

111/1 Bilingual Education Courses (111 學年度第 1 學期雙語授課課程表)

No. 編號	Department 開課系所	Course Code 課號	Course Title 科目名稱	Required/ Elective 必修/ 選修	Credit Points 學分 數	Instructor 授課老師	Weekly 每週上課節次					Classroom 上課教室	Course Plan 課程 計畫
							Mon	Tue	Wed	Thu	Fri		
1	Doctoral Program in Mechanical and Electro-Mechanical Engineering, Department of Power Mechanical Engineering (動力機械工程系 機械與機電工程 博士班)	2639	Nonlinear System Analysis 非線性系統分析	Elective 選修	3	Hwang, Yunn-Lin 黃運琳				2-4		(BGA0760) First Assembly Building 7th floor Reverse rapid prototyping laboratory 綜合工程一館 7F BGA0760 逆向快速成型 實驗室	<u>Course Plan</u>
2	Doctoral Program in Mechanical and Electro-Mechanical Engineering, Department of Power Mechanical Engineering (動力機械工程系 機械與機電工程)	2640	Dynamics of Multibody Systems 多體動力學	Elective 選修	3	Hwang, Yunn-Lin 黃運琳		2-4				(BGA0830) First Assembly Building 8th floor Computer Aided Drafting and Drawing Lab. 綜合工程一館 8F BGA0830 電腦輔助繪圖 室	<u>Course Plan</u>

	博士班)												
3	Master's Program in Materials Science and Green Energy Engineering, Department of Materials Science and Engineering (材料科學與綠 色能源工程研究 所碩士班)	0218	Semiconductor Devices and Manufacturing Process 半導體元件與製 程	Elective 選修	3	Fang, Jau-Shiung 方昭訓		2-4				(AME0324) 3F Building of Mechanical Engineering 機 械工程館 3F 預 備教室(三) AME0324	<u>Course Plan</u>
4	Master's Program in Materials Science and Green Energy Engineering, Department of Materials Science and Engineering (材料科學與綠 色能源工程研究 所碩士班)	0210	Thermodynamics of Solids 固態熱力學	Required 必修	3	Tsai, Chau-Yi 蔡朝伊	9-11					(AME0324) 3F Building of Mechanical Engineering 機 械工程館 3F 預 備教室(三) AME0324	<u>Course Plan</u>
5	Department of Aeronautical Engineering (飛機工程系)	1387	Aircraft Maintenance Practice 飛機維修實務	Elective 選修	3	Wang, Shih-Chia 王士嘉					1-3	(AAF0101) Airport Arena 1F Aircraft Hangar	<u>Course Plan</u>

												飛機場館 1F 飛機教學棚廠	
6	Master's Program in Aeronautical and Electronic Engineering, Department of Aeronautical Engineering (飛機工程系航空 與電子科技碩士 班)	0292	Aircraft quality assurance and certification 航空品保與驗證	Elective 選修	3	Lin, Chung-Yan 林中彥					5-7	(BGC0704) 綜合工程三館 7F BGC0704 飛機液氣壓實習 工場 Aircraft Hydraulic System Lab. The 3rd Complex Building 7F	<u>Course Plan</u>
7	Master's Program, Department of Automation Engineering (自動化工程系碩士班)	0051	Application for Digital Image Processing 數位影像處理實務	Elective 選修	3	Lee, Kuang- Chyi 李廣齊					7-9	(BGA0330) Computer-aided Engineering Lab 3F, Building One, Campus Two 綜合工程一館 3F 電腦輔助工程 實驗室	<u>Course Plan</u>
8	Master's Program, Department of Automation Engineering	0052	Autonomous Unmanned Vehicle System 自動化無人載具	Elective 選修	3	Lee, Meng-Tse 李孟澤	5-7					(BGA0340) Seminar Room 3F, Building One, Campus	<u>Course Plan</u>

	(自動化工程系碩士班)		系統									Two 綜合工程一館 3F 研討室	
9	Department of Vehicle Engineering (車輛工程系)	1235	Physics (1) 物理 (一)	Required 必修	3	Cheng-Ta Chung 鐘證達	2-3				2	The Second Teaching Building 3F ATB0302 General Classroom 第二期教學大樓 3F ATB0302 普通教室	<u>Course Plan</u>
10	Department of Vehicle Engineering (車輛工程系)	1249	Physics (1) 物理 (一)	Required 必修	3	Cheng-Ta Chung 鐘證達			5-6		4	The Second Teaching Building 3F ATB0301/302 General Classroom 第二期教學大樓 3F ATB0301/302 普通教室	<u>Course Plan</u>
11	Department of Vehicle Engineering	1234	Introduction to Electric vehicles 電動車概論	Elective 選修	3	Tsai, Hung-Yih 蔡宏嶧	5-6	5				(ATB0302) The third floor of the second	<u>Course Plan</u>

	(車輛工程系)											teaching building 3F General purpose classrooms 第二期教學大 樓 3F ATB0302 普通教室 (ATB0301) The third floor of the second teaching building 3F General purpose classrooms 第二期教學大 樓 3F ATB0301 普通教室	
12	Department of Precision Mechanical Engineering (精密機械工程科)	2603	P-TECH Course (5) P-TECH 課程 (五)	Elective 選修	1	Mao, Yen-Chieh 毛彥傑			7			(AIA0104) Information Building 1F 資訊大樓 1F	<u>Course Plan</u>
13	Department of Precision Mechanical Engineering (精密機械工程科)	2586	P-TECH Course (3) P-TECH 課程 (三)	Elective 選修	1	Mao, Yen-Chieh 毛彥傑			6			(AIA0104) Information Building 1F 資訊大樓 1F	<u>Course Plan</u>

14	Department of Precision Mechanical Engineering (精密機械工程科)	2565	P-TECH Course (1) P-TECH 課程 (一)	Elective 選修	1	Mao, Yen-Chieh 毛彥傑			5			(AIA0104) Information Building 1F 資訊大樓 1F	Course Plan
156	Electro-Optical and Materials Science (光電工程系光電與材料科技碩士班)	0266	Organic Electro-Optics Devices 有機光電元件	Elective 選修	3	Fuh-Shyang Juang 莊賦祥				5-6		(BGAB150) Classroom2,First Assembly Building B1 綜合工程一館 B1 預備教室二	Course Plan
											5	(BGAB160) Classroom4,First Assembly Building B1 綜合工程一館 B1 預備教室四	
15	Electro-Optical and Materials Science (光電工程系光電與材料科技碩士班)	0267	Integrated Optics 積體光學	Elective 選修	3	Wei-Ching Chuang 莊為群	5-7					(BGAB160) Classroom4,First Assembly Building B1 綜合工程一館 B1 預備教室四	Course Plan
17	Department Electro-Optical Engineering (光電工程系)	1069	Photonic Detection 光電檢測	Elective 選修		Hung-Ji Huang 黃鴻基		9		9-10		(BGAB160) Classroom4,First Assembly Building B1 綜合工程一館 B1 預備教室四	Course Plan

18	Department of Electrical Engineering (電機工程系)	1015	Science and Technology English 科技英文	Elective 選修	3	Sen-Tung Wu 吳森統		2-4				EE building, Lighting laboratory 電機館 1F BEE0105 照明實驗室	Course Plan
19	Master's Program, Department of Electrical Engineering (電機工程系碩士班)	0126	FPGA Circuits Design FPGA 電路設計	Elective 選修	3	SUN, CHI-CHIA 宋啟嘉				2-4		BEE0502; Network Application and Chip Design Lab. 5F, Electrical 電機館 5F BEE0502 網路應用與晶片設計實驗室	Course Plan
20	Master's Program, Department of Electrical Engineering (電機工程系碩士班)	0129	Embedded Systems 嵌入式系統	Elective 選修	3	SU, HUI-KAI 蘇暉凱	5-7					BEE0402; Intelligent Electronic and Application Lab. 4F, Electrical Engineering Building 電機館 4F BEE0402 智慧電子應用實驗室	Course Plan
21	Department of	1964	Introduction to	Required	3	TSAI, PO-HSIANG					3	(BGC0501)	Course

	Computer Science and Information Engineering (資訊工程系)		Information Engineering 資訊工程導論	必修		蔡柏祥						The 3rd Assembly Building 5F Basic electricity and professional certification Lab. 綜合工程三館 5F BGC0501 基本電學與證照實驗室	<u>Plan</u>
										2	2	(BGC0614) The 3rd Assembly Building 6F e-Learning Lab. 綜合工程三館 6F BGC0614 數位學習實驗室	
22	Department of Computer Science and Information Engineering (資訊工程系)	1979	Introduction to Information Engineering 資訊工程導論	Required 必修	3	TSAI, PO-HSIANG 蔡柏祥					4	(BGC0501) The 3rd Assembly Building 5F Basic electricity and professional certification Lab.	<u>Course Plan</u>

												綜合工程三館 5F BGC0501 基本電學與證照實驗室	
										3-4		(BGC0614) The 3rd Assembly Building 6F e-Learning Lab. 綜合工程三館 6F BGC0614 數位學習實驗室	
23	Department of Computer Science and Information Engineering (資訊工程系)	2013	Microprocessor 微處理機	Required 必修	3	CHEN,KUO-YI 陳國益			5-7			(BGC0601) The 3rd Assembly Building 6F IC Desing Lab. 綜合工程三館 6F BGC0601 IC 設計實驗室	<u>Course Plan</u>
24	Department of Computer Science and Information Engineering (資訊工程系)	2024	Operation Systems 作業系統	Required 必修	3	HUANG,SHIH-CHANG 黃世昌		5-6	1			(BGC0601) The 3rd Assembly Building 6F IC Desing Lab. 綜合工程三館 6F BGC0601 IC	<u>Course Plan</u>

												設計實驗室	
25	Master's Program, Department of Computer Science and Information Engineering (資訊工程系碩士班)	0116	Intelligent Optimization Algorithm 智慧型最佳化演 算法	Elective 選修	3	CHENG,CHIN-TSUNG 鄭錦聰					5-7	(BGC0305) Embedded System Software Design Lab. 綜合工程三館 3F BGC0305 嵌 入式系統軟體 實驗室	<u>Course Plan</u>
26	Master's Program, Department of Computer Science and Information Engineering (資訊工程系碩士班)	0117	Big Data Analysis 巨量資料分析	Elective 選修	3	JIANG,JI-HAN 江季翰				2-4		(BGC0501) The 3rd Assembly Building 5F Basic electricity and professional certification Lab. 綜合工程三館 5F BGC0501 基 本電學與證照 實驗室	<u>Course Plan</u>
27	Master's Program, Department of Computer Science and Information Engineering (資訊工程系碩士班)	0118	Internet of things 物聯網	Elective 選修	3	JIAN,MING-SHEN 簡銘伸					2-4	(BGC0305) Embedded System Software Design Lab. 綜合工程三館 3F BGC0305 嵌 入式系統軟體	<u>Course Plan</u>

	士班)											實驗室	
28	Master's Program, Department of Computer Science and Information Engineering (資訊工程系碩士班)	0115	Pattern Recognition 圖形識別	Elective 選修	3	LIN,WU-CHIEH 林武杰					2-4	(BGC0305) Embedded System Software Design Lab. 綜合工程三館 3F BGC0305 嵌 入式系統軟體 實驗室	Course Plan
29	Department of Power Mechanical Engineering (動力機械工程系)	0842	Physics(1) 物理(一)	Required 必修	3	Yu-Sung Liu 劉育松		7	5,6			(ATB0201) Classroom 201,Building 2 第二期教學大 樓 2F ATB0201 普通教室 (ATB0202) Classroom 202,Building 2 第二期教學大 樓 2F ATB0202 普通教室	Course Plan
30	Department of Mechanical and Computer-Aided Engineering (機械電腦輔助工 程系)	2346	Physics(1) 物理(一)	Required 必修	3	Yu-Sung Liu 劉育松	4			5,6		(ATB0402) Classroom 402,Building 2 第二期教學大 樓 4F ATB0402 普通教室	Course Plan

31	Master's Program in Industrial Engineering and Management, Department of Engineering and Management (工業管理系 工 業工程與管理碩 士班)	0307	Quantitative Research Methodology 數量研究方法	Required 必修	3	Hu ,Chih -Hsiung 黃俊平	2-4					Seminar Room III (CMA0806) Applied Arts, Sciences and Management Building 8F 文 理 暨管理大樓 8F CMA0806 專業教室 (三)	Course Plan
32	Master's Program in Industrial Engineering and Management, Department of Engineering and Management (工業管理系 工 業工程與管理碩 士班)	0309	Data Mining 資料探勘	Elective 選修	3	Ying -Lien Lee 李英聯	2-4					Business Intelligence Room (CMA0305) Applied Arts, Sciences and Management Building 3F 文 理 暨管理大樓 3F CMA0305 企業智慧教室	Course Plan
33	Master's Program in Industrial Engineering and Management, Department of Engineering and	0308	Simulation 模擬學	Elective 選修	3	Hu ,Chih -Hsiung 胡智熊			2-4			Business Intelligence Room (CMA0305) Applied Arts, Sciences and	Course Plan

	Management (工業管理系 工業工程與管理碩士班)											Management Building 3F 文理 暨管理大樓 3F CMA0305 企業智慧教室	
34	Master's Program in Industrial Engineering and Management, Department of Engineering and Management (工業管理系 工業工程與管理碩士班)	0306	Seminar(一) 專題討論 (一)	Required 必修	0	Hu ,Chih -Hsiung 胡智熊					3-4	Seminar Room III (CMA0806) Applied Arts, Sciences and Management Building 8F 文理 暨管理大樓 8F CMA0806 專業教 室 (三)	<u>Course Plan</u>
35	Master's Program, Department of Finance (財務金融系碩士班)	0035	Corporate Finance 公司理財	Required 必修	3	Wang, Jo-Yu 王若愚					5-7	(CHB0107) Certificate Center, Art and Humanity Building 1F 人文大樓 1F CHB0107 專業 電腦教室二	<u>Course Plan</u>
36	Master's Program, Department of Finance	0036	Econometrics 計量經濟學	Required 必修	3	Tsai, Feng-Tse 蔡豐澤			5-7			(CHB0107) Certificate Center,	<u>Course Plan</u>

