Chemistry 120A Syllabus, Fall 2015

Instructor:	Eric Neuscamman	eneuscamman@berkeley.edu	231 Hildebrand
GSIs:	Qinghui (Grace) Ge	qinghui.g@berkeley.edu	G47 Gilman
	Qiao Kong	kongqiao@berkeley.edu	315 Hildebrand
	Luning (Chris) Zhao	zhaoln@berkeley.edu	G08 Gilman

Grade Composition:
15% Problem Sets
15% Midterm 1
15% Midterm 2
15% Midterm 3
40% Final Exam

If an improvement, the final exam grade will replace the worst scoring midterm.
Late problem sets will receive no credit.

Math Expectations: Sophomore-level Linear Algebra and Differential Equations

Text: *Physical Chemistry: A Molecular Approach* by McQuarrie and Simon

Topics:
motivations for quantum mechanics
vector and inner product spaces
linear and Hermitian operators
postulates of quantum mechanics
the uncertainty principle
particle wave duality
1-dimensional systems
wave packets
quantum harmonic oscillators
angular momentum and spin
commutator algebra
the hydrogen atom
the variational principle
time-independent perturbation theory
time-dependent perturbation theory
Fermi's golden rule and spectroscopy
many-electron systems
Fermionic statistics
mean-field theory
chemical bonds
second quantization
wave function symmetry

Note that course content and ordering is subject to change
due to the fickle-faculty uncertainty principle.