesus	

Course submitted by:	Annie Petrie	School Site:	NVUSD Instructional Services

Executive Director, Secondary Education: _____

X New ☐Revised

COMPUTER (Short) TITLE:	CLG Math
TRANSCRIPT SPECIAL COURSE TITLE:	College Calc 2
COURSE NUMBER:	CC401 [NVC Math 121]
GRADE LEVEL:	11 - 12
LENGTH OF COURSE:	1 College Semester (1 year)
GRAD REQUIREMENT:	Mathematics (H)
CSU/UC REQUIREMENT:	"c" (Mathematics)
COLLEGE PREP:	Yes
HONORS:	Yes
VOCATIONAL ED:	No
CALPADS CODE:	2490 (Dual Enrollment College Course - Mathematics)
PATHWAY CODE:	No
NCLB :	Yes
NCLB CORE SUBJECT:	MT

1. Student Learning Outcomes:

   A. Evaluate definite and indefinite integrals.

   B. Solve applications involving integrals.

   C. Find and apply Taylor and Maclaurin series.

2. Course Objectives: Upon completion of this course, the student 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.

3. Course Content

   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; and

   14) Polar curves and calculus in polar coordinates;

4. Methods of Instruction:

Discussion Lecture In-class practice problems.

5. Methods of Evaluation:

Describe the general types of evaluations for this course and provide at least two, specific examples. **Typical classroom assessment techniques**
Exams/Tests -- Quizzes -- Homework -- Final
Exam -- Additional assessment information:

Examples:

1) An exam including integration techniques where the student would be expected to find antiderivatives for functions using a variety of techniques (integration by parts, trigonometric integrals, trigonometric substitution, and integration using partial fraction decomposition).

2) An exam including series and sequences where the student would be expected to determine whether

sequences and series converge or diverge using a variety of different techniques (geometric series, divergence test, p-series, integral test, comparison test, limit comparison text, ratio test, root test, and alternating series test).

6. Minimal Percentage for Passing: 60

Letter Grade Only

7. Assignments:

State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments

Read sections from the textbook, for example:

1. Read section on arc length
2. Read section on improper integrals

B. Writing Assignments

Daily homework exercises from the text, for example:

1. Find the work required to pump all the water out of a cylindrical tank with height = 5 feet, radius = 2 feet.
2. Find the Maclaurin series for $f(x) = \sin(2x)$

C. Other Assignments

Other assignments such as research into applications or group projects assigned at instructor's discretion.

Instructional Materials

Title: **Calculus Early Transcendentals**
Author: **James Stewart**
    [New - request for adoption approval submitted at this Board Meeting.]

Other materials and/or supplies required of students.

• Graphical calculator is required.