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	光纖通信網路 Optical communication networks	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

	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: Fiber Optic Comm. Systems – D.K.Mynbaev Pearson Education. 2.Optical Fiber Comm. Principle – John M.Senior PHI Pub. 3.Optical Fiber Communication Principle – G.Keiser. (100 %英文內容Percentage in English) 4.自製教材 Self-made Materials：採用英文之比例(Percentage in English) 100 % 5.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：%以上英文試題，學生以英文答題 100 %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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) ：
Final grading scheme (all in 100% English)
40----End term
30----Mid term
10----assignment
10----Presentation
10----quiz

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	Need for Fiber Optic Communications System, Role of Fiber Optic communication technology	Lecturing, Q/A , Discussion
W2	Introduction to OFC	Lecturing, Q/A , Discussion
W3	Ray Theory, Electromagnetic Mode Theory	Lecturing, Q/A , Discussion, Assignment 1
W4	Classification of OFC	Lecturing, Q/A
W5	Attenuation: Bending Loses, Scattering, Absorption	Lecturing, Q/A
W6	Dispersion – Intermodal, chromatic, limitations & remedies	Lecturing, Q/A
W7	Light sources & Transmitters	Lecturing, Q/A
W8	Light Emitting Diodes, laser diodes	Lecturing, Q/A
W9	Midterm exams	
W10	Principle of action, characteristics, efficiency, Block Diagram and typical circuits of Transmitter.	Lecturing, Q/A Assignment 2
W11	Photodiodes & Receivers: Introduction, Working,	Lecturing, Q/A
W12	PIN photodiodes, Avalanche photodiode,	Lecturing, Q/A
W13	Block Diagram & typical circuits of receiver	Lecturing , Q/A
W14	Fiber Cable Connectors : Splicing, Connectors, components of Fiber Optic Networks	Lecturing , Q/A
W15	Transceivers, Semiconductor,	Lecturing, Q/A

	optical amplifiers - Principle of operation, Gain, Bandwidth, Cross talk, Noise, Applications, Advantages& Disadvantages.	
W16	EDFA	Lecturing, Q/A
W17	Syllabus revision	QA, Discussion
W18	Final exam	

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課程名稱(中) 課程名稱(英) Course title in Mandarin and English	半導體材料與元件特性分析專論 Characterization of Semiconductor Materials and Devices	授課教師 Instructor	藍吉特 Dr. Ranjit A. Patil

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 Books：(100 % 英文內容 Percentage in English) *Semiconductor Material and Device Characterization* - Dieter K. Schroder, 3rd Edition, John Wiley & Sons, Arizona, USA, 2006 2.自製教材 Self-made Materials： Summarized presentation materials for the topics. 　 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	■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 100 %。 　 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ● 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 ● 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)：100 % English 　 Grading system: 15 % (Daily Performance and Participation) + 15 % (Homework/Reports)

	+ 30 % (Mid-term exam) + 40 % (Final exam)	
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 and Outline of the Course	Group Discussion, Q & A
W2	Two-Point Versus Four-Point Probe	Lecturing, Group Discussion, Q & A
W3	Wafer Mapping	Lecturing, Group Discussion, Q & A
W4	Resistivity Profiling, Contactless Methods	Lecturing, Group Discussion, Q & A
W5	Carrier and Doping Density	Lecturing, Group Discussion, Q & A
W6	Contact Resistance and Schottky Barriers	Lecturing, Group Discussion, Q & A
W7	Series Resistance	Lecturing, Group Discussion, Q & A
W8	Channel Length-Width, and Threshold Voltage	Lecturing, Group Discussion, Q & A
W9	Mid-term Examination	Mid-term Examination
W10	Defects and impurities	Lecturing, Group Discussion, Q & A
W11	Carrier Lifetime	Lecturing, Group Discussion, Q & A
W12	Mobility	Lecturing, Group Discussion, Q & A
W13	Charge-based measurements	Lecturing, Group Discussion, Q & A
W14	Probe Characterizations	Lecturing, Group Discussion, Q & A
W15	Optical Characterizations	Lecturing, Group Discussion, Q & A
W16	Reliability	Lecturing, Group Discussion, Q & A
W17	Failure analysis	Lecturing, Group Discussion, Q & A
W18	Final Examination	Final Examination

Note: The teacher may adjust the above weekly schedule as the course progresses, and the schedule is subject to change.

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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

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	■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10%。
	  The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.
	
	■英文期中/期末報告:90%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 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 Driver and Application Programming	Lecturing Linux Driver and Application Programming
W6	Linux Driver and Application Programming Lab2: Driver and Application Programming for Embedded System	Lecturing Linux Driver and Application Programming Experiment Lab2: Driver and Application Programming for Embedded System
W7	Linux Driver and Application Programming Lab2: Driver and Application Programming for Embedded System	Lecturing Linux Driver and Application Programming Experiment Lab2: Driver and Application Programming for

		Embedded System
W8	Linux Driver and Application Programming Lab2: Driver and Application Programming for Embedded System	Lecturing Linux Driver and Application Programming Experiment Lab2: Driver and Application Programming for Embedded System
W9	Midterm	
W10	ROS Introduction	Lecturin g ROS Introduction
W11	ROS Implementation Lab3: Embedded ROS	Lecturing ROS Implementation Experiment Lab3: Embedded ROS
W12	Lab3: Embedded ROS	Experiment Lab3: Embedded ROS
W13	Lab3: Embedded ROS	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

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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

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：_Shabana, Ahmed A., Vibration of Discrete and Continuous Systems, Springer Nature Switzerland AG 1997, 2019._ (_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	■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_80_%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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 must be included) □ 其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：

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	Closed-Book Midterm Examination
W10	Multi-degree of Freedom Systems	Lectures, Homework, Q&A
W11	Forced Vibration of the Undamped Systems	Lectures, Homework, Q&A
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 Final Examination and Final Reports

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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
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., Dynamics of Multibody Systems, Cambridge University Press. (100%英文內容 Percentage in English)</u> 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	■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 _80_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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 must be included) □ 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	Closed-Book Midterm Examination
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	Lectures and Oral Presentations for Final Reports
W18	Final Examination	Open-Book Final Examination and Final Reports

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課程名稱(中) 課程名稱(英) Course title in Mandarin and English	電子裝備散熱系統 Electronic equipment cooling system	授課教師 Instructor	庫秉弦 Abhishek Kumar

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：THERMAL MANAGEMENT OF MICROELECTRONIC EQUIPMENT HEAT TRANSFER THEORY, ANALYSIS METHODS, AND DESIGN PRACTICES by L. T. Yeh, and P.E. R. C. Chu (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)95% 3.其他補充說明 Others： Lecture notes and self-made study material
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： Assignment & Quiz
成績評量方式 Grading	☑ 期中/期末考：90%以上英文試題，學生以英文答題90%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ☑ 英文期中/期末報告：90%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)：Attendance 10%, Assignment & Quiz 20%, Mid-term 30% , Final-

	term 40%	

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	Unit-1	Introduction to Electronics Cooling
W2	Unit-1	Fundamentals of heat transfer
W3	Unit-2	Conduction
W4	Unit-2	Convection
W5	Unit-3	Radiation
W6	Unit-3	Pool Boiling
W7	Unit-4	Flow Boiling
W8	Unit-4	Extended Surface Heat Transfer
W9	**Midterm**	**Open Book**
W10	Unit-5	Thermal Interface Resistance
W11	Unit-5	Components and Printed Circuit Boards
W12	Unit-5	Direct Air Cooling and Fans
W13	Unit-6	Heat Exchangers and Cold Plates
W14	Unit-6	Advanced Cooling Technologies I: Single-Phase Liquid Cooling
W15	Unit-7	Advanced Cooling Technologies II: Two-Phase Flow Cooling
W16	Unit-7	Heat Pipes
W17	Unit-8	Thermoelectric Coolers
W18	**Final term**	**Open Book**

