Week 12

Monday April 17: Class 27:

Path Integrals and the Fundamental Theorem of Calculus. We’ll begin Chapter 8 by learning about line integrals (also sometimes called path integrals), i.e. the integral of a vector function along a given curve or path in space.

Reading:

Williamson & Trotter, (Section 8.1)

Homework #25

Williamson & Trotter, page 376: 1, 2, 8, 9, 14 Extra Credit page 376: 19 AND page 376-377: 22, 25, 28, 29, 30 Extra Credit page 376: 33

Wednesday April 19 Class 28:

Grad, Div and Curl. We’ll be introduced to some new vector operators important in the analysis of Vector Fields.

Reading:

Williamson & Trotter, (Section 8.4)

Homework #26:

Williamson & Trotter, page 394: 1, 2, 4, 6, 8 Extra Credit page 394-395: 11, 19, 20, 21

Friday April 21 Class 29:

Green’s Theorem. We’ll examine the trinity of important theorems (Green’s, Gauss’ and Stokes’) which apply to vector fields. They are all basically multi-dimensional correspondences of the Fundamental Theorem of Calculus.

Reading:

Williamson & Trotter, (Section 9.1)

Homework #27:

Williamson & Trotter, page 408: 3, 4, 6, 7, 10 Extra Credit page 409: 15, 18, 20

Quiz #11