

淡江大學 108 學年度第 2 學期課程教學計畫表

課程名稱	建築資訊建模與工程資訊管理	授課 教師	范素玲 FAN, SU-LING
	BUILDING INFORMATION MODELING AND CONSTRUCTION MANAGEMENT SYSTEM		
開課系級	土木系營企三A	開課 資料	實體課程 選修 單學期 3學分
	TECBB3A		
系（ 所 ） 教 育 目 標			
一、培養學生土木工程專業知能，使其滿足就業和深造需求。 二、使學生具備經營管理知識，俾能應用於職場。 三、使學生具備資訊技術能力，厚植其競爭力。 四、培養學生文學、藝術、語文、歷史、社會、政治、未來學、國際現勢、宗教法律、自然等通識學門素養，使其具人文情懷並能永續發展。			
本課程對應院、系(所)核心能力之項目與比重			
A. 土木工程專業能力。(比重：25.00) B. 實作與資訊能力。(比重：50.00) C. 團隊合作與整合能力。(比重：25.00)			
本課程對應校級基本素養之項目與比重			
1. 全球視野。(比重：10.00) 2. 資訊運用。(比重：30.00) 3. 洞悉未來。(比重：10.00) 4. 品德倫理。(比重：10.00) 5. 獨立思考。(比重：10.00) 7. 團隊合作。(比重：30.00)			
課程簡介			
	In this course, students will learn Building Information Model's (BIM) use in the architecture, engineering and construction (AEC) industry, building information, quantities and properties of building components, and understand the benefit and improvement areas BIM process offers and the legal aspects of application of BIM		

本課程教學目標與認知、情意、技能目標之對應

將課程教學目標分別對應「認知 (Cognitive)」、「情意 (Affective)」與「技能(Psychomotor)」的各目標類型。

- 一、認知(Cognitive)：著重在該科目的事實、概念、程序、後設認知等各類知識之學習。
- 二、情意(Affective)：著重在該科目的興趣、倫理、態度、信念、價值觀等之學習。
- 三、技能(Psychomotor)：著重在該科目的肢體動作或技術操作之學習。

序號	教學目標(中文)	教學目標(英文)
1		Students will be able to use Revit to design a building project.
2		Students improve their vocabulary and English speak ability and list at least 50 content-obligatory vocabulary and 50 content-compatible vocabulary .
3		Students will be able to develop learn skills such as identifying, comparing and contrast, evaluation and cooperative learning.

教學目標之目標類型、核心能力、基本素養教學方法與評量方式

序號	目標類型	院、系(所) 核心能力	校級 基本素養	教學方法	評量方式
1	技能	ABC	123457	講述、討論	報告(含口頭、書面)、活動參與
2	認知	ABC	123457	講述、討論	報告(含口頭、書面)、活動參與
3	技能	ABC	123457	講述、討論	報告(含口頭、書面)、活動參與

授課進度表

週次	日期起訖	內 容 (Subject/Topics)	備註
1	109/03/02~ 109/03/08	Coursera BIM Fundamentals for Engineers WEEK 1:Initiation: Prepare for the Class 4.Reading: Revit Installation Coursera BIM Fundamentals for Engineers WEEK 2: Fundamental BIM Knowledge 1.Video: Definition of BIM 2.Video: From CAD to BIM 3.Video: Necessity of BIM 4.Video: BIM Benefits 5.Video: LOD in BIM	
2	109/03/09~ 109/03/15	Coursera BIM Fundamentals for Engineers WEEK 3: View & Retrieve Information from BIM Models 1.Video: Revit: View controls – pan, zoom, rotate, and arrange views 2.Video: Revit: Visibility of elements 3.Revit: Section a 3D view 4.Revit: Retrieve information from schedules 5.Revit: Measure distance in BIM models	
3	109/03/16~ 109/03/22	Coursera BIM Fundamentals for Engineers WEEK 4: Modeling a BIM model 1.Video: Revit: Use the Grid tool to place grid lines 2.Video: Revit: Use the Level tool to define a vertical height 3.Video: Revit Use the Toposurface tool to create topographic surface	

