New Course Request

Check Appropriate Boxes: Undergraduate credit [x] Graduate credit [] Professional credit []

1. School/Division: Purdue School of Science
2. Academic Subject Code: MATH
3. Course Number: 232 (must be cleared with University Enrollment Services)
4. Instructor: L. Rubchinsky
5. Course Title: Calculus for the Life Sciences II
   Recommended Abbreviation (Optional): (Limited to 32 Characters including spaces)
   Spring 2008
7. Credit Hours: Fixed at 3 or Variable from to
8. Is this course to be graded S-F (only)? Yes No X
9. Is variable title approval being requested? Yes No X
10. Course description (not to exceed 50 words) for Bulletin publication: P: 231 (with a minimum grade of C-) or equivalent. Matrices, functions of several variables, differential equations and solutions with applications. Examples and applications are drawn from the life sciences.
11. Lecture Contact Hours: Fixed at 3 or Variable from to
12. Non-Lecture Contact Hours: Fixed at 0 or Variable from to
13. Estimated enrollment: 35 of which 0 percent are expected to be graduate students.
14. Frequency of scheduling: Semester Will this course be required for majors?
16. Are the necessary reading materials currently available in the appropriate library? Yes.
17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.
18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.
19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by: Baki Bolu Date 12/26/07
Department Chairman/Division Director

Approved by: [Signature] Date 2/4/07
Dean

Dean of Graduate School (when required)

Chancellor/Vice-President Date

University Enrollment Services Date

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

B 81 62000 UPS 724 University Enrollment Services-White; Chancellor/Vice-President—Blue; School/Division—Yellow; Department/Division—Pink; University Enrollment Services Advance—White
MATH - 232

Course Syllabus

General Information

Text: Marvin L. Bittinger, Neal Brand, John Quintanilla
Calculus for the Life Sciences
Addison Wesley, 2006
Calculator A scientific calculator. Graphing calculators are not allowed
Prerequisites: Math 231

Additional information can be found on the Math Home Page
http://www.math.iupui.edu

Course Objective

The objective of Math 232 is to provide a solid, practical, working knowledge of calculus and its applications to various scientific and technical fields. Particular attention is focused on applications in the Life Sciences.

Course Outline

1. Matrices
2. Difference equations and applications
3. Functions of several variables
4. Optimization
5. Differential equations
6. Solutions of differential equations
7. Stability of solutions of differential equations
8. Numerical solutions of differential equations
9. Systems of Linear differential equations
10. Matrices and solution curves
11. Applications to population biology