	(財務金融系碩士班)											Art and Humanity Building 1F 人文大樓 1F CHB0107 專業 電腦教室二	
37	Master Program in Business Management, Department of Business Administration (經營管理碩士班)	0339	Marketing Management 行銷管理	Elective 選修	3	Mam-Shin Cheng 鄭錡新		7,8				(CHB0208) Art and Humanity Building 2F 人文大樓 2F CHB0208 研究 生教室	<u>Course Plan</u>
										2		(CMA0209) Management of Entrepreneurial &Technology Lab., Applied Arts, Sciences and Management Building 2F 文理暨管理大 樓 2F CMA0209 創業 管理實驗室	
38	Master Program in Business Management, Department	0340	Corporate Financial Management 公司財務管理	Elective 選修	3	Chi-Lin Lu 呂麒麟			5-7			(CMA0209) Management of Entrepreneurial &Technology Lab., Applied Arts, Sciences	<u>Course Plan</u>

	of9Business Administration (經營管理碩士 班)											and Management Building 2F 文理暨管理大 樓 2F CMA0209 創業 管理實驗室	
39	Master Program in Business Management, Department of Business Administration (經營管理碩士 班)	0342	Business Data Analysis 企業資料分析	Elective 選修	3	Liang, Chih-Chin 梁直青			2-4			(CMA0208) Applied Arts, Sciences and Management Building 2F 文理暨管理大 樓 2F CMA0208 服務 科學實驗室	<u>Course Plan</u>
40	Master Program in Business Management, Department of Business Administration (經營管理碩士 班)	0355	Motivation and Leadership 激勵與領導	Elective 選修	3	Ching-Hsiang Liu 劉慶湘			2-4			(CMA0209) Management of Entrepreneurial &Technology Lab., Applied Arts, Sciences and Management Building 2F 文理暨管理大 樓 2F CMA0209 創業 管理實驗室	<u>Course Plan</u>
41	Master Program in Business	0356	Global Marketing	Elective 選修	3	Yi Hsu 徐怡				5-7		(CMA0206) Applied Arts, Sciences and	<u>Course Plan</u>

	Management, Department of Business Administration (經營管理碩士 班)		全球化行銷									Management Building 2F 文理及管理大 樓 2F CMA0206 經營 模擬與數據分 析實驗室	
42	Master Program in Business Management, Department of Business Administration (經營管理碩士 班)	0357	Entrepreneurial Management 創業管理	Elective 選修	3	Yu-Chun Chen 陳鈺淳			5-7			(CMAB108) Applied Arts, Sciences and Management Building B1 文理及管理大 樓 B1 三創學 程專業教室(1)	<u>Course Plan</u>
43	Master's Program, Department of Information Management (資訊管理系碩士 班)	0094	Introduction to Business Intelligence 商業智慧	Electives 選修	3	Yung-Tsung Hou 侯雍聰	5-7					(CMA0407) ., Applied Arts, Sciences and Management Building 4F 文理暨管理大 樓 4F CMA0407 智慧應用電腦 教室	<u>Course Plan</u>
44	Master's Program, Department of Information Management (資訊管理系碩士 班)	0096	ETL and Modeling of Big data 大數據彙整與建 模	Electives 選修	3	Nian-Ze Hu 胡念祖					2-4	(CMA0405) ., Applied Arts, Sciences and Management Building 4F 文理暨管理大 樓 4F CMA0405 多媒體電腦教	<u>Course Plan</u>

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45	Master's Program, Department of Information Management (資訊管理系碩士 班)	0090	Seminar on Information Management(1) 資訊管理專題研 討(一)	Electives 選修	2	Yen-Kun Lin 林彥昆		3,4				(CMA0614) ., Applied Arts, Sciences and Management Building 6F 文理暨管理大 樓 6F CMA0614 企業電子化實 驗室	Course Plan
46	Department of agricultural technology (農業科技系)	1616	Programming 程式設計	Elective 選修	3	Yu-Sung Liu 劉育松					5-7	(AIA0205) Computer classroom, Information Building 2F 資訊大樓 2F 電腦教室 AIA0205	Course Plan
47	Master's Program, Department of Leisure and Recreation (休閒遊憩系碩士 班)	0183	Sustainable Tourism 永續觀光	Elective 選修	3	Lin Chung-Hsien 林宗賢		5-7				(CMA0503) Master Classroom I, Applied Arts, Sciences and Management Building 5F 文理暨管理大 樓 5F CMA0503 碩士 班教室(一)	Course Plan
48	Master's Program in Digital Contents and Creative Industries,	0161	Project Discussion (I) 專題討論(一)	Required 必修	0	Shen,siu tsen 沈思岑		5-6				(CHB0305) Multimedia Design Studio, Art and	Course Plan

	Department of Multimedia Design (多媒體設計系數位內容創意產業碩士班)											Humanity Building 3F 人文大樓三樓 多媒體設計實驗室	
49	Master's Program in Digital Contents and Creative Industries, Department of Multimedia Design (多媒體設計系數位內容創意產業碩士班)	0162	Research Design Methods 研究方法特論	選修	3	Shen,siu tsen 沈思岑				2-4		(CHB0305) Multimedia Design Studio, Art and Humanity Building 3F 人文大樓三樓 多媒體設計實驗室	<u>Course Plan</u>
50	Master's Program in Digital Contents and Creative Industries, Department of Multimedia Design (多媒體設計系數位內容創意產業碩士班)	0163	Human Computer Interface 人機介面互動設計研究	選修	3	Shen,siu tsen 沈思岑				5-7		(CHB0305) Multimedia Design Studio, Art and Humanity Building 3F 人文大樓三樓 多媒體設計實驗室	<u>Course Plan</u>
51	Master's Program in Digital Contents and Creative Industries,	0171	Digital Media Communication 數位媒體傳播	選修	3	Shen,siu tsen 沈思岑			2-4			(CHB0305) Multimedia Design Studio, Art and	<u>Course Plan</u>

	Department of Multimedia Design (多媒體設計系數 位內容創意產業 碩士班)											Humanity Building 3F 人文大樓三樓 多媒體設計實 驗室	
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國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	非線性系統分析 Nonlinear System Analysis	授課教師 Instructor	黃運琳 / 教授 Yunn-Lin Hwang / Professor
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教學簡要說明

1.請依照授課班級英文分級程度規劃課程計畫書。

Please design the course plan by following the English using percentage of the course English level.

2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。

Please state bilingual instructor's teaching weeks and hours in course outline section.

課程教材 Material	1.指定課本書名 Book： <u>Shabana, Ahmed A., Vibration of Discrete and Continuous Systems, Springer Nature Switzerland AG 1997, 2019.</u> (<u>100</u> % 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 3.其他補充說明 Others：
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input checked="" type="checkbox"/> 其他方式說明 Others：Final Project.
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考： <u>100</u> % 以上英文試題，學生以英文答題 <u>80</u> %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告： <u>80</u> % 以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：

課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduce Working Model 2D	Software demonstration, Q&A
W2	Introduce RecurDyn	Software demonstration, Q&A
W3	Appendix: LINEAR ALGEBRA	Lectures, Homework, Q&A
W4	Kinematics of Rigid Bodies	Lectures, Q&A
W5	Dynamic Equations	Lectures, Homework, Q&A
W6	Single Degree of Freedom Systems	Lectures, Homework, Q&A
W7	Lagrangian Dynamics	Lectures, Homework, Q&A
W8	Lagrange's Equations	Lectures, Homework, Q&A
W9	Midterm Examination	Open-Book Midterm Exam.
W10	Multi-degree of Freedom Systems	Lectures, Homework, Q&A
W11	Forced Vibration of the Undamped	Lectures, Homework, Q&A

	Systems	
W12	Viscously Damped Systems	Lectures, Q&A
W13	Nonlinear Systems and Modal Decomposition	Lectures, Homework, Q&A
W14	Vibration of Continuous Systems	Lectures, Homework, Q&A
W15	Free Longitudinal Vibrations	Lectures, Q&A
W16	Free Transverse Vibrations of Beams	Lectures, Homework, Q&A
W17	Free Torsional Vibrations	Oral presentations for final reports
W18	Final Examination	Open-Book Midterm Exam.

國立虎尾科技大學雙語教學課程計畫書 Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	多體動力學 Dynamics of Multibody Systems	授課教師 Instructor	黃運琳 / 教授 Yunn-Lin Hwang / Professor
教學簡要說明 3.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level. 4.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.			
課程教材 Material	4.指定課本書名 Book：__Shabana, Ahmed A., Dynamics of Multibody Systems, Cambridge University Press. (100% 英文內容 Percentage in English) 5.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 6.其他補充說明 Others：		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input checked="" type="checkbox"/> 其他方式說明 Others：Final Project.		
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：__100__%以上英文試題，學生以英文答題__80__%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告：__80__%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：		
課程進度 Course Outline			
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities	

W1	Introduce Working Model 2D	Software demonstration, Q&A
W2	Introduce RecurDyn	Software demonstration, Q&A
W3	Appendix: LINEAR ALGEBRA	Lectures, Homework, Q&A
W4	Introduction of Multibody Systems	Lectures, Q&A
W5	Reference Kinematics	Lectures, Homework, Q&A
W6	Properties of Rotation Matrices	Lectures, Homework, Q&A
W7	Velocity Equations	Lectures, Homework, Q&A
W8	Acceleration Equations	Lectures, Homework, Q&A
W9	Midterm Examination	Open-Book Midterm Exam.
W10	Generalized Coordinates and Kinematic Constraints	Lectures, Homework, Q&A
W11	Degree of Freedom and Generalized Coordinate Partition	Lectures, Homework, Q&A
W12	Virtual Work and Generalized Forces	Lectures, Q&A
W13	Mechanics of Deformable Bodies	Lectures, Homework, Q&A
W14	Floating Frame of Reference Formulation	Lectures, Homework, Q&A
W15	Equations of Motion	Lectures, Q&A
W16	Finite Element Formulation	Lectures, Homework, Q&A
W17	Large Deformation Problems	Oral presentations for final reports
W18	Final Examination	Open-Book Midterm Exam.

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	半導體元件與製程 Semiconductor Devices and Processes	授課教師 Instructor	方昭訓 Fang,Jau-Shiung
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book： Introduction to Semiconductor Manufacturing Technology (<u>100%</u> 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)<u>100%</u></p> <p>3.其他補充說明 Others：</p>		

雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：100 %以上英文試題，學生以英文答題 50%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation <input type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	Brief History, Overview
W2	Introduction to IC Fabrication	Introduction, Yield Clean Room
W3	Semiconductor Basics	Semiconductor and Basic Devices
W4	Wafer manufacturing	Crystal Structure and Defects
W5	Thermal Processes	Hardware and Diffusion
W6	Photolithography	PR, Lithography Technology
W7	Plasma Basics	Plasma
W8	Ion Implantation	Ion implantation basics
W9	Midterm Exam.	Midterm Examination
W10	Etch	Etch Basics and wet and Dry Etch
W11	CVD and Dielectric Thin Film	CVD Thin Films
W12	Metallization	Sputter and Electrochemical Deposition
W13	CMP	CMP Hardware and CMP Basics
W14	Process Integration	IC Fabrication
W15	CMOS Processes	How to integrate a CMOS processes
W16	Discussion and Presentation	Discussion and Presentation
W17	Discussion and Presentation	Discussion and Presentation
W18	Final Exam.	Final Examination

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	Thermodynamics of Solids 固態熱力學	授課 教師 Instructor	Tsai, Chau-Yi 蔡朝伊
教學簡要說明			
1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.			
2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.			
課程教材 Material	1.指定課本書名 Book：_Gakell, David R.,Laughlin, David E., “Introduction to the Thermodynamics of Materials”__ (100% 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)100% 3.其他補充說明 Others：		
雙語教學 方式 (可多選， 或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：		
成績評量 方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：_100%以上英文試題，學生以英文答題_20_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：		
課程進度 Course Outline			
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities	
W1	Lecture 1 / Introduction	introduction to Thermodynamics of solid (what is Thermodynamic and why study it ?)	
W2	Lecture 2 / Introduction	introduction to Thermodynamics of solid (system, state, function, path and EoS)	
W3	Lecture 3 / the first law	the first law of Thermodynamics	

		(work, heat, first law equation and physical meaning)
W4	Lecture 4 / the first law	the first law of Thermodynamics (enthalpy, heat capacity, variety of processes)
W5	Lecture 5 / the first law	the first law of Thermodynamics (applications and calculations)
W6	Lecture 6 / the second law	the second law of Thermodynamics (why need a second law, spontaneous, reversible processes)
W7	Lecture 7 / the second law	the second law of Thermodynamics (definition and physical meaning of entropy and the second law)
W8	Lecture 8 / the second law	the second law of Thermodynamics (heat engines, applications and calculations)
W9	Mid-term exam	Mid-term exam
W10	Lecture 9 / Auxiliary functions	Auxiliary functions (why need auxiliary functions in Thermodynamics, definition and derivation of 5 auxiliary functions)
W11	Lecture 10 / Auxiliary functions	Auxiliary functions (spontaneous conditions, 4 sets of fundamental equations)
W12	Lecture 11 / Auxiliary functions	Auxiliary functions (derivation of Maxwell equations and further relationships)
W13	Lecture 12 / Auxiliary functions	Auxiliary functions (applications and calculations)
W14	Lecture 13 / the third law	the third law of Thermodynamics (definition and physical meaning of the third law)
W15	Lecture 14 / the third law	the third law of Thermodynamics (applications and calculations)
W16	Lecture 15 / Oral presentation (I)	Topic oral presentation (I)
W17	Lecture 16 / Oral presentation (II)	Topic oral presentation (II)
W18	Final exam	Final exam

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	飛機維修實務 Aircraft Maintenance Practice	授課教師 Instructor	王士嘉 Wang, Shih-Chia
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

