Dr Mourad Ben Slimane

Math 106: Integral Calculus

Book: **Calculus by Swokowski, Olinick, Pence (Sixth Edition)**

M 106 Integral Calculus and Applications (Dr Mohamad Alghamdi)

https://fac.ksu.edu.sa/sites/default/files/fs_0.pdf

Weekly Topics

W1 Antiderivatives and indefinite integrals **-** Change of variables in indefinite integrals

W2 Summation notation and area - The definite integral

W3 Properties of definite integral - The fundamental theorem of calculus Numerical integration

W4 The natural logarithm function -The exponential function - Integration using natural logarithm and exponential function - General exponential function and logarithm function

W5 Inverse trigonometric functions - Hyperbolic and inverse hyperbolic functions

W6 Indeterminate forms and L'Hopital's - Integration by parts

W7 Trigonometric integrals -Trigonometric substitutions

W8 Integrals of rational functions (Partial fractions)

W9 Quadratic expressions and miscellaneous substitutions

Improper integrals

W10 Area between curves -Volume (by disk or washer method)

W11 Volume (by Cylindrical shells method) - Arc length and surface of revolution

W12. Parametric equations - Arc length and surface area

W13.Polar coordinates

W14.Integrals in polar coordinates