

## Multivariable Economic Applications in Applied Calculus

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April Allen-Materowski is Lecturer and Adjunct Coordinator in the mathematics department. Her research interests are in mathematics education, particularly related to the use of technology and “The Rule of Four”. She and Walter Wang have created instructional videos for precalculus and applied calculus students. She is originally from California.



Warren Gordon is Professor and Chair of the mathematics department. Most recently he has been interested in the integration of technology in the undergraduate mathematics curriculum, to enhance student understanding of mathematics, as well as providing students with more realistic applications, the focus of this paper.



Walter Wang has been teaching at Baruch College since 1968. He has contributed much to the development of the Actuarial Science program and most recently has been honored to win the 2009 CUNY Chancellor’s Award for Excellence in Teaching Undergraduate Mathematics.

### Abstract

The applied calculus course is generally a less theoretical version of the traditional calculus course aimed at non-science majors. In many colleges, students enrolling in this course are business majors, often majoring in economics or finance. A frequent complaint of students is the paucity of realistic applications relevant to these disciplines. The literature study

revealed few realistic multivariable applications to these disciplines. The applications found included the usual, hackneyed, maximize profit/revenue, minimize cost, or determine if demand functions are complementary/substitutes exercises. A review of texts in economics and finance found interesting applications and/or interpretations to level curves, homogeneous functions and Euler's theorem. The authors claim no originality in the following discussion; however, these applications need a wider audience in the mathematical community with the goal of ultimately benefitting students.