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：林怡均

Instructor:Yi-Jiun Peter LIN

課程名稱：層流理論

Course Title：Laminar Flow Theory

2026/11/3

課程代號： ME5801701 Course Code 學分數： 3 Credits	必選修：選修/半學年 Required/Electve:Elective/Half Yr. 先修課程： Prerequisites
節次教室： Time/Location	T2(TR-510) T3(TR-510) T4(TR-510)
專業核心能力： Core Professional Competencies	
課程網址： Course Website	https://moodle2.ntust.edu.tw/
課程宗旨： Course Objectives	The course aims to introduce first-year graduate students to viscous flow with engineering applications. Students should have knowledge of basic fluid mechanics, vector calculus, ordinary and partial differential equations, and elementary numerical analysis.
課程大綱： Outline of Lectures	The outline of class contexts includes: 1. Introduction 2. Fundamental Equations of Viscous Flow 3. Exact Solutions of Viscous Flows 4. Laminar Boundary Layers 5. Turbulence
授課方式： Method of Instruction	講授 Lecture：80% 分組討論 Group discussion：0% 案例研討 Case study：10% 操做練習 Practical exercises：10% 講授 Lecture：%
教科書： Textbooks	1. White, F.M. 2006 Viscous Fluid Flow. 3rd ed. McGraw-Hill. 2. Panton, R. L. 2005, Incompressible flow. 3rd ed. John Wiley & Sons Inc. or [electronic resource], 2013, 4th ed. Hoboken, N. J.: Wiley. (Reserved in NTUST library and E-book)
參考書目： References	1. Currie, I.G. 1993, Fundamental Mechanics of Fluids. 2nd ed. McGraw-Hill. or Currie, I.G. 2003, Fundamental Mechanics of Fluids. 3rd ed. Marcel Dekker Inc. 2. Schlichting, H. and Gersten, K. 2000 or 2004, Boundary Layer Theory. 8th ed. Springer. 3. Homsy, G. M., et al. 2007, Multimedia Fluid Mechanics. CD-ROM (ISBN-13: 9780521604765 | ISBN-10: 0521604761), Cambridge University Press. 4. Kundu, P. K. and Cohen, I.M., 2012, Fluid mechanics. Academic Press.
修課須知： Notice	

評量方式： Grading	1. Mid-term exam.: 50% 2. Final exam.: 50%
備註說明： Notes	N/A