FRANCIS MARION UNIVERSITY DESCRIPTION OF PROPOSED NEW COURSE

Department,	/SchoolMathematicsDateOctober 15, 2009
Course No. o	r level201LTitleCalculus I Workshop
Semester ho	urs1Clock hours: LectureLaboratory3
<u>Co</u> rerequisit	esMath 201
Purpose:	1. For Whom (generally?) The Laboratory is recommended for students currently enrolled in Math 201.
	2. What should the course do for the student? (a) The Laboratory will increase structured time spent on calculus. The lab will consist of three additional hours per week devoted to intensive calculus discussion. (b) The Laboratory will explore more challenging aspects of mathematics by requiring students to work on designed problem sets. These worksheets are carefully crafted to provide challenging problems that develop a deeper conceptual understanding of calculus. (c) The Laboratory will also provide more personal interaction with peers and faculty. Students will work in small groups to solve the worksheets. (d) The workshop will also introduce students to technology that can automate and help visualize calculus concepts.
Enrollment e	expectation15 students per semester
The L	ethod planned: aboratory will be supervised by a faculty instructor. The students will be ing in small, independent groups, as in other science labs.
	d/or materials planned (including electronic/multimedia): xtbook required. The Department will create specialized worksheets.
Name of per	son preparing course descriptionDr. Thomas Fitzkee
Department	Chairperson's Signature

Dean's Signature	
Date of Implementation	Fall 2010
Date of School/Department approval	October 21, 2009
Catalog description:	
201L Calculus I Workshop (1:3) (Corequisite: Ma Intensive calculus workshop for students enrolled in small groups on problems that emphasize the l introduce students to technology that can autom	l in Math 201. Students work collaboratively key ideas of calculus. The workshop will also
Course Content:	
Students will gain an understanding of the fundan will become proficient in solving problems related technology, as it is applied to these topics and probassigned in the workshop.	to these concepts, as well as in the use of
When completed, forward to the Office of the Pr	rovost. 9/00

Preliminary Syllabus Math 201L Calculus Workshop

Corequisite: Students must be enrolled in Math 201.

Required Material: No textbook required. Weekly worksheets will be provided by instructor.

Goals and Objectives: Students will gain an in-depth understanding of differentiable calculus. Students will be able to evaluate limits and determine continuity of functions graphically, numerically, and analytically; calculate the derivative of a function by definition and using the basic rules of differentiation in explicit and implicit forms; use knowledge of derivatives to solve related rates and real world problems; combine calculations related to the derivative and limits to completely graph functions.

Grading: A grade of Satisfactory (S) or Unsatisfactory (U) will be assigned based on class participation.

Attendance: Students should attend every workshop. A student may only miss a maximum of two workshops due to illness or personal emergencies. A student who misses three or more workshops will be given a grade of F. Arriving too late or leaving early may count as a partial absence. There are no makeup workshops.

Course Schedule

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Week	Textbook material	Topic	
1	Chapter P	Graphing functions I	
2	-	Graphing functions II	
3	Chapter 1	Evaluating limits graphically and numerically	
4		Evaluating limits analytically I	
5		Evaluating limits analytically II	
6	Chapter 2	Definition and power rule of derivative	
7		Quotient and Product rule for derivative	
8		Chain rule for derivative	
9		Implicit differentiation	
10		Related rates	
11	Chapter 3	First derivative and extrema	
12	-	Rolle's Theorem and the Mean Value Theorem	
13		Second derivative and concavity	
14		Curve sketching	
15		Optimization problems	