課程教材 Material	1.指定課本書名 Book: _Aircraft Maintenance & Repair (_100____% 英文內容 Percentage in English) 2.自製教材 Self-made Materials: 採用英文之比例(Percentage in English)_100____% 3.其他補充說明 Others:	
雙語教學方式 (可多選, 或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others:	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考: _100____%以上英文試題, 學生以英文答題____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告: _100____%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading):	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Course Preparation	Let's roll
W2	Maintenance Perspective	Aircraft maintenance perspective
W3	Illustrated Parts Catalogue	Look for aircraft Parts
W4	Safety technique demonstration	Aircraft festered skill demonstration
W5	Fuel Pump Operation	Schematics knowledge shown
W6	Lacing Cord	Wiring Bundle skill
W7	1st Term Evaluation	Skill Team test
W8	Aircraft Fuel System	Aircraft Fuel System Lecture
W9	Fuel System -1	Aircraft Fuel System Lecture
W10	Fuel System -2	Aircraft Fuel System Lecture
W11	Fuel System -3	Aircraft Fuel System Lecture
W12	Fuel System -4	Share with students and ask for feedback
W13	2ndTest	Written Test
W14	Human Factor-1	Team Presentation Contest
W15	Human Factor-2	Share with students and ask for feedback
W16	Human Factor-3	From Human Factor point of view lecture
W17	Big5 presentation	Oral Presentation

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	航空品保與驗證 Certification and Quality Assurance in Aviation Industry	授課教師 Instructor	林中彥 Lin, Chung-Yan
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：_____（_____ % 英文內容 Percentage in English）</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_90_%</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input checked="" type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others：</p>		
成績評量方式 Grading	<p><input type="checkbox"/> 期中/期末考：_100_%以上英文試題，學生以英文答題_50_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>英文期中/期末報告：_50_%以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報（含 QA 問答）20 分鐘以上（一般科系專業課、碩博專業課程必須包含此評量方式） English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>		
課程進度 Course Outline			
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities	
W1	Introduce to Aviation Quality Assurance	Lecture	

W2	Introduce to Aviation Quality Assurance	Lecture
W3	Aviation Quality Assurance Regulation	Lecture and discussion about the topic of Students Presentation
W4	Aviation Quality Assurance Regulation	Lecture and discussion about the topic of Students Presentation
W5	Introduce to Aviation Certification and Students Presentation	Classroom Lecture and Students Presentation
W6	Introduce to Aviation Certification and Students Presentation	Classroom Lecture and Students Presentation
W7	Introduce to FAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation
W8	Mid-Term exam	Mid-Term Exam
W9	Introduce to FAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation
W10	and Students Presentation	Classroom Lecture and Students Presentation
W11	Introduce to CAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation
W12	LSA Certification and Students Presentation	Classroom Lecture and Students Presentation
W13	LSA Certification and Students Presentation	Classroom Lecture and Students Presentation
W14	UAV Certification and Students Presentation	Classroom Lecture and Students Presentation
W15	UAV Certification and Students Presentation	Classroom Lecture and Students Presentation
W16	eVTOL Certification and Students Presentation	Classroom Lecture and Students Presentation
W17	eVTOL Certification and Students Presentation	Classroom Lecture and Students Presentation
W18	Final Exam	Final Exam

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	航空品保與驗證 Certification and Quality Assurance in Aviation Industry	授課教師 Instructor	林中彥 Lin, Chung-Yan
教學簡要說明			
3.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.			
4.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.			

課程教材 Material	4.指定課本書名 Book : _____ (_____% 英文內容 Percentage in English) 5.自製教材 Self-made Materials : 採用英文之比例(Percantage in English)_90_% 6.其他補充說明 Others :
雙語教學方式 (可多選, 或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input checked="" type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others :
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考 : _100_%以上英文試題, 學生以英文答題_50_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告 : _50_%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading):

課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduce to Aviation Quality Assurance	Lecture
W2	Introduce to Aviation Quality Assurance	Lecture
W3	Aviation Quality Assurance Regulation	Lecture and discussion about the topic of Students Presentation
W4	Aviation Quality Assurance Regulation	Lecture and discussion about the topic of Students Presentation
W5	Introduce to Aviation Certification and Students Presentation	Classroom Lecture and Students Presentation
W6	Introduce to Aviation Certification and Students Presentation	Classroom Lecture and Students Presentation
W7	Introduce to FAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation
W8	Mid-Term exam	Mid-Term Exam
W9	Introduce to FAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation
W10	and Students Presentation	Classroom Lecture and Students Presentation
W11	Introduce to CAA Type Certification and Students Presentation	Classroom Lecture and Students Presentation

W12	LSA Certification and Students Presentation	Classroom Lecture and Students Presentation
W13	LSA Certification and Students Presentation	Classroom Lecture and Students Presentation
W14	UAV Certification and Students Presentation	Classroom Lecture and Students Presentation
W15	UAV Certification and Students Presentation	Classroom Lecture and Students Presentation
W16	eVTOL Certification and Students Presentation	Classroom Lecture and Students Presentation
W17	eVTOL Certification and Students Presentation	Classroom Lecture and Students Presentation
W18	Final Exam	Final Exam

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	數位影像處理實務 Application for Digital Image Processing	授課教師 Instructor	李廣齊 Lee,Kuang-Chyi
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：<u>RC Gonzalez, RE Woods & SL Eddins, Digital Image processing using MATLAB, McGraw Hill (100% 英文內容 Percentage in English)</u></p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>≥70%</u></p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input type="checkbox"/>小組討論 Group Discussion <input type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>		

<p>成績評量方式 Grading</p>	<p> <input checked="" type="checkbox"/> 期中/期末考： <u>70</u> %以上英文試題，學生以英文答題 <u>50</u> %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. </p> <p> <input type="checkbox"/> 英文期中/期末報告： _____%以英文表達。 The percentage of using English in midterm or final oral presentation </p> <p> <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have </p> <p> <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)： </p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction to image processing	Oral
W2	Introduction to OpenCV(I)	Oral & Practice
W3	Introduction to OpenCV(II)	Oral & Practice
W4	Image processing toolbox in Matlab	Oral & Practice
W5	Image Convolution	Oral & Practice
W6	Noise Removing	Oral & Practice
W7	Edge Detection	Oral & Practice
W8	Contour Following method	Oral & Practice
W9	Midterm Exam	
W10	Introduction to AOI	Oral
W11	Hough Transform method	Oral & Practice
W12	Least square method	Oral & Practice
W13	Straightness	Oral & Practice
W14	Roundness	Oral & Practice
W15	Ellipticity(I)	Oral & Practice
W16	Ellipticity(II)	Oral & Practice
W17	Final Project Presentation	Oral
W18	Final Exam	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	自動化無人載具系統 Autonomous Unmanned Vehicle System	授課教師 Instructor	李孟澤 Lee, Meng-Tse
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book: _____ (% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials: 採用英文之比例(Percentage in English) <u>80</u> %</p> <p>3.其他補充說明 Others:</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others:</p>		
成績評量方式 Grading	<p><input type="checkbox"/> 期中/期末考: _____%以上英文試題，學生以英文答題_____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input type="checkbox"/> 英文期中/期末報告: _____%以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading):</p>		
課程進度 Course Outline			
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities	
W1	Part-1: System Engineering	Introduction to "System Engineering"	
W2			
W3	Part-2: The Unmanned Vehicles	History & Applications of AUVS	
W4	Part-3: UAV	Unmanned Aerial Vehicle	

W5		
W6	Part-4: UGV	Unmanned Ground Vehicle
W7		
W8	Part-5: UMV	Unmanned Maritime Vehicle
W9	Mid-term Exam	
W10	Part-6: The Subsystems of an Autonomous Unmanned Vehicle	Subsystems of an Autonomous Unmanned Vehicle
W11	Part-7: Case Study	Design an Autopilot System for UAV
W12		
W13	Part-8: HIL & SIL	Hardware/Software in the Loop Simulation
W14	Part-9: Navigation(I)	Inertial Navigation System
W15	Part-10: Navigation(II)	Global Positioning System (GPS)
W16		
W17	Part-11: Sensors	Sensors in UV system
W18	Final Exam	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱 (中) 課程名稱 (英) Course title in Mandarin and English	電動車概論 Introduction to Electric vehicles	授課教師 Instructor	蔡宏峰 Tsai,Hung-Yih
教學簡要說明			
1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.			
2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.			
課程教材 Material	1.指定課本書名 Book：_____ (_____% 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>100</u> % 3.其他補充說明 Others：		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input checked="" type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：		

成績評量方式 Grading	<p>■期中/期末考： <u>100</u> %以上英文試題，學生以英文答題 <u>30</u> %。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p>
	<p>■英文期中/期末報告： <u>100</u> %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p>
	<p>■全英語口頭簡報（含 QA 問答）20 分鐘以上（一般科系專業課、碩博專業課程必須包含此評量方式）</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p>
	<p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>

課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Course outline	Course overview and features
W2	Brief history of the Electric vehicles	This chapter reviews the problems of air pollution, gas emissions causing global warming, and petroleum resource depletion. Electric vehicles also are receiving great attention, and development again. While electric vehicles are often considered a modern technology, they have actually been around for quite a long time: more than 100 years, in fact. We will also briefly reviews the history of EVs, HEVs, and fuel cell technology.
W3	The electric vehicle transmission system	In this chapter, we will introduce the electric vehicle powertrain and the transmission of hybridization, and present the efficiency, fuel consumption, and range factors. Introducing why motivating the shift to electrification and the hybridization of the automotive powertrain.
W4		
W5		
W6	Vehicle Dynamics	In this chapter, in considering a new source of energy for vehicles, it's important to understand how much energy is required to move a vehicle. We investigate the power and energy requirements of the automotive powertrain by applying the fundamentals of physics to the vehicle's motion. The basic vehicle load forces of aerodynamic drag, rolling resistance, and climbing
W7		

W8		resistance are considered. Vehicle acceleration is then quantified. This description enables the classmate to quantify the power and energy requirements of a vehicle, and to convert these vehicle requirements of speed and accelerating or braking power into mechanical specifications of torque and speed for the electric motor.
W9	Motor	In this chapter, we'll explore the basic electromagnetic laws that enable motors to function, including the Lorentz Force Law, and Coulomb's Law. Then we will proceed to learn about a variety of different types of motors, including brushed DC motors, brushless DC and AC motors (a.k.a. synchronous motors), reluctance motors, and induction motors. In order to explain induction motors, we will also need to understand Faraday's Law, which will further influence our understanding of the other types of motors, as well as enabling them to run backward and generate energy, allowing for regenerative braking.
W10		
W11	Batteries	In order for our electric vehicle motor to run, most often, this electricity is stored in a battery. In this chapter, we will take a look at the key components and characteristics of electric vehicle batteries, also known as traction batteries. Because nearly every electric vehicle on the market today uses lithium-ion batteries, we will focus on lithium-ion batteries is introduced.
W12		
W13	Group Discussion Report	
W14	Group Discussion Report	
W15	Group Discussion Report	
W16	Group Discussion Report	
W17	Group Discussion Report	
W18	Group Discussion Report	

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	積體光學 Integrated Optics	授課教師 Instructor	莊為群 Wei-Ching, Chuang
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教學簡要說明

1.請依照授課班級英文分級程度規劃課程計畫書。

Please design the course plan by following the English using percentage of the course English level.

2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。

Please state bilingual instructor's teaching weeks and hours in course outline section.

課程教材 Material	1.指定課本書名 Book：Integrated Optics (100% 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 3.其他補充說明 Others：
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____ %以英文表達。 The percentage of using English in midterm or final oral presentation <input type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：

課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introductions	Lecturing
W2	Optical waveguide modes	Lecturing
W3	Optical waveguide modes	Lecturing
W4	Theory of optical waveguides	Lecturing
W5	Waveguide fabrication techniques	Lecturing

W6	Waveguide fabrication techniques	Lecturing
W7	Polymer and fiber integrated optics	Lecturing
W8	Losses in optical waveguides	Lecturing
W9	Midterm Examination	
W10	Losses in optical waveguides	Lecturing
W11	Waveguide input and output couplers	Lecturing
W12	Coupling between waveguides	Lecturing
W13	E-O modulators	Lecturing
W14	E-O modulators	Lecturing
W15	A-O modulators	Lecturing
W16	A-O modulators	Lecturing
W17	Semiconductor Lasers	Lecturing
W18	Final Examination	Lecturing

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	光電檢測 Photonic Detection	授課 教師 Instructor	黃鴻基 Hung-Ji, Huang
教學簡要說明			
1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.			
2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.			
課程教材 Material	1.指定課本書名 Book：___ (___ 100 % 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)___ 100 ___ % 3.其他補充說明 Others：		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：		

成績評量方式 Grading	<input type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.
	<input type="checkbox"/> 英文期中/期末報告：_____ %以英文表達。 The percentage of using English in midterm or final oral presentation
	<input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have
	<input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：

課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction of photonic sensing	Selection of group report topics
W2	Introduction of single-board microcontroller	Arduino & Raspberry Pi
W3	System design- layout	
W4	System design- Mechanical parts	Introduction of FreeCAD
W5	System design- Mechanical parts	Introduction of FreeCAD
W6	System design Electronics basic	
W7	Midterm report	Proposal of the group works
W8	Midterm report	Proposal of the group works
W9	Temperature & humidity sensing	Using a single-board microcontroller
W10	Magnetic field sensing	Using a single-board microcontroller
W11	Multiple LED transmission spectrometer	Using a single-board microcontroller
W12	Detection of Brewster's angle	Using a single-board microcontroller
W13	Imaging of interference pattern	Using a single-board microcontroller
W14	Low-frequency oscilloscope	Using a single-board microcontroller
W15	Low-frequency lock-in measurement	Using a single-board microcontroller
W16	Low-frequency lock-in measurement	Using a single-board microcontroller
W17	Final report	Presentation of the group works
W18	Final report	Presentation of the group works

