Semester II: January – June, 2025 MATH 203:

Differential and Integral Calculus Course details

Name of Instructor: Professor Dr. TMG Ahsanullah

Email: tmga1@ksu.edu.sa **Website** https: fac.ksu.edu.sa/tmga1 Office **Tel**.: 4675177

Office: 2B80 (Building 4, Department of Mathematics, College of Science, KSU)

Books: **Calculus** by E. R. Swokowski, M. Olinic, and D. Pence, PWS Publishing Company, Boston.

You may consult Lecture Notes on Math 203 by Dr. Asif Qureshi as supporting materials

Chapter 8: Infinite Series

8.1 Sequences

8.2 Convergence **or Divergence Series**

8.3 Positive-**term Series**

8.4 The **Ratio and Root Tests**

8.5 Alternating **Series and Absolute Convergence**

8.6 Power **Series**

8.7 **Power Series Representation of Functions**

8.8 **Maclaurin and Taylor Series**

Chapter 13: Multiple Integrals

13.1 Double **Integrals**

13.2 Area **and Volume**

13.3 **Double Integrals in Polar Coordinates**

13.4 **Surface Area**

13.5 **Triple Integrals**

13.6 **Moments and Center of Mass**

13.7 **Cylindrical Coordinates**

13.8 **Spherical Coordinates**

Chapter 14: Vector Calculus

14.1 **Vector fields**

14.2 **Line Integrals**

14.3 **Independence of Path**

14.4 **Green's Theorem**

14.5 **Surface Integrals**

14.6 **The Divergence Theorem**

14.7 **Stockes's Theorem**