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課程名稱(中) 課程名稱(英) Course title in Mandarin and English	科技英文論文寫作 Writing of Scientific English paper	授課教師 Instructor	庫秉弦 Abhishek Kumar

	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： Writing Up Research: Experimental Research Report Writing for Students of English: Robert Weissberg, Suzanne Buker, Prentice Hall Regents, 1990 2. (英文內容 Percentage in English) 100% 3.自製教材 Self-made Materials： Lecture notes (Percentage in English)100% 4.其他補充說明 Others： Lecture notes may cover several books
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： Assignment and Quiz
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 100%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ☑ 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 ☑ 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 1. ☑ 其他方式(請說明中英文比例)Others (please state the proportion of Mandarin and English in grading)：Attendance, Homework and Quiz in class participation 35%

2. Writing template and assignments 25%: Find five journal articles of your relevant field written by good English native speakers as model papers for analysis (due week 3)

- Develop your personalized scientific writing template

3. Independent/group scientific writing Task 40%

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	Unit-1	Introduction
W2	Unit-1	Writing Basics I
W3	Unit-1	Writing Basics II
W4	Unit-1	Writing Basics III
W5	Unit-2	How to Write the Scientific Manuscript: Introduction
W6	Unit-2	How to Write the Scientific Manuscript: Introduction
W7	Unit-3	How to Write the Scientific Manuscript: Method
W8	Unit-3	How to Write the Scientific Manuscript: Method
W9	**Midterm**	**Submission of writing task**
W10	Unit-4	How to write the Scientific Manuscript: Result and Discussion
W11	Unit-4	How to Write the Scientific Manuscript: Result and Discussion
W12	Unit-5	How to Write the Scientific Manuscript: Title and Abstract
W13	Unit-5	Wrap-up scientific manuscripts
W14	Unit-5	Plagiarism and Reference
W15	Unit-5	How to address reviewer comment
W16	Unit-6	No classes (Time for independent writing)
W17	Unit-6	No classes (Time for independent writing)
W18	**Final-term**	**Submission of writing task**

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	半導體材料與電晶體 Semiconductor materials and transistors	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

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	指定課本書名 Book: 1. Semiconductor devices,2nd edition, by J.J.Sparks 2. Fundamentals of Semiconductor Manufacturing and Process Control, G. May C. Spanos 3. Principles of Electronics by VK Mehta 1.（ 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	■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： Assignments and surprise test/quiz
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 100%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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）：Assignments and quiz/surprise test

Final grading scheme (all in 100% English)

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	Lecturing, QA, Discussion
W2	Atomic structures of materials	Lecturing, QA, Discussion
W3	Energy band theory of metals, semiconductors and insulators	Lecturing, QA, Discussion
W4	Charge carrier dynamics	Lecturing, QA, Discussion, Quiz 1
W5	Semiconductor materials and types	Lecturing, QA, Discussion
W6	Semiconductor diodes and their applications	Lecturing, QA, Discussion, Assignment
W7	Rectifiers	Lecturing, QA, Discussion
W8	Bipolar junction transistors : basics	Lecturing, QA, Discussion
W9	Mid term	
W10	Bipolar junction transistors : configurations	Lecturing, QA, Discussion
W11	Field effect transistors	Lecturing, QA, Discussion
W12	Field effect transistors	Lecturing, QA, Discussion
W13	MOSFET : introduction	Lecturing, QA, Discussion, Quiz 2
W14	MOSFET: types and applications	Lecturing, QA, Discussion, Assignment
W15	Power semiconductor devices	Lecturing, QA, Discussion
W16	Integrated circuits	Lecturing, QA, Discussion
W17	Syllabus revision	Presentations
W18	End 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	電子元件和電路 Electronic devices and circuits	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

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：1. R L Boylestad and Nachelsky: Electronic Devices & circuit Theory, 10th Ed.Pearson. 2.Semiconductor devices,2nd edition, by J.J.Sparks 3.(__100___% 英文內容 Percentage in English) 4.自製教材 Self-made Materials：採用英文之比例(Percentage in English)100% 5.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100%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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)：Assignments and quiz/surprise test. 100% English

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	Lecturing, QA, Discussion
W2	Introduction to semiconductors and basic electronics components	Lecturing, QA, Discussion
W3	Special diodes and rectifiers	Lecturing, QA, Discussion
W4	Bipolar Junction Transistor	Lecturing, QA, Discussion
W5	Bipolar Junction Transistor and configurations	Lecturing, QA, Discussion
W6	Output Stages and Power Amplifiers	Lecturing, QA, Discussion, Assignment
W7	Output Stages and Power Amplifiers	Lecturing, QA, Discussion
W8	UJT, Signal Generator and Waveform-Shaping Circuits	Lecturing, QA, Discussion
W9	Midterm exams	
W10	Junction field effect transistor	Lecturing, QA, Discussion
W11	MOSFET	Lecturing, QA, Discussion
W12	Thyristors: Silicon Controlled Rectifier	Lecturing, QA, Discussion
W13	DIAC	Lecturing, QA, Discussion
W14	TRIAC	Lecturing, QA, Discussion, Assignment
W15	Opto Electronics Devices	Lecturing, QA, Discussion
W16	Opto Electronics Devices	Lecturing, QA, Discussion
W17	Syllabus revision	QA, 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	半導體物理與光電子元件 Semiconductor Physics and Devices for Optoelectronics	授課教師 Instructor	藍吉特 Dr. Ranjit A. Patil

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 Books：(100 % 英文內容 Percentage in English) [1] Semiconductor Physics and Devices, *4th Ed.,* - D. A. Neaman, McGraw-Hill, 2003 [2] Optoelectronics: an introduction, *3rd Ed.*- John Wilson, John Hwakes, Pearson, 2010 [3] Optoelectronics and Photonics: Principles and Practices, S. O. Kasap, Prentice-Hall, 2001) [4] Physics of Photonic Devices, Shun Lien Chuang (John Wiley & Sons, Inc., 2009) [5] Photonics: Optical Electronics in Modern Communications, 6th Edition, Amnon Yariv and Pochi Yeh (Oxford University Press, 2007) 2.自製教材 Self-made Materials： Summarized PowerPoint slides for the various topics. 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	■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 100 %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ● 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 ● 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)：100 % English

15 % (Daily Participation in Class) + 15 % (Homework/Reports) + 30 % (Mid-term exam) + 40 % (Final exam)

