

King Saud University

Department of Mathematics

M-203(Semester I: August 20, 2023 - January 4, 2024)

Course outlines and Exercises for Tutorial Classes

Book: Calculus by Swokowski, Olinick and Pence (6th Edition)

- 8.1. **Sequences:** 19,24,26,27,30,38,42
- 8.2. **Convergent or divergent series:** 2,4,5,8,9,11,13,26,27,31,32,33,35,40,43,44,45,46,48.
- 8.3. **Positive term series:** 2,3,4,6,9,12,14,15,18,19,22,23,26,27,31,32,33,36,38,42,45.
- 8.4. **The Ratio & Root tests:** 3,4,6,7,10,12,15,16,17,20,23,25,27,30,37,38,40.
- 8.5. **Alternating Series & Absolute Convergence:** 1,4,6,9,14,16,19,22,24,25,29,32.
- 8.6. **Power Series:** 5, 6, 11,18,21,25,29,30,33.
- 8.7. **Power Series Representation of Functions:** 1,2,5,6,10,15,18,19,23,27,28,31,34.
- 8.8. **Maclaurin & Taylor Series:** 7,8,10,11,13,15,16,18,19,20,21,23,25,28,30,31,33,34,36,38, 40,42
- 13.1. **Double Integrals:** 14,15,19,20,22,23,25,27,29,31,46,47.
- 13.2. **Area & Volume:** 8, 9,10,12,22,24,29,31.
- 13.3. **Double Integrals in Polar:** 8,11,12,13,15,20,21,22,23,26,27.
- 13.4. **Surface Area:** 1, 2,6,8,11,12.
- 13.5. **Triple Integrals:** 2, 5, and 6,12,15,16,22,30,31.
- 13.6. **Moments & Centre of Mass:** 1,4,12,20,24,25.
- 13.7. **Cylindrical Coordinates:** 2,3,4,16,21,31,33,35,36,38,39.
- 13.8. **Spherical Coordinates :**2,5,6,12,16,21,28,31,37,40.

- 14.1. **Vector Fields:** 13,14,17,20.
- 14.2. **Line Integrals:** 5, 8,14,15,16,18,20,24.
- 14.3. **Independence of Path:** 4, 5, 6,11,14,15,18,20,21.
- 14.4. **Green's Theorem:** 3, 4,5,10,11,14,15,18,20,21.
- 14.5. **Surface Integrals:** 2,3,11,14,16,17.
- 14.6. **The Divergence Theorem:** 1, 2,8,9,10,12.
- 14.7. **Stokes's Theorem:** 1, 5, 7.