Appendix to the Faculty Agenda – April 13, 2010

FRANCIS MARION UNIVERSITY
DESCRIPTION OF PROPOSED NEW COURSE

Department/School____*Mathematics*_____Date___*October 15, 2009*___

Course No. or level___*201L*___Title___*Calculus I Workshop*_____

Semester hours___*1*___Clock hours: Lecture_____Laboratory___*3*_____

Corerequisites___Math 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 expectation___*15 students per semester*_____

Indicate any course for which this course is a (an)
Modification _____
Substitute _____
Alternate _____

Teaching method planned:
The Laboratory will be supervised by a faculty instructor. The students will be working in small, independent groups, as in other science labs.

Textbook and/or materials planned (including electronic/multimedia):
No textbook required. The Department will create specialized worksheets.

Name of person preparing course description ___*Dr. 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: Math 201)
Intensive calculus workshop for students enrolled in Math 201. Students work collaboratively in small groups on problems that emphasize the key ideas of calculus. The workshop will also introduce students to technology that can automate and help visualize calculus concepts.

Course Content:

Students will gain an understanding of the fundamental concepts of differentiable calculus and will become proficient in solving problems related to these concepts, as well as in the use of technology, as it is applied to these topics and problems. Additional homework will not be assigned in the workshop.

When completed, forward to the Office of the Provost. 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

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