

Book Recommendations

Professor Papageorgiou. Course M2AA2.

1. *Differential and Integral Calculus*, R. Courant. There are two volumes; Volume II is more relevant to this class. (Volume I is good for M1M1, hence a good reference.) Volume II covers topics on the integral theorems, changes of variables, curvilinear coordinates, multi-dimensional integrals, Calculus of Variations etc.
2. For a more elementary approach (good for practice problems) try any one of the American-style large Calculus books. For example *Calculus*, by Thomas and Finney.
3. A useful reference book with lots of solved problems is *Vector Analysis* by Spiegel and is part of the Schaum's Outline Series. This covers the integral theorems, curvilinear coordinates, tensor analysis.
4. *Elementary applied partial differential equations with Fourier series and boundary value problems*, by Richard Haberman. This is an introductory text on partial differential equations and has a very clear discussion of Green's functions as applied to the Laplace and Poisson equation covered in class, as well as an extensive discussion of separation of variables and Fourier series.
5. *Advanced Engineering Mathematics*, Peter O'Neil (there is also one by Erwin Kreyszig by the same title and essentially the same subject matter and contents). There is a good discussion of separation of variables, Fourier series, vector analysis and integral theorems, calculus of variations, among others.