

一一二學年度第二學期化學工程與生物科技系博士班資格考試方式及範圍
2024 Spring Semester Department of Chemical Engineering & Biotechnology
Ph.D Program Qualifying Exam Syllabus

科目 Subject Title	日期 Date	地點 Place	第一節(AM 9 : 00~12 : 00)	第二節(PM 1 : 30~4 : 30)
吸附與離子 交 換 Adsorption and Ion Exchange	113 年 6 月 26 日 (三) 2024 Jun 26 (Wed)	化工館 102 會議室 Chemical Engineering Building 1F Room 102	<p>一、參考書目 / Reference books:</p> <ol style="list-style-type: none"> 1. F. Helfferich, "Ion Exchange", 1990. 2. Adsorption and Ion Exchange-Progress and Future Prospects (AIChE Symposium Series), 1984. 3. Process design methods for adsorption and ion exchange (AIChE Series), 1971. 4. Perry's Chemical Engineers' Handbook. <p>二、考試範圍 / Topics:</p> <ol style="list-style-type: none"> 1. Fluid-Solid Equilibria 2. Ion Exchange Kinetics 3. Ion Exchange Accompanied by Reactions 4. Kinetics of Adsorption 5. Fixed-Bed Operations 6. Comparisons of Physical Adsorption, Chemical Adsorption and Ion Exchange <p>三、其他資訊 / Other information:</p> <ol style="list-style-type: none"> 1. 禁止攜帶影印資料、筆記本及智慧型手機 Access to the Internet, printed materials, and electronic devices is prohibited during the exam. 2. Close Book 3. 可帶計算機、直尺 Calculator and ruler are allowed. 	

科目 Subject Title	日期 Date	地點 Place	第一節(AM 9 : 00~12 : 00)	第二節(PM 1 : 30~4 : 30)
高等有機化學 Advanced Organic Chemistry	113 年 6 月 26 日 (三) 2024 Jun 26 (Wed)	化工館 102 會議室 Chemical Engineering Building 1F Room 102	<p>一、參考書目 / Reference books:</p> <ol style="list-style-type: none"> 1. “Organic chemistry”, John McMurry, 9th ed, ISBN-13: 978-1305080485, ISBN-10: 1305080483 2. Organic Chemistry Practice Problems https://www2.chemistry.msu.edu/faculty/reusch/virttxtjml/questions/problems/indexam.htm 3. Name Reactions (mechanisms) https://www.name-reaction.com/list <p>二、考試範圍 / Topics:</p> <ol style="list-style-type: none"> 1. IUPAC names 2. Stereochemistry 3. (Name) Reactions & mechanisms <p>三、其他資訊 / Other information:</p> <ol style="list-style-type: none"> 1. 禁止攜帶影印資料、筆記本及智慧型手機 Access to the Internet, printed materials, and electronic devices is prohibited during the exam. 2. Close Book 3. 可帶計算機、直尺 Calculator and ruler are allowed. 	

科目 Subject Title	日期 Date	地點 Place	第一節(AM 9：00~12：00)	第二節(PM 1：30~4：30)
生醫材料 Biomaterials	113 年 6 月 26 日 (三) 2024 Jun 26 (Wed)	化工館 102 會議室 Chemical Engineering Building 1F Room 102		<p>一、參考書目/ Reference books: Biomaterials Science: An Introduction to Materials in Medicine, 2e, Buddy Ratner, Allan Hoffman, Frederick Schoen, Jack Lemons, Academic Press, San Diego, Cal. USA.</p> <p>二、考試範圍/ Topics: 1. Materials Science and Engineering 2. Biology and Medicine 3. Practical Aspects of Biomaterials</p> <p>三、其他資訊/ Other information: 1.禁止攜帶影印資料、筆記本及智慧型手機 Access to the Internet, printed materials, and electronic devices is prohibited during the exam. 2.Close Book 3.可帶計算機、直尺 Calculator and ruler are allowed.</p>