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	Lecturing
W2	Structural Properties of Semiconductors	Lecturing, Group Discussion, Q & A
W3	Structural Properties of Semiconductors	Lecturing, Group Discussion, Q & A
W4	Density of States	Lecturing, Group Discussion, Q & A
W5	Semiconductor Band Structure	Lecturing, Group Discussion, Q & A
W6	Semiconductor Band Structure	Lecturing, Group Discussion, Q & A
W7	Absorption and Emission	Lecturing, Group Discussion, Q & A
W8	Time-independent Perturbation Theory	Lecturing, Group Discussion, Q & A
W9	Mid-term Examination	Mid-term Examination
W10	Interband Transitions	Lecturing, Group Discussion, Q & A
W11	Electromagnetic Wave Theory and Guided Wave Optics	Lecturing, Group Discussion, Q & A
W12	Semiconductor Heterostructures	Lecturing, Group Discussion, Q & A
W13	Light Emitting Diodes	Lecturing, Group Discussion, Q & A
W14	Display devices	Lecturing, Group Discussion, Q & A
W15	Semiconductor Lasers	Lecturing, Group Discussion, Q & A
W16	Photodetectors	Lecturing, Group Discussion, Q & A
W17	Revision of the course	Lecturing, Group Discussion, Q & A
W18	Final Examination	Final Examination

The teacher can make appropriate adjustments to the above weekly schedule as the course progresses, and the schedule may be subject to change.

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	運籌學 Operation Research	授課教師 Instructor	庫秉弦 Abhishek Kumar

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： "Introduction to Operations Research" by Frederick S. Hillier and Gerald J. Lieberman (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： Lecture Notes and PPT
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： Assignments and Homework
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100%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ☑ 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 ☑ 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)：Attendance 10%, Assignment and Quiz 15%, Midterm 35%, Final term 40%

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	Unit-1	Introduction to Operation Research and Linear Programming Formulations
W2	Unit-1	Linear Programming Solutions- Graphical Methods and Simplex Algorithm
W3	Unit-2	Simplex Algorithm-Minimization Problems: Initialization, Iteration and Termination
W4	Unit-2	Simplex Algorithm-Minimization Problems: Initialization, Iteration and Termination
W5	Unit-3	Introduction to Duality, Primal-Dual Relationships, Duality Theorems
W6	Unit-3	Dual Variables and the Simplex Tables
W7	Unit-4	Simplex Algorithm in Matrix Form - Sensitivity Analysis
W8	Unit-4	Sensitivity Analysis Transportation Problem
W9	**Midterm**	**Closed-Book**
W10	Unit-4	Transportation Problems, Optimal Solutions and other issues
W11	Unit-5	Assignment Problem - Hungarian Algorithm
W12	Unit-5	Other Issues - Introduction to Dynamic Programming, Involving Discrete Variables
W13	Unit-5	Network Models, Shortest Path Problem, Successive Shortest Path Problem
W14	Unit-6	Maximum Flow Problem, Minimum Cost Flow Problem
W15	Unit-6	Traveling Salesman Problem (TSP), Branch and Bound Algorithms for TSP
W16	Unit-6	Queueing Models, Single and Multiple Server Queueing Models
W17	Unit-6	Game Theory and Critical Path Method
W18	**Final-Term**	**Closed-Book**

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

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	半導體製程技術 Semiconductor Process Technology	授課教師 Instructor	藍吉特 Dr. Ranjit A. Patil

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) 100　% 　[1]　Semiconductor Manufacturing Technology – Michel Quirk, Julian Serda, Prentice Hall 　[2]　Introduction to Semiconductor Manufacturing Technology - Hong Xiao, Prentice Hall 2.自製教材 Self-made Materials： Summarized presentation materials for the topics. (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	■ 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. ● 英文期中/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)：English 100 %

	Grading system: 15 % (Daily interaction and Participation in Class) + 15 % (Homework/Reports) + 30 % (Midterm exam) + 40 % (Final exam)

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	Introduction to IC fabrication	Lecturing, Q&A
W3	Semiconductor basics	Lecturing, Q&A
W4	Wafer manufacturing	Lecturing, Group Discussion, Q&A
W5	Thermal processes	Lecturing, Group Discussion, Q&A
W6	Photolithography	Lecturing, Group Discussion, Q&A
W7	Plasma basics	Lecturing, Group Discussion, Q&A
W8	Ion implantation	Lecturing, Group Discussion, Q&A
W9	Mid-term Examination	Mid-term Examination
W10	Etch	Lecturing, Q&A
W11	CVD and Dielectric thin film	Lecturing, Q&A
W12	Metallization	Lecturing, Q&A
W13	Chemical Metal Polishing	Lecturing, Q&A
W14	Process integration	Lecturing, Group Discussion, Q&A
W15	CMOS processes- I	Lecturing, Q&A
W16	CMOS processes- II	Lecturing, Q&A
W17	CMOS processes- III	Lecturing, Group Discussion, Q&A
W18	Final Examination	Final Examination

Note: The teacher may adjust the above weekly schedule as the course progresses, and the schedule is subject to change.

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	金屬成形特論 Special Topics on Metal Forming	授課教師 Instructor	陳立緯 Li-Wei Chen

<table>
<tr><td colspan="2" align="center">教學簡要說明</td></tr>
<tr><td colspan="2">

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.
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<tr><td>課程教材

Material</td><td>

1.指定課本書名 Book：_ Special Topics on Metal Forming _ (_100_%英文內容 Percentage in English)

2.自製教材 Self-made Materials：Special Topics on Metal Forming 採用英文之比例(Percentage in English)_100_%

3.其他補充說明 Others：
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<tr><td>雙語教學方式

(可多選，或簡述)

Bilingual Teaching

Strategies</td><td>

■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：
</td></tr>
<tr><td>成績評量方式

Grading</td><td>

期中/期末考：_100_%以上英文試題，學生以英文答題_100_%。
The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.
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
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
</td></tr>
</table>

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 Special Topics on Metal Forming	Introduction of Special Topics on Metal Forming
W2	literature review skills on metal forming related reference	literature review skills on metal forming related reference
W3	Principle of metal forming	Principle of metal forming
W4		
W5		
W6	Fundamental concept of plasticity	Fundamental concept of plasticity
W7		
W8		
W9	Midterm Examination	Midterm Examination
W10	Analysis of the material properties of metal forming	Analysis of the material properties of metal forming
W11		
W12	Analysis and simulation of metal forming	Analysis and simulation of metal forming
W13		
W14	Case study of advanced metal forming	Case study of advanced metal forming
W15		
W16	Project study	Project study
W17		
W18	Final Examination	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	專業英文 English for Specific Purpose	授課教師 Instructor	張乃文 Nai-Wen Chang