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	科技英文 Science and Technology English	授課教師 Instructor	吳森統 Sen-Tung, Wu
教學簡要說明			

<p>3.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>4.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>		
課程教材 Material	<p>1. 指定課本書名 Book：_____ (_____%英文內容 Percentage in English)</p> <p>2. 自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>90</u> %</p> <p>3. 其他補充說明 Others：</p>	
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input checked="" type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>	
成績評量方式 Grading	<p><input type="checkbox"/> 期中/期末考：_____%以上英文試題，學生以英文答題_____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/> 英文期中/期末報告：_100_%以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Outline and grading rules/Skills of self-introduction	Guidelines and key points for self-introduction
W2	Reading skills of international journals	Methods and reading skills for science papers. Including the browsing skills for abstract
W3	Searching and browsing skills of international journal websites	To direct students for using IEEE Xplore tool. How to filter the paper for journals or conferences
W4	Idea generator-Implementation of mind map	To explain the expanding concept of mind map. After determining the topic, the supporting ideas can be derived.
W5	Editing skills for English presentation slides	To deliver the basic structure of presentation. Time distribution for outline(introduction), main

		points(body), and conclusion.
W6	Simulation and implementation of English poster presentation of conferences	Free topic related to science and technology. Make a presentation by poster formation.
W7	Simulation and implementation of English poster presentation of conferences	Follow the oral presentation standards for conference regular rules. For examples, time arrangement, Q and A parts.
W8	Listening practice of English native speakers' speeches	To practice listening skills by English native speakers with public presentation videos.
W9	Listening practice of English non-native speakers' speeches	To focus on non-native English foreigners, due to the accent from different countries, it will be helpful to catch the key point from the talks.
W10	English oral presentation for free topics (midterm)	To combine with the English presentation skills, ppt editing guide line, and the flow of conference oral rules. Each student should reveal the learning performance.
W11	English resume writing practices	To editing the resume is an important self-introduction with paper format. The teacher will explain the methods and schemes of a good resume format.
W12	Simulation and practice for foreign company interview 模擬外商面試場合	Students are divided into groups and pretended as interviewee and interviewer individually. Teachers will give some guidelines and directions for interviewing practices
W13	Simulation and practice for foreign companies group discussions	When we start to work for a job, team work is a basic principle to work together from different departments. Therefore, team meeting is a necessary scenario for mass production of a project in foreign companies.
W14	Simulation and communication skills for foreign companies con-calls	The content of the lesson is the extension of last week. During the meeting for the customers, conference-call (Con-call) is popular for distanced meeting. Hence, con-call practice will be the topic of this week.
W15	English Images and characters communications prtactices	Each student has to determine a vocabulary or image, try to explain the answer on card. This practice helps to describe the object in English.

W16	To tell a story with random pictures-Free talks	The purpose of this lesson is to inspire students' imaginations. It will be started from some interesting pictures. The team have to connect all the selected pictures for creating a logical story. This helps to increase the ability of free talk and oral skills.
W17	Listening and lyrics practice with English songs	The students are divided into groups. The teacher will play some English POP songs slowly. They can discuss the lyrics from the played songs for practicing listening ability. Try to organize the complete lyrics of the entire song for fun.
W18	Electrical engineering theory lecturing with foreign students in English	All the interviewing procedure needs to be recorded. The teaching interaction with foreign students is the final-term of this course. Q and A part is necessary for the end of the recorded video. All the visual aids are welcome to make the conversation successful.

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	FPGA 電路設計 FPGA System Design	授課教師 Instructor	宋啟嘉 教授 Prof. Dr.-Ing. Chi-Chia Sun
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>This course is designed for graduate students who are interested in advanced FPGA design n concept, design methodology, and basic concept of VLSI design. In the meantime, several Labs about the Xilinx Vivado tutorials will be demonstrated. After that, several lectures with the related topics to ZYNQ FPGA development kits will be given. Of course, we will select some state-the-art researches for computational efficient algorithm in FPGA/ARM implementation and these topics will be assigned as a small colloquium for students. At the end, graduate students shall present their final projects and its implementation on ZYNQ FPGA.</p> <ul style="list-style-type: none"> ● 100% Lecture in English ● CEF-B2 Level ● 本課開放電資學院外籍生修課，過往約台灣學生外籍生各半 <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

無，授課教師本人已具備有全英授課能力 CEF-C1 Level

課程教材 Material	1.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>100</u> %
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：
成績評量方式 Grading	<input type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告： <u>100</u> %以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：

課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction of VLSI and FPGA	Lecture
W2		High Level Synthesis Lab1
W3		Lecture
W4	Challenges in VDSM and 3D-IC technology for FPGA	Lecture
W5		Lecture
W6		Lecture
W7	High Level Synthesis	High Level Synthesis Lab2
W8		High Level Synthesis Lab3
W9	Midterm	Oral Report
W10	MPSOC (ARM-FPGA) Introduction	Lecture
W11		Lecture
W12		High Level Synthesis Lab4
W13	Colloquium	Recent FPGA paper study
W14		Recent FPGA paper study
W15	Collaborative Teaching	Xilinx Engineer Lecure
W16	PBL Project	Group Final Project
W17		Group Final Project

W18	Final Term	Oral Report
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國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	嵌入式系統 Embedded System	授課教師 Instructor	蘇暉凱 Su, Hui-Kai
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教學簡要說明

1.請依照授課班級英文分級程度規劃課程計畫書。

Please design the course plan by following the English using percentage of the course English level.

2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。

Please state bilingual instructor's teaching weeks and hours in course outline section.

課程教材 Material	<p>1.指定課本書名 Book：_____ (_____% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>100</u> %</p> <p>3.其他補充說明 Others：</p>
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雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A</p> <p><input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input checked="" type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others：</p>
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成績評量方式 Grading	<p><input checked="" type="checkbox"/> 期中/期末考：<u>100</u> %以上英文試題，學生以英文答題 <u>10</u> %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/> 英文期中/期末報告：<u>100</u> %以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
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W1	Introduction to Embedded Computing	Lecturing Introduction to Embedded Computing
W2	Introduction to Embedded Computing	Lecturing Introduction to Embedded Computing
W3	Instruction Sets Lab1:Linux Installation	Lecturing Instruction Sets Experiment Lab1:Linux Installation
W4	Instruction Sets Lab1:Linux Installation	Lecturing Instruction Sets Experiment Lab1:Linux Installation
W5	Linux Diver and Application Programming	Lecturing Linux Diver and Application Programming
W6	Linux Diver and Application Programming Lab2: Diver and Application Programming for Embedded System	Lecturing Linux Diver and Application Programming Experiment Lab2: Diver and Application Programming for Embedded System
W7	Linux Diver and Application Programming Lab2: Diver and Application Programming for Embedded System	Lecturing Linux Diver and Application Programming Experiment Lab2: Diver and Application Programming for Embedded System
W8	Linux Diver and Application Programming Lab2: Diver and Application Programming for Embedded System	Lecturing Linux Diver and Application Programming Experiment Lab2: Diver and Application Programming for Embedded System
W9	Midterm	
W10	ROS Introduction	Lecturing ROS Introduction
W11	ROS Implementation Lab3: Embedded ROS	Lecturing ROS Implementation Experiment Lab3: Embedded ROS
W12	Reinforcement Learning – DQN (Deep Q-Learning) Lab3: Embedded ROS	Lecturing Reinforcement Learning – DQN (Deep Q-Learning) Experiment Lab3: Embedded ROS
W13	Reinforcement Learning – DQN (Deep Q-Learning) Lab3: Embedded ROS	Lecturing Reinforcement Learning – DQN (Deep Q-Learning) Experiment Lab3: Embedded ROS

W14	Final Project	Practice and discussion
W15	Final Project	Practice and discussion
W16	Final Project	Practice and discussion
W17	Final Project	Practice and discussion
W18	Final Project	Project Presentation

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	Introduction to Information Engineering 資訊工程導論	授課教師 Instructor	Tsai,Po-hsiang 蔡柏祥
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：_Computer Science an overview, 13th Edition (100% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)100%</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p> <input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A <input checked="" type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching <input checked="" type="checkbox"/>分組報告 Group Report <input type="checkbox"/>其他方式說明 Others： </p>		
成績評量方式 Grading	<p> <input type="checkbox"/> 期中/期末考：_____%以上英文試題，學生以英文答題_____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)： </p>		

課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Syllabus	Syllabus
W2	English Oral Presentation Skills	Report Structure; Effective Paraphrasing; Avoidance of Plagiarism
W3	English Oral Presentation Skills	Academic Oral Presentation; Organization
W4	Introduction Computer Science	Overview; History of Algorithms and Computing
W5	Programming Languages	Historical Perspective; Traditional Programming Concepts
W6	Programming Languages	Procedural Units; Language Implementation
W7	Programming Languages	Object Oriented Programming; Programming Concurrent Activities
W8	Software Engineering	Software Life Cycle; Software Engineering Methodologies
W9	Mid-Term	
W10	Software Engineering	Modularity; Tools of the Trade
W11	Software Engineering	Testing; Documentation
W12	Data Abstractions	Data Structures; Implementing Data Structures
W13	Data Abstractions	Implementing Data Structures; Customized Data Types
W14	Data Abstractions	Classes and Objects
W15	Database System	Database Fundamentals; Relational Model
W16	Database System	Relational Model
W17	Database System	Maintaining Database Integrity
W18	Final-Term	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	微處理機實習 Microprocessor Lab	授課教師 Instructor	陳國益 Kuo-Yi Chen
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：Embedded Systems with ARM Cortex-M Micro controllers in Assembly Language and CD (100% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)50%</p> <p>3.其他補充說明 Others：</p>		

雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A <input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：50%以上英文試題，學生以英文答題 50%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	NUC140 Cortex MOintroduction	ARM Cortex MO Introduction
W2	NUC140 deve'lopment	NUC140 and Keil C and project create
W3	SPI experiments	SPI control Flash
W4	Watchdog experiments	The timer as watchdog to protect MCU
W5	TSR experiments	TSR lab project
W6	Interrupter experiments	Interrupter lab project
W7	SRAM experiments	SRAM read/write operation
W8	Buzzer experiments	Buzzer operation
W9	File R/W experiments	Local file read/write operation
W10	Mid term	
W11	GPIO application	GP IO usage and PIN
W12	LCD experiments	LCD usage and LCD project
W13	UART experiments	UART protocol
W14	ADC experiments	ADC converter • NuMicro ADC
W15	PWM experiments	PWM controller with motor and buzzer
W16	Timer experiments	Cortex MO MCU Interrupt Vector, Timer, WatchDog
W17	I2C experiments	I2C access EEPROM
W18	Final term	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	作業系統 Operation System	授課教師 Instructor	黃世昌 Huang,Shih-Chang
<p style="text-align: center;">教學簡要說明</p> <p>1. 請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2. 如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1 指定課本書名 Book：Abraham Silberschatz et.al. Operating System Concepts, 10th Edition",WILLY, ISBN: 1119454085 (<u>100%</u> 英文內容 Percentage in English)</p> <p>2 自製教材 Self-made Materials：採用英文之比例(Percantage in English)<u>80</u> %</p> <p>3 其他補充說明 Others：NA</p>		
雙語教學方式 (可多選，或 簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>		
成績評量方式 Grading	<p><input checked="" type="checkbox"/> 期中/期末考： 90_%以上英文試題，學生以英文答題 30-60__%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin</p>		
課程進度			

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Overview	Overview OS
W2	Introduction	Introduction OS
W3	System structures	System structures
W4	Process concept	Process concept
W5	Multithreaded programming	Multithreaded programming
W6	Process scheduling	Process scheduling
W7	Synchronization	Synchronization
W8	Deadlocks	Deadlocks
W9	Midterm	Midterm
W10	Memory-management strategies	Memory-management strategies
W11	Virtual-memory management	Virtual-memory management
W12	File system	File system
W13	File system	File system
W14	Implementing file systems	Mass-Storage Systems
W15	Implementing file systems	I/O Systems
W16	Secondary-storage structure	System Protection
W17	Secondary-storage structure	System Security
W18	Final	Final

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	中文 Mandarin : 智慧型最佳化演 算法英文 English : Intelligent Optimization Algorithm	授課教師 Instructor	鄭錦聰 Jin-Tsong Jeng
<p style="text-align: center;">教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名Book：_____ (_____% 英文內容Percentage in English)</p> <p>2.自製教材Self-made Materials：採用英文之比例(Percentage in English)<u>100%</u></p> <p>3.其他補充說明 Others：“Optimization Toolbox™ User's Guide R2022a,” Mathworks, 2022</p>		
雙語教學方式 (可多選，或 簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學Collaborative Teaching</p> <p><input type="checkbox"/> 分組報告 Group Report</p> <p><input checked="" type="checkbox"/> 其他方式說明 Others：Finally report and presentation</p>		
成績評量方式 Grading	<p><input checked="" type="checkbox"/> 期中/期末考： 100_____%以上英文試題，學生以英文答題 外籍生100_____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/> 英文期中/期末報告： 100_____%以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報(含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and</p>		
課程進度 Course			

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	1/Introduction to Engineering Optimization	Syllabus Introduction to this course
W2	1/Introduction to Engineering Optimization	Introduction to the concept of intelligent optimization algorithm Overview of machine learning and deep learning Introduction to research direction on this course
W3	1/Introduction to Engineering Optimization	Mathematical optimization from Wikipedia Optimization software from Wikipedia
W4	2/Fundamentals of Optimization Techniques	Introduction to concept of optimization What is optimization? Mathematical background for optimization
W5	2/Fundamentals of Optimization Techniques	Unconstrained optimization problems Constrained optimization problems
W6	2/Fundamentals of Optimization Techniques	Overview and classification of optimization methods Lagrange multiplier method Nonlinear programming optimization problems
W7	3/Optimization Techniques	Derive of deterministic optimization techniques Derive of single variable
W8	3/Optimization Techniques	Derive of multivariable optimization techniques Random methods for
W9		Midterm oral presentation
W10	4/Optimization with Matlab	Nonlinear Programming with Matlab Optimization with Matlab
W11	5/Intelligent Optimization	Metaheuristic global optimization algorithms: GA, EC, PSO, ACO, SA
W12	5/Intelligent Optimization	Machine learning (SVM, LS-SVM), Introduction to Deep Learning Neural Networks to Deep Neural Networks (DNN)
W13	5/Intelligent Optimization	Introduction to learning behaviors Tips for training deep networks Adaptive learning rate for DNN and convolutional neural network (CNN)
W14	5/Intelligent Optimization	Transfer learning for deep learning: an overview Network-based case transfer learning Application
W15		Midterm exam
W16		Final oral presentation
W17		Final oral presentation
W18		Final oral presentation

