

Objective and Learning Outcomes of Math 102

Math 102 (Calculus II) is the second course in the Calculus sequence (Calculus I, II, III) offered by the Department of Mathematics & statistics in KFUPM. It is a 4-credit-hour course conducted through 3 lectures and 1 recitation class (a problem-solving class).

Objective: The objective of the course is to introduce students to two main topics of calculus; namely, Integration (methods and applications) and Infinite Series (convergence, divergence and power series).

Learning Outcomes: After completing the course, students are expected to be able to

- integrate various types functions using the various integration methods: substitution rule, integration by part, trigonometric substitution, partial fractions, rational substitution,
- apply integration to find areas, volumes, arc length, and surface areas,
- evaluate improper integrals,
- find the limit of sequences,
- use various convergence tests (geometric series test, divergence test, integral test, comparison tests, alternating series tests, ratio test, and root test) to determine convergence or divergence of series,
- estimate sum of some series,
- find the interval and radius of convergence of power series,
- represent some functions as power series.