

**Mathematics Department
University of Wisconsin Oshkosh**

**General Syllabus for
Math 206 Mathematics for Business Analysis II**

Course Description:

Math 206 covers essential ideas, skills, and methods needed to comprehend several basic calculus concepts and solve quite a few significant problems. Topics are explored from analytical, graphical, numerical, and verbal perspectives.

Prerequisite:

Math 104, Math 108, or Math 204 with a grade of C or better.

Description of Students Who Take the Course:

Math 206 is designed for students planning to major in Business, Economics or related subjects. The mathematical techniques covered have diverse applications in industry, in management, and in other areas. In these fields many decisions are based on information which is not presented in formulas, but rather in word, in tables of numerical data, or in graphs. Math 206 prepares students to deal with different formats, to solve problems, and to interpret their results.

General Goals and Objectives for the Course:

Topics introduced in Math 206, such as marginal analysis, optimization, and finding total change, are used in subsequent Business and Economics courses. The ideas covered include function, derivative, and integral concepts. Upon completion of Math 206 students will be familiar with basic functions and be able to calculate and estimate derivatives and integrals using a variety of methods. A firm grounding in these topics will prepare students for success in later classes.

Textbook and Other Required Materials Recently Used:

- A graphing calculator is required and will be specified by the instructor.

- *Applied Calculus* 3rd edition by Deborah Hughes-Hallett, Andrew Gleason, Patti Frazer Lock, et al.

- *Applications of Calculus with MS Excel* supplementary materials by K. Price.

Specific Course Content:

Course content may vary by instructor, but the usual topics are listed below.

- **Functions:** Linear, polynomial, exponential, and logarithmic functions.

Formulas

for supply and demand, cost, revenue, profit, compound interest, and depreciation.

- **Derivatives:** Slopes of secant and tangent lines, average and instantaneous rates of change, numerical estimates of derivatives, chain rule, product rule, quotient rule, critical points, inflection points, first and second derivative tests, and higher order derivatives.

- **Integrals:** Riemann sums, total change, definite integrals and areas, indefinite integrals, antiderivatives, the fundamental theorem of calculus, and substitution.

- **Multivariable Calculus:** Functions of two or more variables, contour diagrams, and partial derivatives.

- **Applications:** Marginal cost, marginal revenue, marginal profit, local maxima and minima, global maxima and minima, average value, consumer and producer surplus, present and future value, relative growth rates, and elasticity of demand.

Variation by instructor:

Although this course has a common content syllabus across sections and course coordination occurs, teaching methodology and evaluation policies may vary. Evaluation may include quizzes, exams, a comprehensive final, and the collection of homework.

Instructors of this course may assign projects and reading or writing assignments.

Students should consult the individual course syllabus for more information.

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