MATH 2A Course Outline as of Fall 1999

CATALOG INFORMATION

Dept and Nbr: MATH 2A Title: CALCULUS 3
Full Title: Calculus, Third Course
Last Reviewed: 4/21/2008

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	17.5	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:
Multivariable calculus including partial differentiation and multiple integration, vector analysis including vector fields, line integrals, surface integrals, and the Theorems of Green, Gauss & Stokes.

Prerequisites/Corequisites:
Math 1B.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Multivariable calculus, vector fields, line integrals, surface integrals, Thoerems of Green, Gauss, and Stokes. (Grade Only)
Prerequisites/Corequisites: Math 1B.
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;UC. (CAN MATH22)(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	Fall 2010
	MC	Math Competency		
CSU GE:	**Transfer Area**		Effective:	Inactive:
IGETC:	**Transfer Area**		Effective:	Inactive:

CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2010
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2010

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Outcomes and Objectives:
To be successful, students should be able to:
1.Compute partial derivatives, directional derivatives and gradients, tangent planes, extrema of function of two variables.
2. Apply chain rules to multivariable and vector functions.
3. Compute and apply area in the plain, double integrals and volume, center of mass and moments of inertia.
4. Compute and apply surface area, triple intgrals and volume, triple integrals in cylindrical and spherical coordinate Systems.
5. Apply change of variables to evaluate integrals.
6. Apply vector fields, line integrals, independence of path, surface integrals, and the theorems of Green, Gauss, & Stokes.

Topics and Scope:

1. FUNCTIONS OF SEVERAL VARIABLES.
   Surfaces in space, partial derivatives, the Chain Rules, directional derivatives and gradients, tangent planes, extrema of function of two variables.
2. Multiple Integration.
   Area in the plane, double integrals and volume, center of mass and moments of inertia, surface area, triple integrals and volume, triple integrals in cylindrical and spherical coordinate systems, change of variables.
3. Vector Analysis.
   Vector fields, line integrals, independence of path, surface integrals, and the Theorems of Green, Gauss & Stokes.

Assignment:

1. The student will have daily outside reading, problem set assignments from the 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.

None	Other Category 0 - 0%

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. Choices in the past have included:
MULITVARIABLE CALCULUS(2ND), Stewart, Brooks/Cole, 1997
MULITVARIABLE CALCULUS (5th), Larson/Hostetler, Heath, 1997