

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：賴坤財

Instructor:Lay, Kuen-Tsair

課程名稱：工程數學(二)

Course Title : Engineering Mathematics  
(2)

2026/6/22

<p>課程代號： ET3002301 Course Code 學分數： 3 Credits</p>	<p>必選修：必修/半學年 Required/Electve:Required/Half Yr. 先修課程： Prerequisites</p>
<p>節次教室： R3(IB-503) R4(IB-503) T4(IB-503) Time/Location</p>	
<p>專業核心能力： Core Professional Competencies</p>	
<p>課程網址： Course Website</p>	
<p>課程宗旨： Course Objectives</p>	<p>The students will learn the knowledge and computational techniques of Linear Algebra, which are indispensable for engineers. Linear Algebra can be addressed in two aspects - (1). matrix computations, and (2). vector space. The two aspects are related as such: (1). transformations and combinations of vectors can be implemented with operations on matrices for numerical evaluation, and (2). operations on matrices can be interpreted (in an abstract sense) as transformations and combinations of vectors in some vector space. Such relation between those two aspects and how they enhance each other will be emphasized in this course.</p>
<p>課程大綱： Outline of Lectures</p>	<p>Course outline: 1. Systems of Linear Equations and Matrices 2. Determinants 3. Vector Spaces 4. Linear Transformations 5. Eigenvalues and Eigenvectors 6. Inner Product Spaces</p>
<p>授課方式： Method of Instruction</p>	<p>講授 Lecture : 90% 分組討論 Group discussion : 0% 案例研討 Case study : 0% 操做練習 Practical exercises : 10% 講授 Lecture : %</p>
<p>教科書： Textbooks</p>	<p>Textbook: 1. Lecture handouts, as prepared by the lecturer, are distributed to the students via Moodle, in alignment with the progress of the course content. 2. S. J. Leon and L. de Pillis, "Linear Algebra with Applications", 10th Ed., Pearson Education, 2021 (distributed by 滄海圖書, in Taiwan)</p>
<p>參考書目： References</p>	<p>No reference book is assigned. Handouts are given, if necessary, instead.</p>
<p>修課須知： Notice</p>	

1. Lecture videos, recorded in two formats: EverCam and video camcorder, are provided as additional learning materials for the students.
2. This course is an EMI course. The lecturing is conducted in English. Therefore, the students should have the ability to understand, in reading and listening, basic English.

評量方式： Grading:  
Grading

1. Quizzes: 20%
2. Midterm exam: 40%
3. Final exam: 40%

備註說明：  
Notes