课程代码（Coursenumber）  
Chemistry 3890 (389)   
  
课程对象（Audience）  
Primarily for Undergraduates  
  
开课教师（Teacher）  
Professor Ezra  
  
学期（Semester）  
Fall  
  
课程描述（Description）  
课程提纲（Syllabus）  
1. The need for Quantum Mechanics  
2. The wavefunction and the Schr¨odinger equation  
3. Solving the Schr¨odinger equation  
4. Particle in a box  
5. Free particle  
6. QM operators, eigenvalues & eigenfunctions  
7. Quantum states and measurement  
8. Barrier problems  
9. Harmonic oscillator  
10. QM in 3 dimensions: Cartesian coordinates  
11. QM in 3 dimensions: Spherical polar coordinates  
12. Rotational energy & angular momentum  
13. 2-particle systems & central forces  
14. Hydrogen atom  
15. Angular momentum & magnetic fields  
16. Indistinguishable particles  
17. Approximation methods: Variational principle  
18. Approximation methods: Perturbation theory  
19. Chemical bonding & QM  
20. Spectroscopy: general aspects  
21. Spectroscopy of diatomic molecules  
  
课时信息（Totalhours）  
  
教参信息（Textbookinfo）  
Intro to Quatum Mechanics (ISBN - 9780132259026),  
Physical Chemistry: A Molecular Approach (ISBN – 9780935702996)  
1 Physical Chemistry by Ira N. Levine (Hardcover - May 9, 2008)  
ISBN-13: 978-0716787594  
世界各地拥有馆藏的图书馆（OCLC）:97  
2 Physical Chemistry by Peter Atkins and Julio de Paula (Hardcover - Mar. 10, 2006)  
ISBN-13: 978-0072538625  
世界各地拥有馆藏的图书馆（OCLC）:99  
3 Physical Chemistry by Robert J. Silbey, Robert A. Alberty, and Moungi G. Bawendi (Hardcover - July 1, 2004)  
ISBN-13: 978-0471215042  
世界各地拥有馆藏的图书馆（OCLC）:245  
4 Physical Chemistry: A Molecular Approach by Donald A. McQuarrie and John D. Simon (Hardcover - July 1, 1997)  
ISBN-13: 978-0935702996  
5 Physical Chemistry by Peter Atkins and Julio dePaula (Hardcover - Dec. 18, 2009)  
ISBN-13: 978-1429218122  
世界各地拥有馆藏的图书馆（OCLC）:30  
6 Schaum's Outline of Physical Chemistry (2nd Edition) by Clyde R. Metz (Paperback - July 1, 1988)  
ISBN-13: 978-0070417151  
7 Applied Mathematics for Physical Chemistry (3rd Edition) by James R. Barrante (Paperback - Sept. 25, 2003)  
ISBN-13: 978-0131008458  
世界各地拥有馆藏的图书馆（OCLC）:156  
8 Physical Chemistry by Peter Atkins and Julio de Paula (Hardcover - Dec. 7, 2001)  
ISBN-13: 978-0716735397  
世界各地拥有馆藏的图书馆（OCLC）:205  
9 Physical Chemistry Student Solutions Manual by Charles Trapp, Marshall Cady, Carmen Guinta, and Peter Atkins (Paperback - Aug. 11, 2006)  
ISBN-13: 978-0716762065  
世界各地拥有馆藏的图书馆（OCLC）:32  
10 Physical Chemistry: Principles and Applications in Biological Sciences (4th Edition) by Ignacio Tinoco, Kenneth Sauer, James C. Wang, and Joseph D. Puglisi (Hardcover - Aug. 16, 2001)  
ISBN-13: 978-0130959430  
世界各地拥有馆藏的图书馆（OCLC）:222  
11 Physical Chemistry for the Chemical and Biological Sciences by Raymond Chang (Hardcover - Mar. 1, 2000)  
ISBN-13: 978-1891389061