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：＿＿科技論文英文寫作＿＿＿（_50__%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)__90__% 3.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：_90_%以上英文試題，學生以英文答題　100__%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □　英文期中/期末報告：＿＿＿%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	Syllabus, introductory presentation
W2	Basic English explanation and exercises	Review of grammar concepts, basic listening and speaking exercises
W3	Traditional manufacturing processes	Explanation of types and processes of traditional manufacturing processes
W4	Microelectromechanical systems (mems), and high-tech manufacturing	Fundamental concepts and principles of microelectronics and MEMS
W5	Industrial material production	Introduction to common types and characteristics of raw materials in industrial production
W6	Computer-integrated manufacturing	Concepts, components, advantages, and challenges of computer-integrated manufacturing.
W7	AI technology	Introduction to basic concepts and types of Artificial Intelligence (AI)
W8	Smart manufacturing and digital transformation	Introduction to related technologies such as Industrial Internet of Things (IIoT) and Big Data Analytics
W9	midterm	midterm
W10	Production operations and materials management	Production process planning and control
W11	Quality standards, measurement tools	Introduction to common quality standards and systems
W12	Procurement processes	Supplier evaluation and management
W13	Product data management	Concept and importance of Product Data Management (PDM)
W14	Product lifecycle management	Application of PLM systems in product development, launch, maintenance, etc.
W15	Online transactions	Online transaction platforms and technologies
W16	Supply chain management	Supply chain coordination and collaboration。
W17	Technical English writing and reports	Basic principles and techniques of technical English writing
W18	Final examination	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	光電能源元件 Optoelectronic Energy Devices	授課教師 Instructor	藍吉特 Dr. Ranjit A. Patil

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) 100 % [1] Semiconductor Devices: Physics and Technology- S.M. Sze, John Wiley [2] Physics of Solar Cells, P. Wurfel, Wiley-VCH [3] Photovoltaics-Christiana Honsberg and Stuart Bowden- https://www.pveducation.org/pvcdrom/introduction/introduction 2.自製教材 Self-made Materials： Summarized presentation materials for the topics. (% 英文內容 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	■ 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.
	● 英文期中/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)：100 % English

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	Group Discussion, Q&A
W2	Introduction to Semiconductors	Lecturing, Group Discussion, Q&A
W3	Energy bands and Carrier concentration	Lecturing, Q&A
W4	Energy bands and Carrier concentration	Lecturing, Q&A
W5	Energy bands and Carrier concentration	Lecturing, Group Discussion, Q&A
W6	Carrier transport phenomenon	Lecturing, Q&A
W7	Carrier transport phenomenon	Lecturing, Q&A
W8	Carrier transport phenomenon	Lecturing, Group Discussion, Q&A
W9	Mid-term Examination	Mid-term Examination
W10	Metal-semiconductor contact	Lecturing, Q&A
W11	Metal-semiconductor contact	Lecturing, Q&A
W12	Metal-semiconductor contact	Lecturing, Group Discussion, Q&A
W13	Types and Structure of Solar Cell	Lecturing, Group Discussion, Q&A
W14	Types and Structure of Solar Cell	Lecturing, Group Discussion, Q&A
W15	Energy Conversion Limitations in Solar Cells	Lecturing, Group Discussion, Q&A
W16	Concepts to Improve Solar Cells	Lecturing, Group Discussion, Q&A
W17	Review of the Course	Group Discussion, Q&A
W18	Final Examination	Final Examination

Note: The teacher may adjust the above weekly schedule as the course progresses, and the schedule is subject to change.

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	無線通訊 Wireless Communications	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

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： Wireless communications, Principle and practice, 2nd Edition, by Theodore S. Rappaport (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	■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： Assignments and quiz/surprise test
成績評量方式 Grading	■ 期中/期末考：以上英文試題，學生以英文答題 100%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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) ：Assignments and Quiz all in 100% English Final grading scheme (all in 100% English)：

課程進度Course Outline

週次	單元/主題	教學活動重點及教材內容

Week	Unit/Topic	Teaching Activities
W1	Introduction to wireless communication system and Basics of wireless communication	Lecturing, QA, Discussion
W2	EM waves, advantages and examples of wireless communication systems	Lecturing, QA, Discussion
W3	Modern wireless communication system: Introduction to cellular systems 1G to 5G.	Lecturing, QA, Discussion
W4	The cellular concepts: Introduction	Lecturing, QA, Discussion
W5	Frequency reuse	Lecturing, QA, Discussion
W6	Channel assignment strategies	Lecturing, QA, Discussion ,Quiz 1
W7	Handoff strategies	Lecturing, QA, Discussion ,Assignment 1
W8	Interference and system capacity	Lecturing, QA, Discussion
W9	Midterm exams	
W10	Improving coverage and capacity in cellular systems	Lecturing, QA, Discussion
W11	Mobile radio propagation: small scale fading and multipath	Lecturing, QA, Discussion
W12	Small scale multipath propagation	Lecturing, QA, Discussion
W13	Types of small-scale fading	Lecturing, QA, Discussion, Quiz 2
W14	Modulation techniques	Lecturing, QA, Discussion ,Assignment 2
W15	Frequency modulation vs Amplitude modulation	Lecturing, QA, Discussion
W16	Digital modulation	Lecturing, QA, Discussion
W17	Multiple access techniques for wireless communication	Lecturing, QA, Discussion
W18	End term exams	

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	微處理機與實習 Microprocessor and Practice	授課教師 Instructor	劉育松 Yu-Sung Liu

教學簡要說明

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  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)＿100＿＿％ 3.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：

<table>
<tr><td rowspan="4">成績評量方式
Grading</td><td>□　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.</td></tr>
<tr><td>■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</td></tr>
<tr><td>■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</td></tr>
<tr><td>□　其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</td></tr>
</table>

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	*Ch1 Preparation week and integrated development environment setup*	Understand Arduino and integrated development environment
W2	*Ch2 Basic concepts of electronic components*	Understand electronic parts and tools
W3	*Ch3 Basic concepts of computer programming*	Introduction to Arduino board and programming
W4	*Ch4 Digital signal and switches*	Switches, Ohm's law, and selective statements
W5	*Ch5 UART communication*	UART serial port communication
W6	*Ch6 LED seven-segment display*	LED seven-segment display, serial to parallel output IC
W7	*Ch7 SPI serial interface*	SPI serial interface and LED matrix display
W8	*Ch8 I2C serial communication*	I2C serial communication interface and LCD display
W9	*Midterm Examination*	*Oral report of project proposal*
W10	*Ch9 Analog Signal*	Analog Signal Processing
W11	*Ch10 Pulse width modulation*	Pulse width modulation of LED lights and motors
W12	*Ch11 Communication od digital devices*	Ultrasonic distance sensing, object-oriented programming and user-defined
W13	*Ch12 Motor control I*	DC motor control and stepper motor control
W14	*Ch13 Motor control II*	Servo motor control, digital filtering, data sorting programming
W15	*Ch14 Infrared remote control*	Infrared remote control, Schmitt trigger
W16	*Ch15 Bluetooth remote control*	Bluetooth remote control
W17	*Ch16 ESP8266 based Wi-Fi*	ESP8266 control board Wi-Fi IoT application implementation

W18	*Final Examination*	*Oral report of project design*

Certificate of Completion

Presented to

Yu-Sung Liu

Completed

English as a Medium of Instruction Program

15 July 2024 - 26 July 2024

Simon Futo
General Manager
English Language Centre
The University of Adelaide

CRICOS 00123M

5

CERTIFICATE

Studio Classroom presents this certificate to

劉育松

For completing Studio Classroom's

English as a Medium of Instruction Online Course Modules (20 Units)

- ✧ Introduction – Building EMI Mindset
- ✧ Fundamental concepts – Developing Higher-Order Thinking Skills
- ✧ Hands-on practice – Integrating Tech Tools with EMI
- ✧ Assessment strategies – Conducting Assessment Strategies

課程講師

Wendy Hsueh

Studio Classroom創辦人

Doris Brougham

空中英語教室 教育集團
Studio Classroom

中 華 民 國 1 1 3 年 0 8 月 0 7 日

Cambridge English

Certificate in EMI Skills

English as a Medium of Instruction

Certificate of Completion

This is to certify that

Yu-Sung Liu

has taken all the English language course modules:

- Language for lectures
- Language for seminars
- Language for small groups and practical sessions
- Language for tutorials and supervision
- Language for online communication
- Language for evaluation and feedback
- Language for developing and extending professional roles
- Language for fulfilling professional responsibilities

Saul Nassé
Chief Executive
Cambridge English Language Assessment

CAMBRIDGE ENGLISH
Language Assessment
Part of the University of Cambridge

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	電子工程導論 Introduction to Electronic Engineering	授課教師 Instructor	劉育松 Yu-Sung Liu

<table>
<tr><td colspan="2">教學簡要說明</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>課程教材
Material</td><td>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)_____%

3.其他補充說明 Others：</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)
Bilingual Teaching Strategies</td><td>■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：</td></tr>
<tr><td>成績評量方式
Grading</td><td>□　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.

