

This course is required of all first year students in the Faculty of Applied Science. It is a continuation of APSC-171* with an introduction to infinite series and multivariate calculus.

Textbook: *Calculus: Early Transcendentals*, 4th Edition
by J. Stewart (Brooks/Cole)
The Interactive Course Notes for APSC 172
Notes on Sequences and Series

Instructors: L. Jonker, C. Koestler, L. Butler

Evaluation:	Final examination	65%
	Midterm examination	15%
	Homework	10%
	Quiz	5%
	Project	5%

Outline:

1. Interim projects
2. Parametric curves, vector functions, functions of several variables, limits and continuity
3. Partial derivatives, tangent planes, linear approximations
4. Chain rule, directional derivative, gradient
5. Gradient vectors (continued), maxima and minima, introduction to sequences, sequences and their limits
6. The limit of a sequence, the sum of a sequence, tests for summability (started)
7. Tests for summability (continued), integral test used to estimate sums
8. Vocabulary, power series, Taylor and Maclaurin series
9. Taylor and Maclaurin series (continued), binomial series, applications of Taylor polynomials
10. Double integrals, moments and centers of mass, applications of double integrals
11. Polar coordinates, double integrals using polar coordinates, triple integrals
12. Triple integrals (continued), triple integrals in cylindrical coordinates