Department: Mathematics

Course No: 1126Q

Title: Calculus Ib

Credits: 3

Contact: David Gross

WQ: Q

Proposed Title and Complete Catalog Copy:
1126Q. Calculus Ib

Either semester. Three credits. Prerequisite: Math 1125. Recommended preparation: A grade of C- or better in Math 1125. Students cannot receive credit for MATH 1126 and Math 1121, 1131, 120 or 1151. Substitutes for Math 1131 or 1151 as a requirement.

A continuation of the differential calculus of algebraic, trigonometric, exponential and logarithmic functions of Math 1125 ending with antidifferentiation, the definite integral, some techniques and applications. Math 1126 covers the content of approximately the second half of Math 1131.

RATIONALE FOR ACTION REQUESTED
a) In the past, we have offered a slower freshman calculus sequence (Math 1120, 1121, 1122) and a normal paced sequence (Math 1131, 1132). Under the current fiscal climate, we find that we can have a more efficient system if we offer a slower paced Calculus I (the proposed Math 1125, 1126) which would prepare students to take Math 1132, if desired afterwards. Math 1126 will cover approximately the second half of the content of Math 1131 with a few extra topics from Math 1132. This slight overlap of material will help students transition from Math 1126 to Math 1132.
This course is designed for students with a weaker background and who therefore need more time to improve their algebra as they learn the calculus.
b) The course Math 1126 is replacing a 1000 level course.
c) Since the material of this course is wholly contained in the content of Math 1121, 1131, 120 and 1151, students who have passed these courses should not be allowed to take Math 1126.
d) enrollment is not restricted
e) none
f) none
g) as mentioned in (c), the content of this course is entirely contained in the content of Math 1121, 1131, 120 and 1151.
h) none

FOR ALL GENERAL EDUCATION COURSES
a) This course is designed for those students who have had precalculus in the past, but whose

precalculus skills are nonetheless deficient to the point where taking Math 1131 would be inappropriate. The goals of this course is to teach approximately the second half of the material of Math 1131 at a slower pace so one can reinforce those precalculus skills that are lacking or missing.
b) There will be midsemester exams, online homework assignments, quizzes, projects, group work and a comprehensive final exam.
c) The themes will be to continue the coverage of Math 1125 and cover more applications of differentiation and the beginnings of integration along with some applications.

Q Criteria

This course will teach the content of calculus will infusing a review of precalculus as needed. Therefore:
1. The mathematics contained therein will be at or above the basic algebra level and will be used as an integral part of the course.
2. It will include the use of formulas and functions (linear, quadratic, polynomial, rational, trigonometric, exponential and logarithmic) and their graphs. In particular, they will need to learn and use formulas in differentiating functions mentioned above.
3. It will require students to understand and carry out mathematical manipulations and interpret and draw conclusions from the results of those mathematical manipulations. In particular, they will need to carry out the manipulations of integration when investigating volumes and areas of various shapes. They will need to draw conclusions about the results of those manipulations in determining the results of various optimization and approximation questions.