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：方文賢

Instructor:Fang, Wen-Hsien

課程名稱：工程數學(二)

Course Title：Engineering Mathematics (2)

2026/6/22

課程代號： ET3002302 Course Code 學分數： 3 Credits	必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites
節次教室： R3(EE-311) T2(IB-503) T3(IB-503) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	This course intends to address the basic principles and applications of linear operations such as systems of linear equations and matrix algebra you encountered in various engineering problems. Also, some more abstract concepts of vector space will also be introduced, bringing more insights into the problems and sometimes providing an easier way to solve the problems.
課程大綱： Outline of Lectures	線性方程式及基本矩陣運算、行列式、向量幾何、向量空間、內積空間、線性轉換、特徵值和其運用。 Systems of Linear Equations, Basic Matrix Operations, Determinants, Vector Spaces, Inner Product Spaces,Linear Transformations, Eigenvalues and Eigenvectors.
授課方式： Method of Instruction	講授 Lecture：100% 分組討論 Group discussion：3% 案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	S. J. Leon and L. de Pillis, Linear Algebra with Applications. 10th ed. Pearson Education Limited, 2020.
參考書目： References	1. W. K. Nicholson, "Elementary Linear Algebra with Applications," 3rd ed. Pws-Kent Publishing Co., Boston, 1995. 2. R. Larson, Edwards, and D. C. Falvo, "Elementary Linear Algebra," 5th ed., Houghton Mifflin company, 2004. 3. G. Williams, "Linear Algebra with Applications," 5th ed., Jones and Barlett, 2005. 4. D. C. Lay, "Linear Algebra and its Applications," 3th ed., Addison Wesley Longman Inc., N.J., 2003. 5. G. Strang, "Introduction to Linear Algebra," 5th ed. Wellesley-Cambridge Press.

修課須知： Notice	- 有助教TA - 有輔助投影片
評量方式： Grading	Quiz: 20 % Midterm and Final: 40 % each
備註說明： Notes	Some background in calculus is helpful.