國立台灣科技大學 114學年 第2學期　課程大綱

Spring 2026 NTUST Course Outline

授課教師：Darwin

Instructor:Darwin Kurniawan

課程名稱：單元操作與輸送現象(三)

Course Title：Unit Operation and Transport Phenomena (3)

2026/11/3

課程代號： TE3038301 Course Code	必選修：必修/半學年 Required/Electve:Required/Half Yr.
學分數： 3 Credits	先修課程： Prerequisites
節次教室： Time/Location	M6(IB-507) M7(IB-507) W6(IB-507)
專業核心能力： Core Professional Competencies	運用數學、科學及工程知識的能力 規劃與執行實驗，並具解析數據之能力。 能發掘、分析、應用研究成果及因應複雜且整合性工程問題的能力。
課程網址： Course Website	
課程宗旨： Course Objectives	Concentration or purification of components in a mixture are essential steps in many or most chemical process industries. This course introduces the students to the different available techniques and considerations to effectively employ a required unit operation and achieve the desired extent of separation. For the proper and efficient operation, appropriate equipment sizing, the use of least amounts of resources, as well as considerations of constraints would be necessary, Thus, this course would involve the application of previously learned concepts and principles, which includes material and energy balances, phase equilibria, and rates of transport. In particular, separations that involve a solid phase (Evaporation and Drying), separation by phase addition or creation (absorption and distillation) will be the main focus.
課程大綱： Outline of Lectures	1. Evaporation 2. Drying of Process Materials 3. Stage and Continuous Gas - Liquid Separation Processes 4. Vapor-Liquid Separation Processes 5. Liquid-Liquid and Fluid-Solid Separation Processes 6. Membrane Separation Processes (optional) 7. Mechanical Separation Processes (optional)
授課方式： Method of Instruction	講授 Lecture：60% 分組討論 Group discussion：10% 案例研討 Case study：20% 操做練習 Practical exercises：10% 講授 Lecture：%
教科書： Textbooks	Geankoplis, C. J., Transport Processes and Separation Process Principles, 4th ed., Pearson Education Limited (2014).
參考書目： References	Geankoplis, C. J., Transport Processes and Separation Process Principles, 4th ed., Pearson Education Limited (2014).

修課須知： Notice	
評量方式： Grading	Homework/exercise: 15% Chapter exam: 40% Final-term exam: 20% Final presentation: 25%
備註說明： Notes	