■ 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
■ 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</td></tr>
</table>

	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 Electronic Engineering	1. Overview of the course and its objectives 2. Introduction to basic electronic concepts and terminology 3. Discussion of the history and development of electronic engineering
W2	Engineering Ethics and Professionalism	1. Overview of engineering ethics and professional responsibilities 2. Discussion of codes of conduct and ethical decision-making 3. Examination of case studies related to engineering ethics
W3	Getting Started with Programming	1. Fundamentals of programming languages 2. Basic programming knowledge such as data types, data containers, flow controls and logic 3. Basic programming practice
W4	Advanced Programming	1. Advanced programming concepts such as functions, classes and objects, etc. 2. Programming practice
W5	Introduction to Programming and Calculus Basics	Overview of Calculus concepts, including 1. limits, 2. derivatives, 3. integrals
W6	Calculus Applications and Advanced Programming Topics	Application of calculus concepts to real-world problems, such as optimization and rate of change
W7	Introduction to Programming and Elementary Mechanics	Kinematics and dynamics in one, two, and three dimensions
W8	Introduction to Programming and Advanced Mechanics	Energy, momentum, and rotation
W9	Midterm Examination	Oral report of project proposal
W10	Introduction to Circuit Design	1. Overview of circuit analysis concepts 2. Setup the tools and environment
W11	Circuit Design of Operational Amplifiers	1. Overview of operational amplifier concepts 2. Basic circuit design practice
W12	Circuit Design of BJT and MOS	1. Basic amplifier circuit design: Choose polarity,

	Amplifiers	bias, coupling capacitor, calculate gain and bandwidth.
		2. Differential amplifier circuit design: Design input impedance, calculate gain, choose bias and CMRR.
		3. Current mirror circuit design: Design matching ratio, choose mirror and bias
W13	Introduction to Microcontroller	1. Overview of microcontroller concepts
		2. Setup the tools and environment
W14	General Purpose Input and Output	1. Basic data types, flow controls and logic
		2. Introduction to functions of GPIO controls
W15	Concepts of Controlling Heavy Loads	1. Introduction to the concepts between signal control and power control
		2. Basic programming practice
W16	Analog Input and Output	1. Introduction to the concepts of ADC
		2. Implement the analog control programming
		3. Practice analog sensor and actuators
W17	Communication between Devices	1. Overview of microcontroller communication concepts
		2. Implement serial, I2C, SPI communications
W18	*Final Examination*	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	半導體元件與製程 Semiconductor Devices and Processes	授課教師 Instructor	方昭訓 Fang,Jau-Shiung
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：___Introduction to Semiconductor Manufacturing Techlologies__ (_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	■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：_50 %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. □ 英文期中/期末報告：_____%以英文表達。 The percentage of using English in midterm or final oral presentation

<table>
<tr><td colspan="2">■ 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)：</td></tr>
</table>

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	光電陶瓷材料 Electro-optic Ceramic Materials	授課教師 Instructor	藍吉特 Dr. Ranjit A. Patil

	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) 1. Ceramic Materials: Science and Engineering- C. Barry Carter, M. Grant Norton, Springer 2. SCI-published research articles 2.自製教材 Self-made Materials：Summarized materials for various topics, Special teaching on computer modeling. (% 英文內容 Percentage in English) 100 % 其他補充說明Others： Software resources
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. ● 英文期中/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

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	Group Discussion, Q&A
W2	Introduction to Ceramics	Lecturing, Group Discussion, Q&A
W3	Crystal Systems and Symmetry	Lecturing, Q&A
W4	Binary Compounds	Lecturing, Group Discussion, Q&A
W5	Binary Compounds - Computer Modelling	Lecturing, Q&A
W6	Complex Crystal Structures	Lecturing, Group Discussion, Q&A
W7	Complex Crystal Structures - Computer Modelling	Lecturing, Q&A
W8	Sintering and grain growth	Group Discussion, Q&A
W9	Mid-term Examination	Mid-term Examination
W10	Sintering and grain growth	Lecturing, Group Discussion, Q&A
W11	Single-crystal growth	Lecturing, Q&A
W12	Single-crystal growth	Lecturing, Group Discussion, Q&A
W13	Interaction with Light	Group Discussion, Q&A
W14	Interaction with Light	Lecturing, Q&A
W15	Electro-optic Response	Lecturing, Group Discussion, Q&A
W16	Electro-optic Devices	Lecturing, Q&A
W17	Review of the Class	Group Discussion, Q&A
W18	Final Examination	Final Examination

Note: The teacher may adjust to the above weekly schedule as the course progresses, and the schedule is subject to change.

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	高等熱力學 Advanced Thermodynamic	授課教師 Instructor	庫秉弦 Abhishek Kumar

<table>
<tr><td colspan="2" align="center">教學簡要說明</td></tr>
<tr><td colspan="2">1.請依照授課班級英文分級程度規劃課程計畫書。
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Please state bilingual instructor's teaching weeks and hours in course outline section.</td></tr>
<tr><td>課程教材
Material</td><td>1.指定課本書名 Book： Thermodynamics An Engineering Approach, by Yunus A. Cengel and Michael A. Boles (100%英文內容 Percentage in English)

2.Fundamentals of Thermodynamics, by Claus Borgnakke and R.E. Sonntag, SI Version, 9th ed., 2017, John Wiley ＆amp; Sons, Inc.

3.自製教材 Self-made Materials： Lecture notes (Percentage in English)100%

4.其他補充說明 Others： Lecture notes may cover several books</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)
Bilingual Teaching Strategies</td><td>☑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： Homework and Quiz</td></tr>
<tr><td>成績評量方式
Grading</td><td>☑ 期中/期末考：100%以上英文試題，學生以英文答題 100%。
　　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.

