

MATHEMATICAL METHODS OF PHYSICS

Physics 330

KPTC 105 11:30 a.m. – 12:50 p.m.¹

Wed., Fri. – Fall Quarter 2009

This is a one-quarter course which goes quickly through a large amount of material. The course grade will consist of 50% for weekly problem sets, 30% for the final, 10% for a midquarter exam to be held on Friday, November 6, and 10% for a project paper due on December 4. The project may be undertaken in collaboration with up to two other students in the course. The subject should be chosen by the end of October. The text will be J. Mathews and R. L. Walker, *Mathematical Methods of Physics*, 2nd edition, supplemented at times by G. Arfken and H. Weber, *Mathematical Methods for Physicists*.

Week	Dates	Chapter in text	Subject
1	9/30, 10/2	3; Appendix (Also read 2)	Complex variables (see also Arfken)
2	10/7, 10/9	1	Ordinary differential equations
3	10/14, 10/16	13, 2	Numerical methods; series
4	10/21, 10/23	2, 4	Series and products; integral transforms
5	10/28, 10/30	6	Vector spaces; eigenvalue problems (see also Arfken)
6	11/4 11/6	7	Special functions Midquarter exam
7	11/11, 11/13	7	Special functions (see also Abramowitz and Stegun)
8	11/18, 11/20	8	Partial differential equations
9	11/25	9	Green's functions
10	12/2, 12/4	10, 12	Perturbation theory; variational problems

¹First meeting: 11:30 a.m., Wednesday, Sept. 30