

# Syllabus for PHYS 607

## Methods of Mathematical Physics

**Course description:** This is a one of the core courses for the first year physics graduate students. Topic to be covered will have *Vector Spaces in Physics* as a playground, and will include various subjects—vectors, tensors, operators, matrices, Hilbert space, eigenvalue problem, and group representations theory—that are relevant for mastering of the other core classical and quantum subjects (Mechanics, Electrodynamics, Statistical physics, and Quantum mechanics), as well as for successful passing of the Ph.D. qualifying exam.

- **Course Prerequisites:** Familiarity with Linear algebra and Calculus.
- **Instructor:** Branislav K. Nikolić
- **Email:** bnikolic@physics.georgetown.edu
- **Office:** 222 → 234 Sharp Lab
- **Phone:** (301) 831-2661
- **FAX:** (301) 831-1637
- **Office Hours:** Tuesday, Thursday 1:30-2:30 (consult also the course Web page).
- **Course Web Page:** <http://insti.physics.sunysb.edu/~bnikolic/teaching/phys607.html>
- **Physics and Astronomy Department Office:** 222 Sharp Lab
- **Text:** *Mathematical Physics: A Modern Introduction to Its Foundations*, S. Hassani  
*Mathematics of Classical and Quantum Physics*, F. W. Byron and R. W. Fuller.
- **Class Meeting Times:** MWF 10:10-11:00.
- **Classroom:** 320 Gore Hall.
- **Exams:** There will be one midterm exam and a final (scheduled by the University). Consult the Course Web page for details.
- **Homework:** There will be regular homework assignments every Friday (they are due next Friday).
- **Grading:** The components of the course are wighted as follows:
  - Homework: 40%
  - Midterm: 20%
  - Final: 40%