MATH 8A Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: MATH 8A   Title: BRIEF CALCULUS I
Full Title: Brief Calculus I
Last Reviewed: 4/19/2010

Units			Course Hours per Week		Nbr of Weeks	Course Hours Total		
Maximum	3.00		Lecture Scheduled	3.00	17.5	Lecture Scheduled		52.50
Minimum	3.00		Lab Scheduled	0	6	Lab Scheduled		0
			Contact DHR	0		Contact DHR		0
			Contact Total	3.00		Contact Total		52.50
			Non-contact DHR	0		Non-contact DHR		0

Total Out of Class Hours: 105.00   Total Student Learning Hours: 157.50

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:
Limits continuity; differentiation; analytic geometry; maxima and minima; rates of change and differentials; integration; calculus for exponential and logarithmic functions; calculus of the trigonometric functions; applications. This sequence is intended for majors in the life sciences and social sciences. Students will not receive credit for both MATH 8A and MATH 1A.

Prerequisites/Corequisites:
MATH 27 (formerly MATH 57).

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Limits, differentiation, analytic geometry, integration, exponential and logarithmic functions, applications. For life and social science majors. Students will not receive credit for both Math 8A and Math 1A (Grade Only)
Prerequisites/Corequisites: MATH 27 (formerly MATH 57).
Recommended:

Limits on Enrollment:
Transfer Credit: CSU;UC. (CAN MATH30)(MATH 8A+MATH 8B=MATH SEQ D)
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	Spring 1992	Fall 2013
	MC	Math Competency		
CSU GE:	**Transfer Area**		Effective:	Inactive:
	B4	Math/Quantitative Reasoning	Fall 1992	Fall 2013
IGETC:	**Transfer Area**		Effective:	Inactive:
	2A	Mathematical Concepts & Quantitative Reasoning	Fall 1993	Fall 2013

CSU Transfer:	Transferable	Effective:	Spring 1992	Inactive:	Fall 2013
UC Transfer:	Transferable	Effective:	Spring 1992	Inactive:	Fall 2013

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
To be successful, students should be able to:
1. Calculate limits and use limit notation.
2. Determine derivatives of polynomial, rational, algebraic, exponential, and logarrithmic functions.
3. Use techniques of differentiation, including product, quotient, and chain rules.
4. Determine antiderivatives of polynomial, rational algebraic, exponential, and logarithmic functions.
5. Apply derivatives to graphing, optimization, and science applications.
6. Evaluate definite integrals using the fundamental theorem of calculus.
7. Apply definite integration to compute area, volume, arc length, and solve problems in life sciences, economics, and related fields.

Topics and Scope:

1. Precalculus
   The real number line and order; absolute value; exponents and radicals; polynomials; rational expressions; functions; graphs; limits; continuity; slope; distance.
2. The Derivative
   Slope of a curve; rates of change; chain rule; higher order

derivatives; implicit differentiation; related rates.
Differentiation of algebraic, logarithmic and exponential functions.
Applications of the first and second derivative to curve
sketching, optimization problems, related rates and differentials.
3. The Integral
Antiderivatives and indefinite integrals; definite integral as
limit of sum. Integration of algebraic, logarithmic and
exponential functions. Method of integration; substitution.
Applications of the definite integral to area and volume.
4. Trigonometric Functions
Trigonometric functions and their graphs. Derivative and Integral
formulas for the trigonometric functions.

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
0 - 10% |

Representative Textbooks and Materials:
Text (s) required of each student will be selected by the department,
a committee of the department, or the responsible instructor from the
books currently available. Among the choices could be:
BRIEF CALCULUS WITH APPLICATIONS.