

Syllabus for MTH 2320 — Calculus III

DEPARTMENT OF MATHEMATICS AND STATISTICS, WRIGHT STATE UNIVERSITY

Text: James Stewart, *Calculus: Concepts and Contexts, 4th Edition*

Section	Week	Sample Homework Assignment
9.7 Cylindrical and Spherical Coordinates	1	2, 6, 8, 10, 14, 18, 22, 36
Chapter 10: Vector Functions		
10.1 Vector Functions and Space Curves	1	6, 10, 17-22 , 30, 32
10.2 Derivatives and Integrals of Vector Functions	1	4, 14, 16, 18, 20, 28, 30, 45, 46
10.4 Motion in Space	2	4, 14, 20, 24, 26, 35
10.5 Parametric Surfaces	2	4, 11-16 , 18, 20, 22, 26
Chapter 11: Partial Derivatives		
11.1 Functions of Several Variables	2	2, 12, 14, 32, 34, 35-40
11.3 Partial Derivatives	3	2, 4, 10, 16, 20, 22, 30, 34, 36, 40, 50, 70, 78
11.4 Tangent Planes and Linear Approximations	3	2, 4, 8 , 12, 19, 20, 24, 28, 32, 36, 40, 42
11.5 The Chain Rule	3	2, 6, 8, 12, 14, 16, 18, 22, 24, 28, 38, 42, 43
11.6 Directional Derivatives and the Gradient Vector	4	4, 6, 10, 12, 16, 22, 32, 35bd, 40, 48, 52
11.7 Maximum and Minimum Values	4	1b, 2b, 4, 6, 14, 20, 24 , 30, 36, 46
Chapter 12: Multiple Integrals		
12.1 Double Integrals over Rectangles	5	2, 4, 6, 8, 16
12.2 Iterated Integrals	5	4, 8, 12, 16, 20, 26, 28
12.3 Double Integrals over General Regions	5	2, 10, 16, 22, 24, 26, 30, 40 , 42, 48
12.4 Double Integrals in Polar Coordinates	6	6, 8, 14, 16, 20, 24, 26, 28, 30
12.5 Applications of Double Integrals	7	2, 6, 10, 12, 18, 22
12.6 Surface Area	7	2, 4, 6, 8, 10, 16 , 22
12.7 Triple Integrals	8	4, 10, 16, 18, 24 , 28, 34, 36, 40, 46
12.8 Triple Integrals in Cylindrical and Spherical Coordinates	8	2, 4, 6, 10, 16, 24, 30, 36, 38, 39
Chapter 13: Vector Calculus		
13.1 Vector Fields	9	4, 6, 12, 16, 26, 28
13.2 Line Integrals	9	4, 8, 14, 20, 22, 28, 40, 42
13.3 The Fundamental Theorem for Line Integrals	10	2, 4, 8, 14, 18, 20, 24, 34
13.4 Green's Theorem	10	4, 6, 10, 12, 18, 21
13.5 Curl and Divergence	11	4, 8, 10, 12, 14, 18, 20, 26, 31, 38
13.6 Surface Integrals	11	6, 10, 22, 26, 30, 42, 44
13.7 Stokes' Theorem	12	2, 6, 8, 10, 14, 19
13.8 The Divergence Theorem	12	2, 6, 12, 14, 23, 26, 29

Optional Sections: Instructors are free to include material from a limited number of additional sections in chapters 10-13.

Schedules and Assignments: Twelve weeks of material are listed, leaving two weeks for exams, review, optional sections, etc. The weeks given are NOT meant to correspond to the actual weeks of the semester. Assignments are examples only. Boldfaced problems require the use of a computer.