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	巨量資料分析 Big Data Analysis	授課教師 Instructor	江季翰 Ji-Han Jiang
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：Big Data Analytics for Cloud, IoT and Cognitive Computing, First Edition. Kai Hwang and Min Chen (<u>100%</u> 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)<u>100%</u></p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p>■教材講述 Lecturing □小組討論 Group Discussion ■口頭問答 Q&A</p> <p>■問題導向 Problem Based Learning □協同教學 Collaborative Teaching</p> <p>■分組報告 Group Report</p> <p>□其他方式說明 Others：</p>		

成績評量方式 Grading	<p>■期中/期末考：_100_%以上英文試題，學生以英文答題_20_%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■英文期中/期末報告：_20_%以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p>■全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes</p> <p>(Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	<ul style="list-style-type: none"> What is Big Data: many Vs Open Data Big Data Analysis Tools
W2	Getting to Know Your Data	<ul style="list-style-type: none"> Data Objects and Attribute Types Basic Statistical Descriptions of Data
W3	Getting to Know Your Data	<ul style="list-style-type: none"> Data Visualization Measuring Data Similarity and Dissimilarity
W4	Data Preprocessing	<ul style="list-style-type: none"> Data Preprocessing: An Overview Data Quality Major Tasks in Data Preprocessing
W5	Data Preprocessing	<ul style="list-style-type: none"> Data Cleaning Data Integration
W6	Data Preprocessing	<ul style="list-style-type: none"> Data Reduction Data Transformation and Data Discretization

W7	Mining Frequent Patterns, Analytical Processing	<ul style="list-style-type: none"> • Data Warehouse: Basic Concepts • Data Warehouse Modeling: Data Cube and OLAP • Data Warehouse Design and Usage
W8	Cases Study 1	<ul style="list-style-type: none"> • (Problem Based Learning) • Analysis Tools: R & Python • Analyzing 1.1 Billion NYC Taxi and Uber Trips
W9	Midterm	Midterm exam
W10	Mining Frequent Patterns, Association, and Correlations	<ul style="list-style-type: none"> • Frequent Itemset Mining Methods • Analysis Tools: R & Python • (Problem Based Learning)
W11	Mining Frequent Patterns, Association, and Correlations	<ul style="list-style-type: none"> • Which Patterns Are Interesting? Pattern Evaluation Methods • Analysis Tools: Introduction to ELK stack
W12	Classification Basic Concepts	<ul style="list-style-type: none"> • Decision Tree Induction • Bayes Classification Methods • Rule-Based Classification
W13	Classification Advanced Methods	<ul style="list-style-type: none"> • Model Evaluation and Selection • Techniques to Improve Classification Accuracy: Ensemble Methods
W14	Cluster Analysis Basic Concepts and Methods	<ul style="list-style-type: none"> • Cluster Analysis: Basic Concepts • Partitioning Methods • Hierarchical Methods
W15	Advanced Cluster Analysis	<ul style="list-style-type: none"> • Density-Based Methods • Grid-Based Methods • Evaluation of Clustering
W16	Outlier Detection	<ul style="list-style-type: none"> • Outlier and Outlier Analysis & Detection Methods • Statistical Approaches

		<ul style="list-style-type: none"> Proximity-Base Approaches Clustering-Base Approaches Classification Approaches
W17	English Oral presentation	Final Project Oral Report and Discussion (in English)
W18	English Oral presentation	Final Project Oral Report and Discussion (in English)

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	物聯網 Internet of Things	授課教師 Instructor	簡銘伸 Jian,Ming-Shen
<p style="text-align: center;">教學簡要說明</p> <ul style="list-style-type: none"> 請依照授課班級英文分級程度規劃課程計畫書。 <p>Please design the course plan by following the English using percentage of the course English level.</p> <ul style="list-style-type: none"> 如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<ul style="list-style-type: none"> 指定課本書名 Book：_____（_____ % 英文內容 Percentage in English） 自製教材 Self-made Materials：採用英文之比例(Percentage in English) __80__ % 其他補充說明 Others： 		

雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	■教材講述 Lecturing □小組討論 Group Discussion □口頭問答 Q&A □問題導向 Problem Based Learning □協同教學 Collaborative Teaching ■分組報告 Group Report □其他方式說明 Others：	
成績評量方式 Grading	• 期中/期末考：_100_%以上英文試題，學生以英文答題_____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. • 英文期末報告：__100__%以英文表達。 The percentage of using English in midterm or final oral presentation • 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have • 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	Basics of EPC Training (PPT)
W2	Electronic Product Code	Basics of EPC Training (PPT)
W3	Identification Keys	Basics of EPC Training (PPT)
W4	The Secrets of RFID	Basics of EPC Training (PPT)
W5	Benefits of EPC Applications	Basics of EPC Training (PPT)
W6	Technical Information – RFID Tags	Basics of EPC Training (PPT)

W7	Technical Information – Readers	Basics of EPC Training (PPT)
W8	Technical Information – EPCglobal Network	Basics of EPC Training (PPT)
W9	Exam	Online
W10	EPC Global Certification	EPC Certification Exam Training (PPT)
W11	Implementation – Examples of Projects	IoT_Learning (PPT)
W12	Internet of Things	IoT_Learning (PPT)
W13	Sensor Layer	IoT_Learning (PPT)
W14	Network Layer	IoT_Learning (PPT)
W15	Application Layer	IoT_Learning (PPT)
W16	Near Field Communication	IoT_Learning (PPT)
W17	EPC Global Certification	EPC Certification Exam Training (PPT)
W18	Exam	Online

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	圖形辨識 Pattern Recognition	授課教師 Instructor	林武杰 Wu-Ja Lin
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p>			

Please state bilingual instructor's teaching weeks and hours in course outline section.		
課程教材 Material	1.指定課本書名 Book：___ Pattern Recognition _____ (_100_% 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 3.其他補充說明 Others：	
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考：_100_%以上英文試題，學生以英文答題__60_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告：_100_%以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	Introduction to the Pattern Recognition
W2	Programming/Math. review	Background knowledge, including: matlab programming, linear algebra, calculus
W3		

W4		
W5	Bayes Decision Theory	<ul style="list-style-type: none"> ● Bayes Decision ● Discriminant functions and decision surface ● The nearest neighbor rule
W6		
W7	Linear Classifier	<ul style="list-style-type: none"> ● Linear discriminant function and decision hyperplanes ● The perceptron algorithm ● Least squares methods
W8		
W9	Midterm/exercises	Assessments
W10	Linear Classifier	<ul style="list-style-type: none"> ● Mean square estimation revisited ● Support vector machines
W11	Non-linear classifier	<ul style="list-style-type: none"> ● The XOR problem ● The two-layer perceptron ● Three layer perceptrons ● The backpropagation algorithm
W12		
W13	Clustering	<ul style="list-style-type: none"> ● Estimation of the number of clusters ● K-means clustering algorithm ● Divisive algorithms ● Agglomerative algorithms
W14		
W15	Paper presentation	Each student has to present papers of their field in English
W16		
W17	Project presentation	Each student has to present their project in English
W18		

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	物理 Physics	授課教師 Instructor	劉育松 Yu-Suang,Liu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：_____（_____ % 英文內容 Percentage in English）</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>60</u> %</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p>■教材講述 Lecturing ■小組討論 Group Discussion ■口頭問答 Q&A</p> <p>■問題導向 Problem Based Learning □協同教學 Collaborative Teaching</p> <p>■分組報告 Group Report</p> <p>□其他方式說明 Others：</p>		
成績評量方式 Grading	<p><input type="checkbox"/> 期中/期末考：_____ % 以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■ 英文期中/期末報告：_____ % 以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p>■ 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程)</p>		

	<p>必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading) :</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	preparation week	Introduction to lessons
W2	Ch1 Doing Physics	Basis of the SI system and how to deal with precision and uncertainty
W3	Ch2 Motion in a Straight Line	Introduction to kinematics- position, velocity, and acceleration
W4	Ch2 Motion in a Straight Line	Application of kinematics- position, velocity, and acceleration
W5	Ch3 Motion in Two and Three Dimensions	Quantities of motion in two and three dimensions described by vectors
W6	Ch4 Force and Motion	Force causes change in motion. Newton's 3 laws of motion
W7	Ch5 Using Newton's Laws	Introduction to Newton's laws of motion in three dimensions
W8	Ch5 Using Newton's Laws	The application of Newton's laws of motion in three dimensions
W9	midterm	Oral report of project proposal
W10	Ch6 Energy, Work, and Power	Introduction to energy, work, and power
W11	Ch6 Energy, Work, and Power	Applications of energy, work, and power
W12	Ch7 Conservation of Energy	Introduction to potential energy, and kinetic energy

W13	Ch7 Conservation of Energy	Applications of the conservation of mechanical energy
W14	Ch9 Systems of Particles	Introduction to systems consisting of many particles
W15	Ch9 Systems of Particles	Conservation of momentum and energy
W16	Ch10 Rotational Motion	The analogs of position, velocity, acceleration, force, mass between linear motion and rotational motion
W17	Ch11 Rotational Vectors and Angular Momentum	Describe rotational quantities as vectors. Introduce angular momentum and its relation to torques.
W18	final exam	Oral report of project design

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	資料探勘 Data Mining	授課教師 Instructor	李英聯 Ying-Lien Lee
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

<p>課程教材</p> <p>Material</p>	<p>1.指定課本書名 Book：Data Mining for Business Analytics: Concepts, Techniques and Applications in Python, 1st ed., Galit Shmueli, John Wiley & Sons, Inc. (100% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____%</p> <p>3.其他補充說明 Others：</p>	
<p>雙語教學方式</p> <p>(可多選，或簡述)</p> <p>Bilingual Teaching Strategies</p>	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input checked="" type="checkbox"/>其他方式說明 Others：實作課程 Hands-on sessions</p>	
<p>成績評量方式</p> <p>Grading</p>	<p><input checked="" type="checkbox"/> 期中/期末考：100%以上英文試題，學生以英文答題100%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input type="checkbox"/> 英文期中/期末報告：_____%以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報（含 QA 問答）20分鐘以上（一般科系專業課、碩博專業課程必須包含此評量方式）</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>	
<p>課程進度 Course Outline</p>		
<p>週次</p> <p>Week</p>	<p>單元/主題</p> <p>Unit/Topic</p>	<p>教學活動重點及教材內容</p> <p>Teaching Activities</p>
<p>W1</p>	<p>Introduction</p>	<p>Lecture on the overview of Data Mining, the tools we will be using, and the topics we will cover in the</p>

		course
W2	Data Visualization	Visualization techniques for data exploration
W3	Dimension Reduction (I)	Group presentation; Lecture on Dimension Reduction
W4	Dimension Reduction (II)	Group presentation; Lecture on Dimension Reduction
W5	Multiple Linear Regression	Group presentation; Lecture on Multiple Linear Regression
W6	k-Nearest Neighbors	Group presentation; Lecture on k-Nearest Neighbors
W7	The Naive Bayes Classifier	Group presentation; Lecture on Naive Bayes Classifier
W8	Classification and Regression Trees	Group presentation; Lecture on Trees
W9	Midterm exam	Students have to solve problems presented in a Jupyter Notebook
W10	Combining Methods	Group presentation; Lecture on Combining Methods
W11	Cluster Analysis	Group presentation; Lecture on Cluster Analysis
W12	Association Rules and Collaborative Filtering (I)	Group presentation; Lecture on Collaborative Filtering
W13	Association Rules and Collaborative Filtering (II)	Group presentation; Lecture on Collaborative Filtering
W14	Social Network Analytic	Group presentation; Lecture on Social Network Analytic
W15	Handling Time Series	Group presentation; Lecture on Time Series
W16	Regression-Based Forecasting	Group presentation; Lecture on Regression-Based Forecasting
W17	Text Mining	Group presentation; Lecture on Text Mining
W18	Final exam	Students have to solve problems presented in a Jupyter Notebook

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	模擬學 Simulation	授課教師 Instructor	胡智熊 Chih-Hsiung Hu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book: <u>Getting Started with AutoMod</u> (100 % 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials: 採用英文之比例 (Percentage in English) <u>100</u> %</p> <p>3.其他補充說明 Others:</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others:</p>		

<p>成績評量方式</p> <p>Grading</p>	<p>■期中/期末考：<u>100</u> %以上英文試題，學生以英文答題<u>100</u> %。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■英文期中/期末報告：<u>100</u> %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p>■全英語口頭簡報（含 QA 問答）20 分鐘以上（一般科系專業課、碩博專業課程必須包含此評量方式）</p> <p>English oral presentation including Q&A session at least 20 minutes</p> <p>(Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式（請說明中英文比例）Others (please state the proportion of Mandarin and English in grading) :</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Course Introduction	
W2	Simulation Introduction	The computer simulation approach
W3	Getting Started with AutoMod (GSWA) Chap 1	Principles of Simulation
W4	GSWA Chap 2, 3	Using the software/AutoMod concepts
W5	GSWA Chap 4	Introduction to AutoMod Syntax
W6	GSWA Chap 5	Process System Basics
W7	GSWA Chap 5, 7	Process System Basics Advanced Process System Features
W8	GSWA Chap 13	Indefinite Delays

