Approved (Changed Course)

MATH 1B Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: MATH 1B   Title: CALCULUS 2
Full Title: Calculus, Second Course
Last Reviewed: 9/14/2020

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	5.00	Lecture Scheduled	5.00	17.5	Lecture Scheduled	87.50
Minimum	5.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	5.00		Contact Total	87.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 175.00   Total Student Learning Hours: 262.50

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:

Catalog Description:
Topics include indeterminate forms, conic sections, polar coordinates, infinite series, parametric equations, solid analytic geometry, and vectors.

Prerequisites/Corequisites:
MATH 1A.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Indeterminate forms, conic sections, polar coordinates, infinite series, parametric equations, solid analytic geometry, vectors. (Grade Only)
Prerequisites/Corequisites: MATH 1A.
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC. (CAN MATH20)(MATH 1A+MATH 1B=MATH SEQ B)(MATH 2A+MATH 1A+MATH 1B=MATH SEQ C)

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
	B	Communication and Analytical Thinking	Fall 1981	
	MC	Math Competency		
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 1981	
IGETC:	**Transfer Area**		Effective:	Inactive:
	2A	Mathematical Concepts & Quantitative Reasoning	Fall 1981	

CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:

CID:

CID Descriptor:	MATH 900S	Single Variable Calculus Sequence
SRJC Equivalent Course(s):		MATH1A AND MATH1B
CID Descriptor:	MATH 230	Multivariable Calculus
SRJC Equivalent Course(s):		MATH1B AND MATH1C

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
To be successful, students should be able to:
1. Use limits to evaluate indeterminate forms.
2. Apply convergence tests to series with constant terms.
3. Define and discuss conic sections as equations, as geometric intersections and as loci.
4. Compute and use Taylor polynomials and Taylor series for elementary functions.
5. Apply differention and integration to parametric representations of graphs, including polar graphs.
6. Use rectangular, cylindrical, and spherical coordinates in coordinate space.
7. Compute and use determinates, dot products, cross products, and projections.
8. Determine lines and planes in space.
9. Describe velocity and acceleration of particles in the plane and in space using vector functions.

Topics and Scope:

INTEGRATION AND LIMITS
 Indeterminate forms, L'Hopital's rule and improper integrals.

TOPICS FROM PLANE ANALYTIC GEOMETRY
Conic sections, Polar coordinates and graphs.
INFINITE SERIES
Sequences and series, Convergence tests, Taylor polynomials and
approximations, Power series, Taylor and Maclaurin series.
PARAMETRIC EQUATIONS
Tangents, arc length and areas, Tangents and area for polar graphs
TOPICS FROM SOLID ANALYTIC GEOMETRY
Rectangular, cylindrical and spherical coordinate systems,Quadratic
surfaces.
VECTORS
Vectors in the plane and in space, Determinants, Dot and cross
products, Projections, Lines and planes in space, Differentiation
and integration of vector values functions, Velocity and accelaration,
Tangent and normal vectors, curvature.

Assignment:

1. The student will have daily outside reading, problem set assignments
   from required text(s), or instructor chosen supplementary materials.
2. Instructional methodology may include, but not limited to: lecture,
   demonstrations, oral recitation, discussion, supervised practice,
   independent study, outside project or other assignments.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills
and/or require students to select, organize and explain ideas
in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that
demonstrate competence in computational or non-
computational problem solving skills.

Homework problems, Exams

Problem solving
25 - 50%

Skill Demonstrations: All skill-based and physical
demonstrations used for assessment purposes including skill
performance exams.

Performance exams

Skill Demonstrations
30 - 70%

Exams: All forms of formal testing, other than skill
performance exams.

Multiple choice

Exams
5 - 25%

Other: Includes any assessment tools that do not logically fit into the above categories.

WRITING ASSIGNMENTS		Other Category 1 - 10%

Representative Textbooks and Materials:
Text(s) required of each student will be selected by the department, a committe of the department, or the responsible instructor from the books currently available. Choices could include:
 CALCULUS WITH ANALYTIC GEOMETRY (5TH) Larson/Hostetler D.C. Heath, 1997
 CALCULUS, Ostabee, Zorn, Saunders, 1996