

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)

2026/6/22

<p>課程代號：AD5147701 Course Code</p> <p>學分數：3 Credits</p>	<p>必選修：選修/半學年 Required/Elective: Elective/Half Yr.</p> <p>先修課程： Prerequisites</p>
<p>節次教室：F10(RB-508) F8(RB-508) F9(RB-508) Time/Location</p>	
<p>專業核心能力：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 Core Professional Competencies</p>	
<p>課程網址：https://moodle2.ntust.edu.tw/course/view.php?id=17621 Course Website</p>	
<p>課程宗旨：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. Course Objectives</p>	
<p>課程大綱：Module 1: Foundations & Modeling Outline of Lectures 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.</p>	
<p>授課方式：講授 Lecture：25% Method of Instruction 分組討論 Group discussion：25% 案例研討 Case study：25% 操做練習 Practical exercises：25%</p>	

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