(—–; 3-0-1) **Calculus II** APSC-172*

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: **Jonker, Koestler**, M. Cojocaru

Evaluation:

Final examination	70%
Midterm examination	15%
Homework	10%
Quiz	5%

Outline:

1. Trig substitutions; Partial fraction decomposition
2. Trapezoidal Rule, Simpson's rule (briefly), Improper integrals.
   Parametric equations for curves, Vector functions, derivatives.
3. Functions of 2 or 3 variables, graphs, level sets. Limits (briefly)
4. Partial derivatives, Tangent planes, Linear approximation, Differentials,
5. Chain rule, Gradient, Directional derivative, Extreme values
6. Geometric series, Sequences, Sums.
7. Summability and tests
8. Estimating a sum, Power series
9. Taylor series, Binomial series, Estimate remainder
10. Double integrals, Moments and applications
11. Polar coordinates and double integrals.
12. Triple integrals, Cylindrical coordinates