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：李安叡

Instructor:Li,An-Jui

課程名稱：滑坡及其整治

Course Title：Landslides and Remedial Measures

2026/11/3

課程代號：CT5802701 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：W3(IB-305) W4(IB-305) W5(IB-305) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website	
課程宗旨： Course Objectives	After this subject, students will have capability of selecting basic design parameters, performing numerical analyses (LEM and FEM), design reinforced and unreinforced slopes.
課程大綱： Outline of Lectures	一、前言 二、台灣之地質概況 三、滑波之發生機制 四、滑波原因之調查技術 五、邊坡穩定分析 六、主動式滑坡整治方法；抗滑樁工法(配合STABL程式使用)；背拉地錨工法(配合地錨設計規範和STABL程式使用) 七、被動式滑坡整治方法：地表水排除；地下水排除；坡頂解載或坡腳加載；坡腳沖蝕防止；植生護坡工法1. Introduction 2. Types and Processes of Landslides 3. Landslide Mechanisms 4. Investigation technologies for Landslides - Aerial photos, satellite images, - Monitoring equipments for landslides - Monitoring of groundwater level and its flow patterns 5. Landslide Hazard Mapping (GIS) - Selection of influencing factors - Establish database - Influence of rainfall on landslides - Failure probability and risk analysis -AI-driven Geospatial Analysis 6. Slope stability analysis Use commercial software PCSTABL for stability analysis(AI-based optimization of slope stability parameters) 7. Active remedial measures for landslides AI-assisted Design Optimization (Predictive modeling for reinforcement effectiveness) - Dowel piles method (止滑樁) - Tie-back anchors method (背拉地錨) 8. Passive remedial measures for landslides - Surface water drainage - Groundwater drainage - Slope grading (修坡) - Toe erosion control (e.g., Submerged Dam, Sediments Storage Dam) - Vegetation cover (e.g., soil bioengineering biotechnical stabilization)
授課方式： Method of Instruction	講授 Lecture：0% 分組討論 Group discussion：0%

	案例研討 Case study：0% 操做練習 Practical exercises：0% 講授 Lecture：%
教科書： Textbooks	
參考書目： References	Duncan and Wright "Soil Strength and Slope Stability" 2nd Edition, John Wiley and Sons Ltd. 2014
修課須知： Notice	
評量方式： Grading	Class performance 10% Report - case study 25% Presentation - case study 25% (10+15) Examination (40%)
備註說明： Notes	