☑ 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

☑ 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

1. ☑ 其他方式(請說明中英文比例)Others (please state the proportion of Mandarin</td></tr>
</table>

		and English in grading)： Attendance and in-class participation 10%
	2.	Assignments and Quiz 15%
	3.	Mid-term 35%
	4.	Final-term 40%

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	Unit-1	Fundamental Concepts and Introduction
W2	Unit-1	Different kinds of energy, State of Equilibrium, and Zeroth Law and Fundamental Concept
W3	Unit-2	Laws of Thermodynamics
W4	Unit-2	Laws of Thermodynamics
W5	Unit-3	Exergy Analysis
W6	Unit-3	Exergy Analysis
W7	Unit-4	Thermodynamic Properties Relations
W8	Unit-4	Thermodynamic Properties Relations
W9	**Midterm**	**Open Book**
W10	Unit-5	Properties of Pure Substance
W11	Unit-5	Properties of Pure Substance
W12	Unit-5	Properties of Pure Substance
W13	Unit-6	Vapor Power Cycle
W14	Unit-6	Vapor Power Cycle
W15	Unit-7	Gas Power Cycle
W16	Unit-8	Thermodynamics of Reacting and Multicomponent Systems
W17	Unit-8	Thermodynamics of Reacting and Multicomponent Systems
W18	**Final-term**	**Open Book**

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	飛航安全 Aviation Safety	授課教師 Instructor	王士嘉 Wang, Shih-Chia

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:_Aircraft Accidents Investigation (_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	■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
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_100_%。 　　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■ 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 must be included) □ 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		
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	Accidents Illustrations _1	Look for aircraft accident investigations
W4	Accidents Illustrations _2	Look for aircraft accident investigations
W5	Fuel Pump Operation	Schematics knowledge shown
W6	Safety technique demonstration	Aircraft festered skill demonstration
W7	1st Term Evaluation	Skill Team test
W8	Technology Perspective-1	Aircraft Material Point of View
W9	Technology Perspective-2	Mid-Air Collision Investigation
W10	Technology Perspective-3	Site Survey
W11	Technology Perspective-4	Investigation Management
W12	Site Safety	Share with students and ask for feedback
W13	Field Trip	Field trip to Taiwan Transport. Safety Board,
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
W18	Final Evaluation	Grade and wrap up

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

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)＿＿＿＿％ 3.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：＿＿＿＿％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. ■ 英文期中/期末報告：＿＿＿＿％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	Introduce to Aviation Quality Assurance	Overview of the entire course
W2	Introduce to Aviation Quality Assurance	Introduce to Aviation Quality Assurance
W3	Aviation Quality Assurance Regulation	Introduce to Aviation Quality Assurance Regulation
W4	Aviation Quality Assurance Regulation	Introduce to Aviation Quality Assurance Regulation
W5	Introduce to Aviation Certification	Introduce to Aviation Certification
W6	Introduce to Aviation Certification	/Project Presentation Introduce to Aviation Certification
W7	Introduce to FAA Type Certification	Introduce to FAA Type Certification /Project Presentation
W8	Introduce to FAA Type Certification	Introduce to FAA Type Certification /Project Presentation
W9	Mid-term Exam	Written exam in class
W10	Introduce to CAA Type Certification	Introduce to CAA Type Certification /Project Presentation
W11	Introduce to CAA Type Certification	Introduce to CAA Type Certification /Project Presentation
W12	LSA Certification	LSA Certification /Project Presentation
W13	LSA Certification	LSA Certification /Project Presentation
W14	UAV Certification	UAV Certification /Project Presentation
W15	UAV Certification	UAV Certification /Project Presentation
W16	eVTOL Certification	eVTOL Certification /Project Presentation
W17	eVTOL Certification	eVTOL Certification /Project Presentation
W18	Final Report	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	專業英文 English for Specific Purposes	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

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：English for everyone level 1 beginner course book by Rachel Harding 　(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	■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100%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■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 English for beginners: Introduction to the English alphabet and pronunciation, numbers	Lecturing, QA, Discussion
W2	Read and write words: vocabulary	Lecturing, QA, Discussion
W3	Learning words vocabulary	Lecturing, QA, Discussion
W4	Basic grammar	Lecturing, QA, Discussion
W5	Reading and writing of short sentences, simple text	Lecturing, QA, Discussion
W6	Making sentences	Lecturing, QA, Discussion
W7	Everyday English: Basic English greetings and expressions Meeting people for the first time	Lecturing, QA, Discussion
W8	Everyday English : Effectively describing ' Myself' (introduction, interests, aims, daily routine)	Lecturing, QA, Discussion
W9	Everyday English: Describing people and places Expressing likes, dislikes, and preferences	Lecturing, QA, Discussion
W10	Mid term	
W11	Everyday English: Simple spoken English conversation in Class Ask and answer the questions	Lecturing, QA, Discussion
W12	Reading and writing basics: Reading simple texts and comprehension, writing basic sentences and paragraphs	Lecturing, QA, Discussion
W13	Practical communication skills in English: Making appointments and arrangements, giving directions and instructions Talking about the weather and seasons	Lecturing, QA, Discussion
W14	Topic presentation in class: Classroom activities , conversation and group discussion on several topics	Lecturing, QA, Discussion
W15	Topic presentation in class: Classroom activities , conversation in English	Lecturing, QA, Discussion
W16	Classroom activities , conversation in	Lecturing, QA, Discussion

	English	
W17	Revision classes	Lecturing, QA, Discussion
W18	End 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	專業英文 English for Specific Purposes	授課教師 Instructor	迪克莎喬娜 Diksha Chauhan

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：English for everyone level 1 beginner course book by Rachel Harding 　(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	■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100%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■ 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 ■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 English for beginners: Introduction to the English alphabet and pronunciation, numbers	Lecturing, QA, Discussion
W2	Read and write words: vocabulary	Lecturing, QA, Discussion
W3	Learning words vocabulary	Lecturing, QA, Discussion
W4	Basic grammar	Lecturing, QA, Discussion
W5	Reading and writing of short sentences, simple text	Lecturing, QA, Discussion
W6	Making sentences	Lecturing, QA, Discussion
W7	Everyday English: Basic English greetings and expressions Meeting people for the first time	Lecturing, QA, Discussion
W8	Everyday English : Effectively describing ' Myself' (introduction, interests, aims, daily routine)	Lecturing, QA, Discussion
W9	Everyday English: Describing people and places Expressing likes, dislikes, and preferences	Lecturing, QA, Discussion
W10	Mid term	
W11	Everyday English: Simple spoken English conversation in Class Ask and answer the questions	Lecturing, QA, Discussion
W12	Reading and writing basics: Reading simple texts and comprehension, writing basic sentences and paragraphs	Lecturing, QA, Discussion
W13	Practical communication skills in English: Making appointments and arrangements, giving directions and instructions Talking about the weather and seasons	Lecturing, QA, Discussion
W14	Topic presentation in class: Classroom activities , conversation and group discussion on several topics	Lecturing, QA, Discussion
W15	Topic presentation in class: Classroom activities , conversation in English	Lecturing, QA, Discussion
W16	Classroom activities , conversation in	Lecturing, QA, Discussion

	English	
W17	Revision classes	Lecturing, QA, Discussion
W18	End 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	計算機程式 Computer Programming	授課教師 Instructor	許弘毅 Horng-Yi, Hs

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：____ C How to Program: With Case Studies in Applications and Systems Programming, 9/e __ (___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：使用英文教材輔以中文說明
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__100___%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：_____%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

