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：施宣光

Instructor:SHIH, Shen-Guan

課程名稱：BIM建築資訊系統應用

Course Title：The Practice and Application of Building Information Modeling (BIM)

2026/11/3

課程代號： AD5147701 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	F10(RB-508) F8(RB-508) F9(RB-508)
專業核心能力： Core Professional Competencies	具備分析與獨立解決問題之能力、理解建築進階知識、具備使用進階專業資源的能力
課程網址： Course Website	https://moodle2.ntust.edu.tw/course/view.php?id=17621
課程宗旨： Course Objectives	This course provides a comprehensive exploration of Building Information Modeling (BIM) as a methodology, technology, and management process. Moving beyond basic 3D modeling, this course focuses on the practice and application of BIM throughout the lifecycle of a building project—from conceptual design and construction to facility management. Students will engage with industry-standard workflows, interoperability challenges, and collaborative strategies defined by modern ISO standards.
課程大綱： Outline of Lectures	Module 1: Foundations & Modeling 1: Introduction to BIM, Digital Shift, and Interface Basics. 2: ISO 19650 Standards and the Common Data Environment (CDE). 3: Parametric Families, Object Intelligence, and Level of Development (LOD). 4: Multi-Discipline Modeling (Architecture, Structure, MEP). Module 2: Analysis & Dimensions 1: Data Management, Automated Schedules, and Material Take-offs. 2: Construction Sequencing, Logistics, and Phasing. 3: Cost Estimation and Quantity Extraction. 4: Sustainability Analysis and Facility Management. Module 3: Coordination & Management 1: Clash Detection, Tolerance, and Model Validation. 2: Interoperability, OpenBIM, and IFC/BCF Standards. 3: BIM Execution Plans (BEP) and Team Collaboration Worksets. 4: Capstone Project Presentation and Future Trends.
授課方式： Method of Instruction	講授 Lecture：25% 分組討論 Group discussion：25% 案例研討 Case study：25% 操做練習 Practical exercises：25%

	講授 Lecture：This course is taught through a combination of lectures, hands-on workshops, computational modeling exercises, and project presentations. The emphasis is on integrating procedural modeling and generative AI techniques into architectural design, particularly for building envelopes.%
教科書： Textbooks	BIM Handbook: A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers, 3rd Edition Rafael Sacks, Charles Eastman, Ghang Lee, Paul Teicholz ISBN: 978-1-119-28753-7
參考書目： References	Blender tutorial https://www.youtube.com/watch?v=B0J27sf9N1Y&list=PLjEaoINr3zgEPv5y--4MKpciLaoQYZB1Z Blender BIM https://blender-addons.org/blenderbim-addon/
修課須知： Notice	NA
評量方式： Grading	Participation 10% Home works 20% Mid-term report 30% Semester project (teamwork) 40%
備註說明： Notes	