W9	Midterm	Back programming skill test
W10	GSWA Chap 8	Basic Statistical Analysis Using AutoStat
W11	GSWA Chap 10	Intermediate Statistical Analysis
W12	Case Study 1	Convey & AGV System case
W13	Case Study 2	Supply chain case
W14	GSWA Chap 14	Additional Features
W15	GSWA Chap 15	Warmup Analysis Using AutoStat
W16	Simulation Methodology	Discrete Event Simulation- The three-phase approach
W17	Simulation Research Review	Research papers review
W18	Final Exam	Final Project presentation

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	公司理財 Corporate Finance	授課教師 Instructor	王若愚 Wang, Jo-Yu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

課程教材 Material	1.指定課本書名 Book： <u>GuerardJr2021Book_QuantitativeCorporateFinance</u> / by Guerard Jr., John B., and Gultekin, Mustafa. (2021) __ (100% 英文內容 Percentage in English) 圖書館電子書 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>100</u> % 3.其他補充說明 Others：	
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input checked="" type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input checked="" type="checkbox"/> 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考： <u>100</u> %以上英文試題，學生以英文答題 <u>100</u> %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input checked="" type="checkbox"/> 英文期中/期末報告： <u>100</u> %以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input checked="" type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：課堂討論	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction of the course 1. discounted cash flow 2. NPV method	

	3. bond and stock valuation	
W2	Efficient Market Hypothesis the reference and research	
W3	risk and return: how do we measure the risk of a listed firm	
W4 W5	<p>CAPM: theory and empirical studies</p> <p>CAPM: Fama-French three-factor model (1993)</p> <p>CAPM: Stambaugh and Yuan (2016) 4-factor model</p> <p>Carhart, Mark (1997), “On Persistence in Mutual Fund Performance,” The Journal of Finance, vol. 52, 57–82.</p> <p>CAPM: Fama-French five factor-model: A five-factor asset pricing model (2015, Journal of financial economics, 116, 1-22.)</p>	CAPM discussion
W6 W7	<p>Capital Expenditure (CE) and firm value (FV):</p> <p>1. how to apply CE in test FV changes</p> <p>2. reference and assigned readings</p>	
W8	Mid-term report and discussion	
W9 W10	<p>Payout policy:</p> <p>1. dividend policy</p>	Payout policy case studies

	<p>2. share repurchase programme</p> <p>JM Miller, JJ McConnell (1995)</p> <p>Open-market share repurchase programs and bid-ask spreads on the NYSE: Implications for corporate payout policy, JFQA</p> <p>D Ikenberry, J Lakonishok, T Vermaelen (1995) Market underreaction to open market share repurchases, Journal of financial economics</p>	
W11	<p>1. Paper and theory review</p> <p>2. Discussion</p>	Paper Discussion
W12 W13 W14	<p>Capital structure: MM theory and optimal capital structure</p> <p>Bradley, G. Jarrell, E. Kim On (1984). The existence of an optimal capital structure: Theory and evidence, The journal of Finance.</p> <p>Abeywardhana, Y. (2017) Capital structure theory: An overview, Accounting and finance research</p>	
W15	Students presentation I	presentation
W16	Students presentation II	presentation
W17	Term review	
W18	Final exam	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	計量經濟學 Econometrics	授課教師 Instructor	蔡豐澤 Tsai, Feng-Tse
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book： <u>Introductory Econometrics: a modern approach</u> (100 %英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例 (Percentage in English)_____%</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input checked="" type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>		

<p>成績評量方式</p> <p>Grading</p>	<p><input checked="" type="checkbox"/> 期中/期末考：_100_%以上英文試題，學生以英文答題_____%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input type="checkbox"/> 英文期中/期末報告：_____ %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Course introduction	Course contents, evaluation, programming
W2	Nature of econometrics and economic data	Econometrics Empirical economic analysis Structure of economic data
W3	Simple regression model	Definition Deriving OLS Properties of OLS
W4	Simple regression model	Unit of measurement and functional form Expected values and variances of OLS estimators Regression with/without constants Regression on binary explanatory variable
W5	Multiple regression model	Motivation Mechanics and interpretation

		Expected value of OLS estimators
W6	Multiple regression model	Variance of OLS estimators Efficiency Applications
W7	Multiple regression model	Sample distributions Testing hypotheses Confidence intervals
W8	Multiple regression model	Consistency Asymptotic normality Large sample inference
W9	Mid-term exam	W1-W8 contents
W10	Multiple regression model	Dummy variable Binary dependent variable Policy analysis
W11	Heteroskedasticity	Consequences Heteroskedasticity-robust inference Testing WLS
W12	Specification and data issues	Misspecification Proxy variables Measurement error Missing data, nonrandom samples, and outliers
W13	Regression with time series data	Time series regression models Finite sample properties Trends and seasonality
W14	OLS with time series data	Stationary and weakly dependent time series Serial correlation Assumption
W15	Instrumental variables estimation	Omitted variables Two-stage least squares

		IV and errors-in-variables problems Testing for endogeneity
W16	Empirical project	Posing a question Literature review Data collection
W17	Empirical project	Econometric analysis Writing
W18	Final presentation	Presentation of project

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	公司財務管理 Corporate Financial Management	授課教師 Instructor	呂麒麟 Chilin Lu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>This course studies fundamentals of corporate finance and capital markets, emphasizing the financial aspects of managerial decisions. The course introduces most areas of corporate finance, including the financial statements, valuation of financial assets, capital budgeting, risk management, long term financial policy, short term financial planning, cash management and dividend policy. The course draws heavily on empirical research to help guide managerial decisions, so students have to read some journal papers and present it in the class on the same times.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

課程教材 Material	1.指定課本書名 Book： <u>Corporate finance core principles & applications, 5th ed.</u> (<u>100</u> % 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 3.其他補充說明 Others：	
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> 分組報告 Group Report <input checked="" type="checkbox"/> 其他方式說明 Others：Paper presentation and discussion	
成績評量方式 Grading	<input checked="" type="checkbox"/> 期中/期末考： <u>100</u> %以上英文試題，學生以英文答題 <u>100</u> %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____ %以英文表達。 The percentage of using English in midterm or final oral presentation <input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	Lecturing and discussion
W2	Financial statements	Lecturing and discussion
W3	Cash flow	Lecturing and discussion
W4	Financial long term planning	Lecturing and discussion

W5	Discounted cash flow valuation	Lecturing and discussion
W6	Interest rates and financial market	Lecturing and discussion
W7	Bond valuation	Lecturing and discussion
W8	Stock valuation	Lecturing and discussion
W9	Mid-term exam.	Examination
W10	Net present value	Lecturing and discussion Lecturing and discussion
W11	IRR and other criteria	Lecturing and discussion Lecturing and discussion
W12	Making capital investment decisions	Lecturing and discussion Lecturing and discussion
W13	Risk analysis	Lecturing and discussion Lecturing and discussion
W14	Capital budgeting	Lecturing and discussion Lecturing and discussion
W15	Risk and return	Lecturing and discussion Lecturing and discussion
W16	CAPM	Lecturing and discussion Lecturing and discussion
W17	Efficient capital markets	Lecturing and discussion Lecturing and discussion
W18	Final exam.	Examination

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	企業資料分析 Business Data Analysis	授課教師 Instructor	梁直青 Liang,Chih-Chin
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Experiments and surveys need statistics to find the useful implications behind to the audiences. Nowadays, the use of structural equation modeling (SEM) and advanced statistics methods have mushroomed in these decades. SEM is widely recognized as one of the most powerful and most comprehensive methods for testing</p>			

causal relationships among factors.

Data mining, or intelligent analysis of information stored in data sets, has recently gained a substantial interest among practitioners in a variety of fields and industries. Nowadays, almost every organization collects data, which can be analyzed to make better decisions, conclude customer patterns, improve policies, detect credit fraud, predict important events, monitor, and evaluate reliability, etc.

The course will provide conceptual bases of SEM and advance statistics as well as applications necessary to undertake research. Students will learn to critically think about causal relations, measurement of variables, and testing of theories. There will also be plenty of demonstrations and hands-on exercises using SPSS AMOS version 18. Additionally, this course will provide the participants with understanding of the data mining methodologies, and with the ability of formulating and solving problems with them. Students will have a chance to understand the complicated environment of today's data mining business market.

課程教材 Material	<p>1.指定課本書名 Book : _____ (_____%英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials : 採用英文之比例(Percentage in English)<u>100%</u></p> <p>3.其他補充說明 Others :</p>
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input type="checkbox"/> 小組討論 Group Discussion <input checked="" type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others :</p>
成績評量方式 Grading	<p>V 期中/期末考： <u>100%</u>以上英文試題，學生以英文答題 <u>100%</u>。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>V 英文期中/期末報告： <u>100%</u>以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p>V 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p>

	English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading) :	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction	Lecturing
W2	What is research?	Lecturing
W3	Define questions	Lecturing
W4	How to write motivations? What is a good research motivation?	Lecturing and 20 mins of student’s presentation
W5	What are the famous theories within 3 years in MIS, Finance, or Industrial Management?	Lecturing and 20 mins of student’s presentation
W6	Compare the PLS-SEM and Consistent PLS-SEM algorithms	Lecturing and 20 mins of student’s presentation
W7	What is Bootstrapping and Consistent Bootstrapping algorithm?	Lecturing and 20 mins of student’s presentation
W8	What is Blindfolding and when do we need it?	Lecturing
W9	Mid-Exam	Mid-exam
W10	Introduce Confirmatory Tetrad Analysis (CTA).	Lecturing
W11	Introduce Importance	Lecturing and 20 mins of student’s presentation

	Performance Map Analysis (IPMA).	
W12	Introduce Prediction-Oriented Segmentation (POS) and Introduce PLS Predict Algorithm.	Lecturing and 20 mins of student's presentation
W13	Introduce Finite Mixture Segmentation (FIMIX)	Lecturing and 20 mins of student's presentation
W14	Introduce Multi-group Analysis (PLS-MGA)	Lecturing and 20 mins of student's presentation
W15	Introduce Permutation algorithm	Lecturing
W16	How to do spotlight analysis	Lecturing and Practicing
W17	How to run PROCESS (an embedded component for testing the analytical results of SPSS Statistics)?	Lecturing and Practicing
W18	Final Report	Final Report

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	激勵與領導 Motivation and Leadership	授課教師 Instructor	劉慶湘 Ching-Hsiang Liu
教學簡要說明			

<p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>		
<p>課程教材</p> <p>Material</p>	<p>1.指定課本書名 Book：__Principles of Leadership__ (_100_%英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例 (Percentage in English)_100_%</p> <p>3.其他補充說明 Others：</p>	
<p>雙語教學方式</p> <p>(可多選，或簡述)</p> <p>Bilingual Teaching Strategies</p>	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>	
<p>成績評量方式</p> <p>Grading</p>	<p><input type="checkbox"/> 期中/期末考：_____%以上英文試題，學生以英文答題_____%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/> 英文期中/期末報告：_100_%以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>	
<p>課程進度 Course Outline</p>		
週次	單元/主題	教學活動重點及教材內容

Week	Unit/Topic	Teaching Activities
W1	Introduction	Introduce the class requirements and formats
W2	Motivation Theories	Understanding the contemporary motivation theories
W3	The Nature and Importance of Leadership	The meaning of leadership The impact of leadership on organizational performance Leadership roles
W4	Traits, Motives, and Characteristics of Leaders	Personality traits of effective leaders Leadership Motives
W5	Charismatic and Transformational Leadership	The meanings of charisma Types of charismatic leaders Characteristics of charismatic leaders Transformational leadership
W6	Leadership Behaviors, Attitudes, and Styles	Task-related attitudes and behaviors Relationship-oriented attitudes and behaviors
W7	Contingency and Situational Leadership	Situational influences on effective leadership behavior The path-goal theory of leadership effectiveness
W8	Leadership Ethics and Social Responsibility	Principles and practices of ethical and moral leadership What Makes a Leader? <i>Daniel Goleman</i>
W9	Power, Politics, and Leadership	Sources and types of power Factors that contribute to organizational politics What Makes an Effective Executive? <i>Peter F. Drucker</i>
W10	Influence Tactics of Leaders	A model of power and influence The Work of Leadership. <i>Roanld A. Heifetz and Donald L. Laurie</i>

W11	Developing Teamwork	Leader's action that foster teamwork What Leaders Really Do. <i>John P. Kotter</i>
W12	Motivation and Coaching Skills	Expectancy theory and motivation skills Discovering Your Authentic Leadership. <i>Bill George, Peter Sims, Andrew N. McLean, and Diana Mayer</i>
W13	Communication and Conflict Resolution Skills	Inspirational and powerful communication Listening as a leadership skill Crucibles of Leadership. <i>Warren G. Bennis and Robert J. Thomas</i>
W14	Creativity, Innovation, and Leadership	Characteristics of creative leaders Overcoming traditional thinking as a creative strategy Why Should Anyone Be Led by you? <i>Robert G. Bennis and Robert J. Thomas</i>
W15	International and Culturally Diverse Aspects of Leadership	Cultural factors influencing leadership practice Seven Transformations of Leadership. <i>David Rooke and William R. Torbert</i>
W16	Strategic Leadership and Knowledge Management	The nature of strategic leadership Knowledge management and the learning organization Level 5 Leadership: The Triumph of Humility and Fierce Resolve. <i>Jim Collins</i>
W17	Leadership Development and Succession	Development through self-awareness and self-discipline Development through education, experience, and mentoring In Praise of the Incomplete Leader. <i>Deborah Ancona, Thomas W. Malone, Wanda J. Orlikowski and Peter M. Senge</i>

W18	Final Project Due	Reflections
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國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	全球化行銷 Global Marketing	授課教師 Instructor	徐怡 Yi Hsu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：Global Marketing Management (100 %英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_100_%</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p> <input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A </p> <p> <input checked="" type="checkbox"/>問題導向 Problem Based Learning <input checked="" type="checkbox"/>協同教學 Collaborative Teaching </p> <p> <input checked="" type="checkbox"/>分組報告 Group Report </p> <p> <input type="checkbox"/>其他方式說明 Others： </p>		

