

Quantum Mechanics III

<http://www.rpi.edu/~napolj/Courses/QMIII/>

Problem Sets for Fall 2004 Semester

October 7, 2004

Your grade in this course will be based on these problem sets. You are encouraged to collaborate with other students on all problem sets, **except for the midterm and final sets** on which you must work independently.

The due dates and times are indicated and will be strictly enforced. Most problem sets are due at the start of the *morning* class. Others are to be handed in to the Physics office by 5pm that day.

Number	Due	Material
1	September 15 Start of Class	Through September 8: Introduction; Path Integrals
2	September 29 Start of Class	Through September 22: Fields and Forces; Covariant Electromagnetism; A little bit of Gravity
3	October 18 (Monday) <i>Turn in directly to the grader!</i>	Through October 6: Feynman Diagrams; Symmetry; Canonical Quantization and the Vacuum
4	Midterm Problem Set: Work on this independently	
	October 27 Start of Class	Through October 20: Spin-1/2 Fields
5	November 10 Start of Class	Through November 3: Electron scattering; Divergences and Renormalization
6	November 23 (Tuesday) At 5pm <i>in the Physics Department office</i>	Through November 17: Fermion Magnetic Moments; Gauge Invariance and Spontaneous Symmetry Breaking; Goldberger-Treiman Relation
7	Final Problem Set: Work on this independently	
	December 14 (Tuesday) At 5pm <i>in the Physics Department office</i>	Through December 8: All of the course, including Ferromagnetism, Superfluidity, and Hawking Radiation