Griffith

Covers 1-4

live recorded lectures

kmadrewicks @
gaweidenpass @
runyu @

Textbooks: Griffith, Shankar, Notes

(no Dirac notation; graduate, advanced)

2 ways to teach QM

① Schrödinger eqn for simple systems
particle in box
quantum SHM

more classical
Griffiths

② Direct connection w/ wierdness
2 state systems
spin of electron
polarization of beam of light (photons)
Heisenberg

Feynman
Dirac

language → immersion > translation

Pset due Friday

Piazza → questions

grades: pset 40% midterm 20% final 40%

1900-1925 Planck $E = n \cdot f \cdot h$ (n: integer, h: constant)

"old Quantum" 1905 - Einstein w/ lights
light consists of photons $E = h \cdot f = \frac{h}{2\pi} \cdot \omega = \hbar\omega$ (f: frequency)

photo electric effect explained

1925-1927 QM Heisenberg — Jordan, Born
Schrödinger
Dirac, von-Neumann

operators on Hilbert Space

1935 Einstein–Podolsky–Rosen EPR-puzzle

1964 Bell's Thm

1982 Feynman Quantum computation

1994 Shor Quantum algorithm for factoring integers

2010 – Now Building quantum computers, quantum information

???

quantum supremacy

quantum entanglement