<p>成績評量方式</p> <p>Grading</p>	<p><input type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■ 英文期中/期末報告：_100_ %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p>■ 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction to the course Ch1 Introduction to global marketing	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W2	Ch1 Introduction to global marketing	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W3	Ch2 Global Economic Environment	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W4	Ch3 The Political, Legal, and Regulatory Environments of Global Marketing	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W5	Ch4 Political and Legal Environment	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W6	Ch5 Global Cultural	Lecturing; Group Discussion; Q&A; Problem Based

	Environment	Learning; Group Report
W7	Ch6 Global Customers	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W8	Ch7 Global Marketing Information Systems and Research	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W9	Ch8 Segmentation, Targeting, and Positioning	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W10	Ch9 Global Entry and Expansion Strategy	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W11	Ch10 Global Product Decision	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W12	Ch11 Global Pricing Decision	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W13	Ch12 Global Marketing Channels	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W14	Ch13 Global Integrated Marketing Communications	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W15	Ch14 The Future of Global Marketing	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W16	Final Project Presentation	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W17	Final Project Presentation	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W18	Collaborative Teaching	Collaborative Teaching

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	創業管理 Entrepreneurship	授課教師 Instructor	陳鈺淳 Yu-Chun Chen
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book : <i>Barringer, B.R., & Ireland, R.D. (2018). Entrepreneurship: Successfully Launching New Ventures(6th Edition). New York: Pearson</i> (___100_ % 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials : 採用英文之比例(Percentage in English)_____ %</p> <p>3.其他補充說明 Others :</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/> 教材講述 Lecturing <input checked="" type="checkbox"/> 小組討論 Group Discussion <input type="checkbox"/> 口頭問答 Q&A</p> <p><input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/> 分組報告 Group Report</p> <p><input type="checkbox"/> 其他方式說明 Others :</p>		

<p>成績評量方式</p> <p>Grading</p>	<p>■期中/期末考：_100_%以上英文試題，學生以英文答題_100_%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■英文期中/期末報告：_100_%以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p>■全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes</p> <p>(Department cores, master's degree and doctoral degree courses so must have</p> <p>■其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：Harvard Simulation (English)</p>
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課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	<ul style="list-style-type: none"> Overview of class The entrepreneurship ecosystem 	
W2	<ul style="list-style-type: none"> Chapter 1: Introduction to Entrepreneurship 	<p>This chapter (1) introduces the book, (2) provides an overview of the entrepreneurial process, and (3) introduces a conceptual model that shows how the entrepreneurial process typically unfolds. The model, which is shown at the top of the next page, depicts the entrepreneurial process as a 10-step process, beginning with the decision to become an entrepreneur. The chapters of the book follow the model. We hope that this approach provides your students a nice visual way of understanding how the entrepreneurial process unfolds.</p>
W3	<ul style="list-style-type: none"> Chapter 2: Recognizing 	<p>This chapter begins by describing the difference</p>

	Opportunities and Generating Ideas	between an opportunity and an idea. Students are reminded that many firms fail, not because the entrepreneurs involved didn't work hard, but because there was no real opportunity to begin with. The four components of a favorable opportunity (attractive, durable, timely, and anchored in a product, service, or business that adds value) are then discussed. The middle of the chapter focuses on the three primary ways that entrepreneurs discover opportunities: by studying environmental trends, solving a problem, or finding gaps in the marketplace. This material is followed by a discussion of the personal characteristics of entrepreneurs that heighten their ability to recognize business opportunities. The chapter then transitions to talking about techniques that can help entrepreneurs come up with new business or product ideas. The techniques introduced include brainstorming, focus groups, library and Internet research, and an assortment of other techniques.
W4	• Chapter 2: Recognizing Opportunities and Generating Ideas	
W5	• Chapter 3: Feasibility Analysis	This chapter introduces feasibility analysis, and makes the case for the importance of feasibility analysis as a way of testing the potential of a business idea. The chapter stresses that the proper time to complete a feasibility analysis is after opportunity recognition but before the completion of a business plan. The value of completing a concept statement is discussed. A concept statement is a one-page description of a business idea, which an entrepreneur uses to solicit feedback about the potential viability of the idea.
W6	• Chapter 3: Feasibility Analysis	The four stages of feasibility analysis are introduced,

		<p>including product/service feasibility, industry/target market feasibility, organizational feasibility, and financial feasibility. The major issues to consider in each stage of feasibility analysis are introduced and discussed. The chapter concludes by introducing First Screen, which is a feasibility analysis template. It is called First Screen because a feasibility analysis is an entrepreneur's initial pass at determining the feasibility of a business idea.</p>
W7	<p>• Chapter 4: Developing an Effective Business Model</p>	<p>This chapter introduces the concept of the business model. A business model is defined as a firm's plan or recipe for how it creates, delivers and captures value. The chapter discussed the two gen- era! categories of business models: standard business models and disruptive business models. Examples of both standard and disruptive business models are provided.</p> <p>The middle portion of the chapter introduces The Barringer/Ireland Business Model Template.</p>
W8	<p>• Chapter 4: Developing an Effective Business Model</p>	<p>The final section of the chapter explains each of the components of the Barringer/Ireland Business Model Template. The first category Core Strategy, consists of Business Mission, Basis of Differentiation, Target Market, and Product/Market Scope. The second category, Resources, consists of core competencies and key assets. The third category, Financials, consists of Revenue Streams, Cost Structure, and Financing/Funding. The final category, Operations, consists of Product (or service) Production, Channels, and Key Partners.</p>

W9	Mid-term Exam	
W10	<ul style="list-style-type: none"> Chapter 5: Industry and Competitor Analysis 	<p>Chapter 5 focuses on industry analysis. A critical aspect of any start-up's chances for success is the industry it enters, and how it positions itself relative to its industry rivals. The Greenvelope feature at the beginning of the chapter provides an example of how a start-up positioned itself in a savvy manner in a difficult industry. The chapter examines industry dynamics by first talking about the importance of studying industry trends and then by walking through Porter's five forces that determine industry profitability. This discussion concludes with an explanation of the four industry-related questions that a new firm should ask before proceeding. The five industry types and the opportunities they offer are explained and discussed.</p>
W11	<ul style="list-style-type: none"> Chapter 5: Industry and Competitor Analysis 	<p>This chapter introduces the important topic of writing a business plan, which is a step that all start-up firms should go through. An emphasis is placed on the proper time to write a business plan - it should follow the completion of a feasibility analysis. An emphasis is also placed on the reasons for writing a business plan, who reads the plan and what they're looking for, and guidelines for writing a business plan.</p>
W12	<ul style="list-style-type: none"> Harvard Simulation 	
W13	<ul style="list-style-type: none"> Chapter 6: Writing a Business Plan 	<p>This chapter introduces the important topic of writing a business plan, which is a step that all start-up firms should go through. An emphasis is placed on the proper time to write a business plan - it should follow the</p>

		completion of a feasibility analysis. An emphasis is also placed on the reasons for writing a business plan, who reads the plan and what they're looking for, and guidelines for writing a business plan.
W14	• Chapter 6: Writing a Business Plan	The bulk of the chapter provides an outline of a comprehensive business plan. The chapter ends with a section titled "Presenting the Business Plan to Investors." This section provides guidelines on how to present a business plan to a group of investors in the most effective manner possible.
W15	• Harvard Simulation	
W16	• Chapter 7: Unique Marketing Issue	This chapter focuses on the ethical and legal challenges involved with starting a firm. Most entrepreneurs overestimate their knowledge of the legal issues involved with starting and running a business. As a result, it is necessary for an entrepreneur to thoroughly review the legal issues involved to make sure that a costly mistake isn't made.
W17	• Chapter 7: Unique Marketing Issue	The chapter begins by discussing the most important ethical and legal issues facing a new firm, including establishing a strong ethical culture for the firm, choosing an attorney, drafting a founder's (or shareholder's) agreement, and avoiding legal disputes. The chapter next discusses the licenses and permits that businesses need before they can start conducting business. The chapter ends with a discussion of the different forms of business organization available to new firms, including sole proprietorships, partnerships, corporations, and limited liability companies.

W18	Startup Challenge
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國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	商業智慧 Introduction to Business Intelligence	授課教師 Instructor	侯雍聰 Yung-Tsung Hou
<p>教學簡要說明</p> <p>This course aims at giving students an understanding of fundamental BI concepts, terminologies and technologies. Students will learn the theoretical and practical knowledge from both the technical and organization perspectives. The topics of lecturing and discussions include the analysis, design and implementation of BI systems, such as data warehousing, OLAP, decision supporting system, knowledge management system, data mining, big data and other issues.</p>			
課程教材 Material	<p>1.指定課本書名 Book：'Business Intelligence, Analytics, and Data Science: A Managerial Perspective' by R. Sharda (100%英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：補充講義 Lecture Notes 採用英文之比例(Percentage in English)100%</p> <p>3.其他補充說明 Others：網路補充資源 Web Resources 採用英文之比例(Percentage in English)100%</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>		

<p>成績評量方式</p> <p>Grading</p>	<p><input type="checkbox"/> 期中/期末考：_____%以上英文試題，學生以英文答題_____%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p>■ 英文期中/期末報告：100 %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p>■ 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes</p> <p>(Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction of Business Intelligence	An overview and the big picture of BI systems
W2	The Framework for Business Intelligence	Definitions of BI, the Architecture of BI
W3	BI Descriptive Analytics I	Nature of Data and Statistics Modeling
W4	BI Descriptive Analytics II	Data Visualization
W5	BI Descriptive Analytics III	BI Data Model and Star Schema
W6	BI Descriptive Analytics IV	Data Warehouses
W7	BI Predictive Analytics I	Introduction of Data Mining
W8	BI Predictive Analytics II	Data Mining Process and Methods
W9	Midterm	
W10	BI Predictive Analytics III	Data Mining Algorithms
W11	BI Predictive Analytics IV	Text, Web and Social Media Analytics
W12	BI Prescriptive Analytics I	Optimization
W13	BI Prescriptive Analytics II	Simulation

W14	Big Data Concepts	Definition of Big Data
W15	Big Data Tools	Big Data Ecosystems
W16	BI Privacy Management	Issues of Legality, Privacy and Ethics
W17	The future of BI	Future Trends of BI
W18	Final Exam	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	大數據彙整與建模 ETL and Modeling of Big Data	授課 教師 Instructor	胡念祖 Nian -Ze Hu
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>This introductory course gives an overview of many concepts, techniques, and processes in Big Data, beginning with topics such as business process and data business matrix and ending up with more recent topics such as slowly changing dimension, bridge tables and some advance fact table techniques.. The course will give the students the basic ideas and intuition behind modern data modeling methods as well as a bit more formal understanding of how, why, and when they work. The underlying theme in the course is ETL method as it provides the data flow for most of the scenarios covered.</p> <p>Help students obtain the skills of:</p> <p>The goal of this course is to give an introduction to the modeling technique of Big Data. The course will teach student basic skills to decide which approaches to use for what scenarios, build up your own data warehouse structure., etc</p> <p>Instructor introduces the concepts and provides some workshop for students.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p>			

Please state bilingual instructor's teaching weeks and hours in course outline section.

<p>課程教材 Material</p>	<p>1.指定課本書名 Book：Data Science from Scratch, Joel Grus, O'Reilly (<u>100</u>% 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____%</p> <p>3.其他補充說明 Others：</p>	
<p>雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies</p>	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>	
<p>成績評量方式 Grading</p>	<p><input checked="" type="checkbox"/>期中/期末考：<u>30</u>%以上英文試題，學生以英文答題_____%。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/>英文期中/期末報告：<u>30</u>%以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p><input type="checkbox"/>全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input checked="" type="checkbox"/>其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：Attendance 20%, Workshop 20%</p>	
<p>課程進度 Course Outline</p>		
<p>週次 Week</p>	<p>單元/主題 Unit/Topic</p>	<p>教學活動重點及教材內容 Teaching Activities</p>
<p>W1</p>	<p>Big Data</p>	
<p>W2</p>	<p>•Introduction to Big Data</p>	

W3	•Architecture	
W4	•Database fundamental	
W5	•Data Modeling	
W6	•Dimensions	
W7	•Modeling Myths	
W8	• Project and team group discussion	
W9	Midterm	
W10	• Fact Table Techniques	
W11	• Dimension Table Techniques	
W12	Machine Learning	
W13	• Design for various Scenarios	
W14	• ETL Modeling	
W15	•ETL Plan	
W16	•ETL Implmentation	
W17	•Project and team group discussion	
W18	Final Exam	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	資訊管理專題研討(一) Seminar on Information Management(1)	授課教師 Instructor	林彥昆 Yen-Kun Lin
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>The goal of the seminar on information management(1) is to introduce the underlying concepts, methods, and the potential of intelligent systems in the medicine field. We will explore foundational methods in</p>			

artificial intelligence(AI), virtual reality(VR) and augmented reality(AR), and apply them to digital dentistry including, but not limited to, landmark detection in lateral cephalometry, diagnosis and problem analysis, treatment planning and prognosis, prediction of facial attractiveness, determination of the degree of cervical vertebra maturation, the need for extractions and suturing training. As a research and project-based course, students could have the chances to identify and specialize in particular AI methods, dentistry application and relevant tools.

All students are assigned to a set of smaller groups (4-6 students) and each group is supposed to work together to carry out the assigned project. The assigned project includes paper survey, slides making, presentation and implementation. Every member of the team is expected contribute equally to the project. The entire team will share the same score for each release; however, if the instructor/members identify others who have not contributed (or have contributed above and beyond), the score will be varied accordingly.

At the end of this course, each student will be able to

- (a) Understand the benefit of the information management in the business such as Amazon.
- (b) Comprehend a collection of machine learning models and VR/AR (identified and covered in this course), and their applications in dentistry.
- (c) Identify and apply appropriate intelligent systems models and computational tools to specific problem in dentistry.
- (d) Analyze the performance of specific models as applied to dental problem such orthodontics, and justify their use and limitation.
- (e) Identify, understand and interpret methods and evidence from AI/VR/AR and other relevant literature.
- (f) Effectively communicate and disseminate knowledge in any science and engineering domain.