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 Computers and C	電腦和 C 語言介紹
W2	Intro to C Programming	C 程式設計入門
W3	Structured Program Development	講解：結構化程式開發
W4	Program Control	講解：程式控制
W5	Functions	講解：函數
W6	Arrays	講解：陣列
W7	Pointers	講解：指標
W8	Characters and Strings	講解：字元和字串
W9	Mid-term Exam	期中考
W10	Formatted Input / Output	講解：格式化輸入/輸出
W11	Structures, Unions, Bit Manipulation and Enumerations	講解：結構、聯合、位元操作和列舉
W12	File Processing	講解：檔案處理
W13	Data Structuresinary Trees	講解：資料結構：二元樹
W14	Computer-Science Thinking: Sorting Algorithms and Big O	講解：電腦科學思維：排序演算法和 Big O
W15	Preprocessor	講解：預處理器
W16	Other Topics	講解：其他主題
W17	Presentation	上台報告
W18	Final Exam	期末考

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	計算機程式 Computer Programming	授課教師 Instructor	許弘毅 Horng-Yi, Hs

	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：＿＿＿ C How to Program: With Case Studies in Applications and Systems Programming, 9/e ＿ (＿＿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：使用英文教材輔以中文說明

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＿＿100＿%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：＿＿＿＿%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

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 to Computers and C	電腦和 C 語言介紹
W2	Intro to C Programming	C 程式設計入門
W3	Structured Program Development	講解：結構化程式開發
W4	Program Control	講解：程式控制
W5	Functions	講解：函數
W6	Arrays	講解：陣列
W7	Pointers	講解：指標
W8	Characters and Strings	講解：字元和字串
W9	Mid-term Exam	期中考
W10	Formatted Input / Output	講解：格式化輸入/輸出
W11	Structures, Unions, Bit Manipulation and Enumerations	講解：結構、聯合、位元操作和列舉
W12	File Processing	講解：檔案處理
W13	Data Structuresinary Trees	講解：資料結構：二元樹
W14	Computer-Science Thinking: Sorting Algorithms and Big O	講解：電腦科學思維：排序演算法和 Big O
W15	Preprocessor	講解：預處理器
W16	Other Topics	講解：其他主題
W17	Presentation	上台報告
W18	Final Exam	期末考

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	周國達 Chou, Kuo-Da

<table>
<tr><td colspan="2" align="center">教學簡要說明</td></tr>
<tr><td colspan="2">

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.
</td></tr>
<tr><td>課程教材

Material</td><td>

☐ 指定課本書名 Book：**Intelligent Electric Vehicles** (_50_%英文內容 Percentage in English)

☐ 自製教材 Self-made Materials：採用英文之比例 (Percentage in English)_50_%

☐ 其他補充說明 Others：
</td></tr>
<tr><td>雙語教學方式

(可多選，或簡述)

Bilingual Teaching

Strategies</td><td>

■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：
</td></tr>
<tr><td>成績評量方式

Grading</td><td>

■　期中/期末考：__30_%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.

■　期末報告：_100_%以英文表達。

The percentage of using English in midterm or final oral presentation
</td></tr>
</table>

■ 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)：		

<table>
<tr><td colspan="3" align="center">課程進度 Course Outline</td></tr>
<tr>
<td align="center">週次

Week</td>
<td align="center">單元/主題

Unit/Topic</td>
<td align="center">教學活動重點及教材內容

Teaching Activities</td>
</tr>
<tr>
<td align="center">W1</td>
<td align="center">Course outline</td>
<td>Cource overview and features</td>
</tr>
<tr>
<td align="center">W2</td>
<td align="center">Brief history of the Electric vehicles</td>
<td>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.</td>
</tr>
<tr>
<td align="center">W3</td>
<td align="center">The electric vehicle transmission system</td>
<td rowspan="3">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.</td>
</tr>
<tr>
<td align="center">W4</td>
<td align="center">The electric vehicle transmission system</td>
</tr>
<tr>
<td align="center">W5</td>
<td align="center">The electric vehicle transmission system</td>
</tr>
<tr>
<td align="center">W6</td>
<td align="center">Vehicle Dynamics</td>
<td rowspan="3">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 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.</td>
</tr>
<tr>
<td align="center">W7</td>
<td align="center">Vehicle Dynamics</td>
</tr>
<tr>
<td align="center">W8</td>
<td align="center">Vehicle Dynamics</td>
</tr>
<tr>
<td align="center">W9</td>
<td align="center">Motor</td>
<td>In this chapter, we'll explore the basic electromagnetic laws that enable motors to function, including the</td>
</tr>
</table>

W10	Motor	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.
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	Batteries	
W13	Group Discussion Report	
W14	Group Discussion Report	
W15	Group Discussion Report	
W16	Group Discussion Report	
W17	Group Discussion Report	
W18	Group Discussion 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	協同產品設計 Collaborative product design	授課教師 Instructor	庫秉弦 Abhishek Kumar

<table>
<tr><td colspan="4" align="center">教學簡要說明</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>課程教材
Material</td><td colspan="3">1.指定課本書名 Book： Product Development and Design for Manufacturing: A Collaborative Approach to Producibility and Reliability, Second Edition, by John Priest and Jose Sanchez (100%英文內容 Percentage in English)

2.Product design and Development by Karl T. Ulrich. Steven D. Eppinger

3.自製教材 Self-made Materials：Lecture notes (Percentage in English)100%

4.其他補充說明 Others：Lecture notes may cover several books</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)
Bilingual Teaching Strategies</td><td colspan="3">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：Assignment and Quiz</td></tr>
<tr><td>成績評量方式
Grading</td><td colspan="3">期中/期末考：100%以上英文試題，學生以英文答題 100%。

The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.

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

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</td></tr>
</table>

	1. 其他方式(請說明中英文比例)Others (please state the proportion of Mandarin and English in grading)：Attendance, Participation, Homework, Quiz 25%
	2. Midterm Test or Project 35%
	3. Final Test or Project 40%

<table>
<tr><th colspan="3">課程進度Course Outline</th></tr>
<tr><th>週次
Week</th><th>單元/主題
Unit/Topic</th><th>教學活動重點及教材內容
Teaching Activities</th></tr>
<tr><td>W1</td><td>Unit- 1</td><td>Design and Collaboration</td></tr>
<tr><td>W2</td><td>Unit- 1</td><td>Introduction to product design and development, Product life-cycle</td></tr>
<tr><td>W3</td><td>Unit-1</td><td>Product design, Product design steps, and product analysis</td></tr>
<tr><td>W4</td><td>Unit-2</td><td>Value engineering concepts, Problem Identification and VEJP, Function analysis</td></tr>
<tr><td>W5</td><td>Unit-2</td><td>Functional analysis system technique, Case study on value engineering</td></tr>
<tr><td>W6</td><td>Unit-3</td><td>Quality function deployment, Computer-aided design, Robust design</td></tr>
<tr><td>W7</td><td>Unit-3</td><td>Ergonomics in product design and Design for X</td></tr>
<tr><td>W8</td><td>Unit-4</td><td>Design guidelines for different processes</td></tr>
<tr><td>W9</td><td>Midterm</td><td>Open book</td></tr>
<tr><td>W10</td><td>Unit-4</td><td>Rapid prototyping</td></tr>
<tr><td>W11</td><td>Unit-5</td><td>Collaborative assembly design</td></tr>
<tr><td>W12</td><td>Unit-5</td><td>Collaborative assembly planning</td></tr>
<tr><td>W13</td><td>Unit-6</td><td>Producibility and Reliability</td></tr>
<tr><td>W14</td><td>Unit-6</td><td>Producibility and Reliability</td></tr>
<tr><td>W15</td><td>Unit-7</td><td>Product Development Economics</td></tr>
<tr><td>W16</td><td>Unit-7</td><td>Patents and Intellectual Property</td></tr>
</table>

W17	Unit-8	Managing Projects
W18	**Final-term**	**Open Book**

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 LI ,MENG TSE

<table>
<tr><td colspan="4" align="center">教學簡要說明</td></tr>
<tr><td colspan="4">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.</td></tr>
</table>

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)__80__% 3.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：＿＿＿%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.