4	109/03/23~ 109/03/29	4.Video: Revit: Use the Column tool to place a column 5.Video: Revit: Use the Beam tool to place a beam	
5	109/03/30~ 109/04/05	6.Video:Revit: Use the Floor tool to create a floor 7.Video:Revit: Use the Wall tool to create a wall	
6	109/04/06~ 109/04/12	8.Video:Revit: Use the Door tool to place a door 9.Video:Revit: Use the Window tool to place a window 10.Video:Revit: Use the Stair tool to create a stair 11.Video:Revit: Use Ramp tool to create a parking ramp	
7	109/04/13~ 109/04/19	Coursera BIM Fundamentals for Engineers WEEK 5: Closure 1.Video: Review for "BIM Fundamental" 2.Video: Preview for "BIM Application"	
8	109/04/20~ 109/04/26	Alternative Arrangement	
9	109/04/27~ 109/05/03	期中考試週	
10	109/05/04~ 109/05/10	Alternative Arrangement	
11	109/05/11~ 109/05/17	Coursera BIM Fundamentals for Engineers WEEK 1: Initiation 1.Video: Course overview 2.Video: BIM applications in building lifecycle	
12	109/05/18~ 109/05/24	BIM Fundamentals for Engineers WEEK 1:Modeling of a Building. 1. Revit exercise: set up the project 2. Revit exercise: model the foundation 3. Revit exercise: model the structural elements and walls 4. Revit exercise: place doors and windows 5. Revit exercise: model stairs 6. Revit exercise: model decorations 7. Revit exercise: place equipment 8. Revit exercise: use the Join tool to join elements	
13	109/05/25~ 109/05/31	Coursera BIM Fundamentals for Engineers WEEK 2:Model Integration and Clash Detection 1. Introduction to Model Integration and Clash Detection 2. Revit exercise: use the Interference Check tool for clash detection 3. Navisworks exercise: use the Clash Detective tool for clash detection	
14	109/06/01~ 109/06/07	Coursera BIM Fundamentals for Engineers WEEK 3:Quantity Takeoff 1. Introduction to quantity takeoff for construction 2. Revit exercise: a quick look at Revit schedules 3. Revit exercise: create quantity schedules 4. Revit exercise: customize settings for schedules 5. Revit exercise: create material takeoff schedules 6. Revit exercise: export and compile schedules	
15	109/06/08~ 109/06/14	Coursera BIM Fundamentals for Engineers WEEK 4:4D Simulation 1. Introduction to progress planning for construction 2. Navisworks: get started 3.Navisworks exercise: add parameters to Revit model elements 4. Navisworks exercise: import models and tasks 5. Navisworks exercise: set task types	
16	109/06/15~ 109/06/21	(本學期期末考試日期為:109/6/18-109/6/24)	

17	109/06/22~ 109/06/28	期末考試週(本學期期末考試日期 為:109/6/18-109/6/24)	
18	109/06/29~ 109/07/05	教師彈性補充教學：課程結束	
修課應 注意事項			
教學設備		電腦、投影機	
教科書與 教材			
參考文獻		https://www.coursera.org/learn/bim-fundamentals https://www.coursera.org/learn/bim-application	
批改作業 篇數		5 篇（本欄位僅適用於所授課程需批改作業之課程教師填寫）	
學期成績 計算方式		◆出席率： % ◆平時評量： % ◆期中評量： % ◆期末評量： % ◆其他 〈〈Participation〉〉：100.0 %	
備 考		「教學計畫表管理系統」網址： https://info.ais.tku.edu.tw/csp 或由教務處 首頁→教務資訊「教學計畫表管理系統」進入。 ※不法影印是違法的行為。請使用正版教科書，勿不法影印他人著作，以免觸法。	