Mathematics 103  Fall 2010 Syllabus

Calculus  Edwards and Penney  6th edition

I  Vectors, Curves, Motion, Surfaces

1. Vectors in R2          12.1   777/ 2, 11, 17, 23, 30, 33, 47, 48, 50, 52, 53, 55
2. Vectors in R3          12.2   786/ 1, 13, 20, 21, 33, 41, 42, 44, 54, 67, 69, 70
3. Cross Product          12.3   794/ 1, 4, 5, 11, 12, 14, 16, 17, 19, 22, 29, 30
4. Lines and planes       12.4   801/ 3, 6, 9, 12, 16, 17, 18, 26, 29, 35, 49, 56, 58, 59
5. Curves in R3           12.5   813/ 4, 13, 16, 23, 31, 32, 47, 48, 55, 61, 62, 63
6. Curvature              12.6   828/ 4, 7, 8, 15, 20, 33, 35, 45, 46, 49, 50, 54
7. Quadric Surfaces &     12.7   837/ 12, 19, 21, 24, 33, 40, 52;
   Coordinates             12.8   843/ 11, 24, 27, 33, 34, 53, 55
8. Chapter 12 Miscellaneous 845/  1, 7, 9, 11, 15, 17, 19, 21, 33, 45

II  Differential Calculus of functions of several variables

9. Limits & Continuity    13.2   857/ 5, 10, 23, 26, 33, 40, 47-52, 53-58;
                          13.3   866/ 23, 30, 41, 42, 43, 51
10. Partial Derivatives   13.4   875/ 11, 16, 27, 32, 36, 39, 41, 42, 55, 57a, 58a, c
11. Max-Min               13.5   886/ 5, 8, 15, 18, 25, 30, 34, 39, 49, 50
12. Differentials         13.6   895/ 2, 5, 12, 19, 30, 33, 36, 39, 40, 41
13. Chain rule            13.7   904/ 1, 2, 5, 6, 10, 19, 20, 25, 35, 40, 44, 48
14. Directional derivative 13.8  915/ 6, 9, 14, 17, 22, 23, 25, 31, 34, 51, 53, 61
15. Lagrange multipliers  13.9   924/ 3, 6, 11, 14, 17, 23, 26, 41, 49, 50
16. 2nd derivative test   13.10  933/ 5, 8, 14, 17, 20, 23, 24, 28, 31, 32,
17. Chapter 13 Miscellaneous 936/  1, 3, 5, 9, 15, 17, 21, 39, 41, 45
III  Integral Calculus of functions of several variables

18. Double integrals 14.1  945/ 1, 4, 18, 27, 32, 40;
          14.2  953/ 5, 10, 17, 20, 28, 31, 41, 42
19. Area and volume 14.3  959/ 4, 9, 14, 15, 25, 26, 27, 30, 39, 44
20. Polar coordinates 10.2  635/ 1d, e, 7, 8, 12, 17, 27;
          & double integrals 14.4  966/ 1, 6, 9, 14, 18, 34, 35
21. Applications 14.5  975/ 9, 11, 17, 24, 38, 43, 51, 54
22. Triple integrals 14.6  985/ 3, 8, 12, 17, 18, 24, 27, 34, 36, 37
23. Cylindrical & spherical 14.7  993/ 3, 4, 25, 26, 28, 29, 30, 34, 37, 40
24. Surface Area 14.8  1000/ 1, 4, 9, 11, 13, 16, 17, 18, 21, 22
25. Change of variables 14.9  1007/ 2, 3, 6, 7, 9, 12, 13, 16, 17, 20
26. Chapter 14 Miscellaneous 1010/ 3, 5, 9, 11, 13, 17, 23, 49, 51

IV  Vector Calculus

27. Vector fields 15.1  1018/ 3, 5, 6, 10, 11-14, 18, 19, 35, 39, 40
28. Grad, div, curl 15.1  1018/ 28, 32, 37, 38, 41, 42, 43, 44;  15.2  1028/ 1, 2, 7, 8
29. Line integrals 15.2  1028/ 13, 14, 17, 21, 22, 32, 33, 36, 38, 39, 40, 41
30. Conservative fields 15.3  1036/ 3, 4, 10, 17, 18, 23, 25, 27, 30, 32, 33, 35
31. Green’s theorem 15.4  1045/ 1, 4, 7, 10, 14, 19, 22, 25, 29, 30, 38
32. Surface integrals 15.5  1055/ 1, 4, 11, 13, 14, 16, 19, 20
33. Divergence theorem 15.6  1063/ 1, 2, 7, 10, 11, 15, 16, 24, 25, 26
34. Stokes’ theorem 15.7  1070/ 2, 3, 4, 5, 7, 9, 11, 14, 16, 17
35. Chapter 15 Miscellaneous 1072/ 3, 5, 6, 7, 8, 10, 16, 18, 21

Block Final Exam  Saturday 9am – noon,  December 18, 2010