课程代码（Coursenumber）：  
4A-4B.   
  
课程名（Coursename） ：  
General Chemistry and Quantitative Analysis.   
  
学分（credit) ：(4;4) Students will receive no credit for 4A after taking 1A. Students will receive no credit for 4B after taking 1B. Students will receive three units of credit for 4B after taking 15.  
  
课程设置（course setting）：Three hours of lecture and four hours of Laboratory per week.   
  
选课要求（prerequisite）:High school chemistry; calculus (may be taken concurrently); high school physics is recommended.   
  
课程描述（Description）： The series 4A-4B is intended for majors in engineering and physical and biological sciences. It presents the foundation principles of chemistry, including stoichiometry, ideal and real gases, acid-base and solubility equilibria, oxidation-reduction reactions, thermochemistry, entropy, nuclear chemistry and radioactivity, the atoms and elements, the periodic table, quantum theory, chemical bonding, molecular structure, chemical kinetics, and descriptive chemistry. Examples and applications will be drawn from diverse areas of special interest such as atmospheric, environmental, materials, polymer and computational chemistry and biochemistry. Laboratory emphasizes quantitative work. Equivalent to 1A-1B plus 15 as prerequisite for further courses in chemistry. 4A (F); 4B (S)  
  
教参信息（Textbookinfo）:  
1 General Chemistry: Quantitative And Qualitative Laboratry Experiments For Science Majers/book A by Jan Dekker and Dan Kimball (Spiral-bound - Mar. 31, 2003)  
ISBN-13: 978-1588742421  
世界各地拥有馆藏的图书馆（OCLC）:1  
2 Quantitative EPR by Gareth R. Eaton, Sandra S. Eaton, David P. Barr, and Ralph T. Weber (Hardcover - July 18, 2010)  
ISBN-13: 978-3211929476   
世界各地拥有馆藏的图书馆（OCLC）:3  
3 General AND Quantitative Analytical Chemistry Laboratory I by ABRAMS BINYOMIN (Paperback - Aug. 26, 2009)  
ISBN-13: 978-0757570261   
世界各地拥有馆藏的图书馆（OCLC）:1  
4 Intensive General AND Quantitative Analytical Chemistry Laboratory I by ABRAMS BINYOMIN (Paperback - Aug. 20, 2009)  
ISBN-13: 978-0757570278   
世界各地拥有馆藏的图书馆（OCLC）:1  
5 General AND Quantitative Analytical Chemistry Laboratory II by ABRAMS BINYOMIN (Paperback - Sept. 1220)  
ISBN-13: 978-0757574443   
世界各地拥有馆藏的图书馆（OCLC）:1  
6 Intensive General AND Quantitative Analytical Chemistry Laboratory II by ABRAMS BINYOMIN (Paperback - Sept. 1220)  
ISBN-13: 978-0757574634  
世界各地拥有馆藏的图书馆（OCLC）:1  
7 Basic Laboratory Principals in General Chemistry With Quantitative Techniques by Fitzgerald B. Bramwell (Paperback - Sept. 1989)  
ISBN-13: 978-0840356543   
8 Solutions Manual: for Quantitative Chemical Analysis 6e by Daniel C. Harris (Paperback - July 2, 2002)  
ISBN-13: 978-0716749844   
世界各地拥有馆藏的图书馆（OCLC）:23  
9 Quantitative Chemical Analysis by Daniel C. Harris (Hardcover - May 19, 2006)  
ISBN-13: 978-0716770411   
世界各地拥有馆藏的图书馆（OCLC）:147  
10 Chemical Biophysics: Quantitative Analysis of Cellular Systems (Cambridge Texts in Biomedical Engineering) by Daniel A. Beard and Hong Qian (Hardcover - July 7, 2008)  
ISBN-13: 978-0521870702   
世界各地拥有馆藏的图书馆（OCLC）:230