

## Syllabus: Mathematical Physics, PHYS 3513

Instructor: Alexander Khanov, office PS 251, phone 744-2404

e-mail: alexander.khanov@okstate.edu

course web site: <http://hep0.okstate.edu/khanov/phys3513.html>

Time and location: MWF 12:30–1:20, PS 121

Text: *Mathematical Methods in the Physical Sciences*, 3rd Ed., Mary L. Boas (John Wiley and Sons, 2006).

Reference: *Methods of Mathematical Physics*, 4th Ed., G. B. Arfken and H. J. Weber (Academic Press, 1995).

Office hours: WF 3:00–4:00 or by appointment

Exams: Midterm I, Midterm II, Final

Homework: assign problems once a week on Fridays, due in a week

Quizzes: assign problems once a week on Mondays, due before the lecture on Wednesdays

Grading: homework 25%, quizzes 5%, Midterm I 20%, Midterm II 20%, Final 30%

Grading scale: A=(85-100), B=(70-84), C=(55-69), D=(40-54), F=(0-39)

Outline of topics:

- \* Infinite series (Ch.1)
- \* Complex numbers (Ch.2)
- \* Linear algebra (Ch.3)
- \* Partial differentiation (Ch.4)  
⇒ Midterm I exam
- \* Multiple integrals (Ch.5)
- \* Vector analysis (Ch.6)
- \* Ordinary differential equations (Ch.8)
- \* Functions of a complex variable (Ch.14)  
⇒ Midterm II exam
- \* Fourier transforms (Ch.7)
- \* Special functions (Ch.11)
- \* Series solutions of differential equations (Ch.12)
- \* Partial differential equations (Ch.13)  
⇒ Final exam