2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。

Please state bilingual instructor's teaching weeks and hours in course outline section.

<p>課程教材 Material</p>	<p>4.指定課本書名 Book：(0% 英文內容 Percentage in English)</p> <p>5.自製教材 Self-made Materials：採用英文之比例(Percentage in English) <u>100</u> %</p> <p>6.其他補充說明 Others：All material is from journal paper, Amazon shareholder letter and other online material about information management.</p>
<p>雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies</p>	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input checked="" type="checkbox"/>小組討論 Group Discussion <input type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input checked="" type="checkbox"/>其他方式說明 Others：The instructor introduces how the AI and information management improve the performance and overcome the current challenge in the dental field via review papers. Then, students could choice one of the techniques and implement it based on the review papers. During the implementation, discussions could be done several times in courses. Finally, students have a presentation showing the implementation, results, discussion and conclusion.</p>
<p>成績評量方式 Grading</p>	<p><input checked="" type="checkbox"/>期末考：<u>100</u> %以上英文試題，學生以英文答題 <u>100</u> %，佔學期成績:20%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/>英文期中/期末報告：<u>100</u> %以英文表達，佔學期成績:30%。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/>全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式) English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p>

	■其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading) : Attendance:5%, Implementation:30%, Discussion:15%	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	•Course Introduction	1.What is Information Management? http://www.aiim.org/What-is-Information-Management# 甲、 Bring on shareholders who align with your value 3.Review paper reading: Scope and performance of artificial intelligence technology in orthodontic diagnosis, treatment planning, and clinical decision-making-A systematic review
W2	•The Current State of Play	1.A Happy Place to Be http://www.egltd.com/dmrarchive/1996-10.pdf 2.1998 Stay terrified of your customers 3.Review paper reading: Scope and performance of artificial intelligence technology in orthodontic diagnosis, treatment planning, and clinical decision-making-A systematic review
W3	• A Short Survey of Existing Technologies and Practices	1.Predictive Analytics Business Applications https://predictionimpact.com/predictive.analytics.html 2.1999 Build on top of infrastructure that’s improving on its own 3.Review paper reading: Scope and performance

		of artificial intelligence technology in orthodontic diagnosis, treatment planning, and clinical decision-making-A systematic review
W4	•Content Management Project phases	1.10 principles of effective information management https://www.steptwo.com.au/papers/kmc_effectiveim/ 2.2000 In lean times, build a cash moat 3.Review paper reading: Machine learning and orthodontics, current trends and the future opportunities: A scoping review
W5	•Paper reading & discussion	1.2001 Measure your company by your free cash flow 2.Review paper reading: Machine learning and orthodontics, current trends and the future opportunities: A scoping review
W6	•Paper reading & discussion	1.2002 Build your business on your fixed costs 2.Review paper reading: Machine learning and orthodontics, current trends and the future opportunities: A scoping review
W7	•Mid-term presentation (Motivation/Objective)	1.Decision about the paper for the implementation 2.2003 Long-term thinking is rooted in ownership
W8	•Paper reading & method discussion	1.2004 Free cash flow enables more innovation 2.Review paper reading: PointNet++
W9	• Paper reading & method discussion	1.Presentation 2.2007 Missionaries build better products
W10	•Paper reading & method	1. Presentation

	discussion	2. 2009 Focus on inputs — the outputs will take care of themselves
W11	•Paper reading & method discussion	1. Presentation 2. 2010 R&D should pervade every department
W12	•Paper reading & method discussion	1. Presentation 2. 2012 Surprise and delight your customers to build long-term trust
W13	•Paper reading & method discussion	1. Presentation 2. 2013 Decentralize decision-making to generate innovation
W14	•Paper reading & method discussion	1. Presentation 2. 2015 Don't deliberate over easily reversible decisions
W15	• Final presentation (Implementation/Discussion/Conclusion)	1. Presentation 2. 2016 Move fast and focus on outcomes
W16	• Final presentation (Implementation/Discussion/Conclusion)	1. Presentation 2. 2017 Build high standards into company culture
W17	• Final presentation (Implementation/Discussion/Conclusion)	1. Presentation 2. 2019 In times of crisis, be aggressive and agile & 2020 (final letter): Company culture can be both employee-centric and customer-centric
W18	• Final exam	Amazon shareholder letter

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	永續觀光 Sustainable Tourism	授課教師 Instructor	林宗賢 Lin, Chung-Hsien
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。 Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。 Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			
課程教材 Material	<p>1.指定課本書名 Book：__Sustainable Tourism: Theory and Practice__ (__100__ % 英文內容 Percentage in English)</p> <p>2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ %</p> <p>3.其他補充說明 Others：</p>		
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input checked="" type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>		
成績評量方式 Grading	<p><input type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/> 英文期中/期末報告：__70__ %以英文表達。 The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/> 全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必</p>		

	<p>須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes</p> <p>(Department cores, master's degree and doctoral degree courses so must have</p> <p><input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading) :</p>
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課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Introduction to Course	
W2	Emergence of Sustainable Tourism	
W3	Issues in Sustainable Tourism	
W4	Alternative Tourism	
W5	Conventional Mass Tourism	
W6	The Facilitating Sectors	
W7	Attractions	
W8	Midterm Presentation	
W9	Midterm Exam	
W10	Quality Control	
W11	Tourist Destinations	
W12	Spatial Strategies for Destinations	
W13	Visitor Management Strategies for	

	Destinations	
W14	Ecotourism: The Conscience of Sustainable Tourism	
W15	Case Study: Poverty Alleviation	
W16	Case Study: Environmental Justice	
W17	Term Presentation (01/18)	
W18	Final Exam (01/25)	

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	人機介面互動設計研究 Human Computer Interface Design	授課教師 Instructor	沈思岑 Siu-Tsen Shen
<p>教學簡要說明</p> <p>1.請依照授課班級英文分級程度規劃課程計畫書。</p> <p>Please design the course plan by following the English using percentage of the course English level.</p> <p>2.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。</p> <p>Please state bilingual instructor's teaching weeks and hours in course outline section.</p>			

課程教材 Material	1.指定課本書名 Book: <u>Interaction Design: Beyond; Human-Computer Interaction by Preece et al.; John Wiley & Sons, Inc; ISBN 978-0-470-66576-3</u> (100% 英文內容 Percentage in English) 2.自製教材 Self-made Materials：採用英文之比例(Percentage in English)_____ % 3.其他補充說明 Others：	
雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies	<input type="checkbox"/> v 教材講述 Lecturing <input type="checkbox"/> v 小組討論 Group Discussion <input type="checkbox"/> v 口頭問答 Q&A <input type="checkbox"/> 問題導向 Problem Based Learning <input type="checkbox"/> 協同教學 Collaborative Teaching <input type="checkbox"/> v 分組報告 Group Report <input type="checkbox"/> 其他方式說明 Others：	
成績評量方式 Grading	<input type="checkbox"/> 期中/期末考：_____ %以上英文試題，學生以英文答題_____ %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. <input type="checkbox"/> 英文期中/期末報告：_____ %以英文表達。 The percentage of using English in midterm or final oral presentation <input type="checkbox"/> <u>V 全英語口頭簡報 (含 QA 問答)20分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</u> English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have <input type="checkbox"/> 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：	
課程進度 Course Outline		
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	Topics covered: Background and introduction to HCI	Broaden View of HCI Design
W2	HCI Design Research & Disciplinary	HCI Design Research & Disciplinary

W3	Reading assignments	Chapters 1-3 of text.
W4	UI Research Design (I)	UI Research Design (I)
W5	UI Research Design (II)	UI Research Design (II)
W6	Reading assignments	Chapter 4-6 of text.
W7	Inclusive Design (I)	Inclusive Design (I)
W8	Inclusive Design (II)	Inclusive Design (II)
W9	Mid Term Assessment	
W10	Service Design (I)	Service Design (I)
W11	Service Design (II)	Service Design (II)
W12	Reading Assignments	Chapter 7-9 of text
W13	Design for Elderly	Design for Elderly
W14	Design for impaired disabilities (I)	Design for impaired disabilities (I)
W15	Design for impaired disabilities (II)	Design for impaired disabilities (II)
W16	Reading Reflections	Reading Reflections and feedbacks.
W17	Final project Presentation mock-up	Final project Presentation mock-up
W18	Final Term Exam	Oral Presentation

國立虎尾科技大學雙語教學課程計畫書

Bilingual Education Course Plan

課程名稱(中) 課程名稱(英) Course title in Mandarin and English	彈性力學 Elasticity	授課教師 Instructor	張禎元 Chang, Jen- Yuan
教學簡要說明 4.請依照授課班級英文分級程度規劃課程計畫書。			

Please design the course plan by following the English using percentage of the course English level.

5.如有聘請雙語導師，請於課程進度註明雙語導師授課之週次時數。

Please state bilingual instructor's teaching weeks and hours in course outline section.

<p>課程教材 Material</p>	<p>7.指定課本書名 Book：<u>Timoshenko, S. P. and Goodier, J. N., Theory of Elasticity, 3rd Edition, McGraw Hill, New York, USA, 1987 (100 % 英文內容 Percentage in English)</u></p> <p>8.自製教材 Self-made Materials：Total of 23 self-made lecture modules in form of PPT 採用英文之比例(Percentage in English)-<u>100</u>%</p> <p>9.其他補充說明 Others：</p>
<p>雙語教學方式 (可多選，或簡述) Bilingual Teaching Strategies</p>	<p><input checked="" type="checkbox"/>教材講述 Lecturing <input type="checkbox"/>小組討論 Group Discussion <input checked="" type="checkbox"/>口頭問答 Q&A</p> <p><input type="checkbox"/>問題導向 Problem Based Learning <input type="checkbox"/>協同教學 Collaborative Teaching</p> <p><input type="checkbox"/>分組報告 Group Report</p> <p><input type="checkbox"/>其他方式說明 Others：</p>
<p>成績評量方式 Grading</p>	<p><input checked="" type="checkbox"/>期中/期末考：<u>100</u> %以上英文試題，學生以英文答題<u>50</u> %。</p> <p>The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</p> <p><input checked="" type="checkbox"/>英文期中/期末報告：<u>70</u> %以英文表達。</p> <p>The percentage of using English in midterm or final oral presentation</p> <p><input checked="" type="checkbox"/>全英語口頭簡報 (含 QA 問答)20 分鐘以上(一般科系專業課、碩博專業課程必須包含此評量方式)</p> <p>English oral presentation including Q&A session at least 20 minutes (Department cores, master's degree and doctoral degree courses so must have</p> <p><input checked="" type="checkbox"/>其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</p> <p>This is the course covering a variety of important problems in solid mechanics. Topics covered in this course include torsion of non-circular cross sections, field equations of elasticity with boundary conditions, stress concentrations, flexure and large deformation of beams, and a number of classical</p>

	<p>plane stress/plane strain solutions in rectangular and polar coordinates. Emphasis is given to theory of elasticity and derivations of classical elasticity solutions. Comparisons are also made between solutions derived via full theory of elasticity and simplified solutions obtained from undergraduate strength of materials course. In addition to midterm and final exams and oral presentation of term projects, students are required to write up a six-page double column conference-style academic paper summarizing details of the term projects relevant to Elasticity. The language used in the paper should be at least 20% in English for domestic students. However, 100% in English is required for international students taking this course.</p>
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課程進度 Course Outline

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W1	<ul style="list-style-type: none"> • Introduction • Strength of Materials - Axial Loading and Torsion 	Lecture 1, 2
W2	<ul style="list-style-type: none"> • Strength of Materials - Bending 	Lecture 3
W3	<ul style="list-style-type: none"> • Strength of Materials - Buckling, Thin-walled Pressure Vessels & Combined Loadings 	Lecture 4
W4	<ul style="list-style-type: none"> • Strength of Materials - 2D Transformation and Failure Theories • Midterm Exam I 	Lecture 5 In-class exam covering topics taught in W1-W4
W5	<ul style="list-style-type: none"> • Large Deformation Theory I - General Overview of Math 	Lecture 6
W6	<ul style="list-style-type: none"> • Large Deformation Theory II - Case with End Horizontal Force Only • Large Deformation Theory III - Case with End Vertical Force Only 	Lecture 7, 8
W7	<ul style="list-style-type: none"> • Large Deformation Theory IV - Case with Weight Loading Only Large 	Lecture 9, 10

	<ul style="list-style-type: none"> • Engineering Applications of Large Deflection Beam Theory 	
W8	Term Project Interim Oral Report	<p>Similar to graduate proposal presentation, each student is required to present his/her term project detailing what, why, and how, as well as the planning for completing the project by end of the semester.</p> <p>Questions and answers in English are encouraged for students participating in this activity.</p>
W9	Midterm Exam II	In-class exam covering topics taught in W1-W8
W10	<ul style="list-style-type: none"> • General Elasticity Theory I, II, II 	Lecture 11, 12, 13
W11	<ul style="list-style-type: none"> • Two-Dimensional Problem Formulation • Stress Governing Equations & Airy Stress Function 	Lecture 14, 15
W12	<ul style="list-style-type: none"> • 2D Problem in Rectangular Coordinates 	Lecture 16
W13	<ul style="list-style-type: none"> • 2D Problem in Polar Coordinates I <p>Midterm Exam III</p>	<p>Lecture 17</p> <p>In-class exam covering topics taught in W10-W13</p>
W14	<ul style="list-style-type: none"> • 2D Problem in Polar Coordinates II, III 	Lecture 18, 19
W15	<ul style="list-style-type: none"> • 2D Problem in Polar Coordinates IV • Torsion of Non-Circular Cross Sections I 	Lecture 20, 21
W16	<ul style="list-style-type: none"> • Torsion of Non-Circular Cross Sections II, III 	Lecture 22, 23
W17	Term Project Final Oral Presentation	<p>Students are required to present their term project detailing literature survey to clearly define the scope the work, methods used to generate results and discussion of the results for engineering applications and scientific</p>

		impacts.
W18	Final Exam	

