

The main texts for this course are *Calculus* by James Stewart and *Fundamentals of Differential Equations* by Nagel, Saff and Snider. However, you may, if you wish, use *Advanced Engineering Mathematics* by Zill and Wright. The chapters and problems in the Zill book that are relevant to the homework assignments are given below.

Assignments 1 and 2. *Vector Fields, Surfaces*

Read sections 9.7 in the Zill book.

Recommended problems are section 9.7/problems 1 - 6 and 9.13/problems 1 - 14

Assignment 3. *Surface Integrals*

Read section 9.13 in the Zill book.

Recommended problems are section 9.13/problems 29 - 39

Assignment 4. *Divergence, Curl and Laplacian*

Read section 9.7 in the Zill book.

Recommended problems are section 9.7/problems 7 - 35

Assignment 5. *Line Integrals*

Read sections 9.8 and 9.9 in the Zill book.

Recommended problems are sections 9.8/problems 7 - 36 and 9.9/problems 1 - 28

Assignment 6. *Stokes' Theorem*

Read section 9.14 in the Zill book.

Recommended problems are section 9.14/problems 1 - 18

Assignment 7. *Divergence Theorem*

Review section 9.16 in the Zill book.

Recommended problems are section 9.16/problems 1 - 18

Assignment 8 - 9. *Fourier Series*

Read sections 12.1, 12.2 and 12.3 in the Zill book.

Recommended problems are sections 12.2/problems 1 - 17 and 12.3/problems 1 - 24

Assignment 10. *Partial Differential Equations - Heat and Wave Equations*

Read sections 13.1, 13.2, 13.3 and 13.4

Recommended problems are sections 13.2/problems 1 - 12, 13.3/problems 1 - 8 and 13.4/problems 1 - 10

Assignment 11. *Fourier Transforms*

Read section 15.4.

Recommended problems are section 15.4/problems 1 - 20

Assignment 12. *Laplace's Equations*

Read section 13.5