□　英文期中/期末報告：＿＿＿％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	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**	**Student's Oral Presentation**
W10	Part-6: The Subsystems of an	Subsystems of an Autonomous Unmanned Vehicle

	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**	**Student's 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	數位影像處理實務 Application for Digital Image Processing	授課教師 Instructor	李廣齊 Lee ,Kuang-Chyi

<table>
<tr><td colspan="4" align="center">教學簡要說明</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>課程教材

Material</td><td colspan="3">1.指定課本書名 Book： J. Han, M. Kamber & J. Pei, Data Mining: Concepts and Techniques, Morgan Kaufmann Publishers(Elsevier) (>70%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) >70%

3.其他補充說明 Others：</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)

Bilingual Teaching Strategies</td><td colspan="3">■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：</td></tr>
</table>

成績評量方式 Grading	■期中/期末考：__70___%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. □英文期中/期末報告：_____%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)：

<div align="center">

課程進度 Course Outline

</div>

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 Data Mining.	Oral
W2	Data Preprocessing	Oral
W3	Algorithm of Perception	Oral
W4	Introduction to Linux System	Oral & Practice
W5	Introduction to Anaconda	Oral & Practice

W6	Python Programming	Oral & Practice
W7	Introduction to Neural Network	Oral
W8	Midterm Project Presentation	Oral
W9	Midterm Exam	
W10	Association Analysis	Oral
W11	Introduction to Deep Learning	Oral
W12	Classification and Prediction	Oral
W13	MNIST dataset.	Oral & Practice
W14	Case Study(I): Get Data	Oral & Practice
W15	Case Study(II): Training	Oral & Practice
W16	Case Study(III): Inference	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	智慧型控制 Intelligent Control	授課教師 Instructor	李廣齊 Lee ,Kuang-Chyi

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： A. Zilouchian & M. Jamshidi, Intelligent Control Systems Using Soft Computing Methodologies (>70%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	■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：_70%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. □英文期中/期末報告：_____%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 to Intelligent Control Systems	Oral
W2	Foundations of Neural Networks	Oral
W3	Neural Network Architectures	Oral
W4	Fundamentals of Fuzzy Logic Control	Oral & Practice
W5	Designing Fuzzy Logic Controllers	Oral & Practice
W6	Overview of Genetic Algorithms	Oral & Practice

W7	Genetic Algorithms for Optimization	Oral
W8	Midterm Project Presentation	Oral
W9	Midterm Exam	
W10	Ant Colony and Other Swarm Intelligent Algorithms	Oral
W11	Adaptive Neural-Based Fuzzy Systems	Oral
W12	Neural Networks for Control Applications	Oral
W13	Fuzzy Logic for Decision Making	Oral & Practice
W14	Advanced Topics in Genetic Algorithms	Oral & Practice
W15	Ant Colony Optimization in Control Systems	Oral & Practice
W16	Current Trends in Intelligent Control Systems	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	精實製造 Lean Manufacturing	授課教師 Instructor	江育民 Yu-Min Chiang

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)＿＿>80＿＿% 3.其他補充說明 Others：參考書目： Jeffrey Liker, The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer
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_70_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □　英文期中/期末報告：＿＿＿%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	Course introduction	Oral/ World Class Manufacturing
W2	Production Systems	Oral/ Layouts, Shortages, Forecasting, Inventory
W3	7 Wastes, 5S Principles	Oral & Practice/A3 Report
W4	Toyota Production System (TPS)	Oral & Practice/ Flow lines, Cycle times, Line Balancing
W5	TPS	Oral & Practice/ Standard Work
W6	TPS	Oral/ SMED
W7	TPS	Oral & Practice/ Pull Production, Kanban
W8	TPS	Oral/ Pull Production, JIT
W9	Midterm Exam	
W10	VSM	Oral/ Value Stream Mapping
W11	TQC	Oral/ Quality, Statistical Process Control
W12	TQC	Oral & Practice/ Autonomation
W13	TPM	Oral/OEE, Continuous Process Improvement
W14	Manufacturing Strategy	Oral & Practice/ Supply Chain
W15	Lean 4.0	Oral
W16	Green Value Stream	Oral & Practice
W17	Final Project Presentations	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	專業英文 English for Specific Purposes	授課教師 Instructor	陳柏瑄 Po-Hsuan Chen

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)__50__% 3.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：_____%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. ■ 英文期中/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	Course Introduction & Vocabulary Basics	Introduce the course and expectations. Teach common technical prefixes and suffixes. Conduct icebreaker using engineering-related vocabulary.
W2	Circuit Theory	Introduce Ohm's Law and basic circuit rules. Label simple series and parallel circuit diagrams. Practice explaining current flow using vocabulary.
W3	Electronic Components	Introduce key components: resistors, capacitors, diodes, etc. Use images/real objects to match names and functions. Practice describing each component's role in a sentence.
W4	Signals and Systems	Explain analog vs. digital signals with examples. Analyze signal characteristics: frequency, amplitude. Use charts/graphs to describe systems behavior.
W5	PVQC Test Review	Review vocabulary from previous units. Conduct sample PVQC-style quizzes. Use vocabulary games and team challenges.
W6	Digital Circuits、Analog Circuits	Compare digital and analog systems with examples. Introduce logic gates and their functions. Create and analyze simple logic circuits.
W7	Microprocessor Architecture	Discuss the parts of a microprocessor (ALU, memory, etc.). Label architecture diagrams. Describe instruction cycles in pairs.
W8	Power Systems and Energy Technologies	Explore types of power generation (traditional vs. renewable). Discuss advantages/disadvantages of energy sources. Create posters or slides on an energy system.

W9	Control Systems	Introduce feedback loops and system stability. Analyze examples: elevator, air conditioner systems. Use diagrams to explain input/output relationships.
W10	Midterm (Oral presentation)	Students deliver oral presentations on selected topics. Peer and teacher evaluation using a rubric. Focus on fluency, technical accuracy, and visual aids.
W11	Communication Systems	Explore wired and wireless systems (e.g., fiber optics, radio). Label communication system diagrams. Match vocabulary with their definitions.
W12	Machine Learning and AI	Introduce key AI/ML terms and concepts. Discuss applications in engineering. Read a short article and summarize the content.
W13	Machine Learning and AI	Analyze a basic algorithm or flowchart. Pair work: explain AI concepts using simple English. Case study discussion: AI in robotics or energy systems.
W14	Electric Vehicle	Discuss EV structure: motor, battery, control systems. Compare EVs with traditional cars.
W15	Robot	Introduce types and functions of robots. Label robot parts and describe their tasks.
W16	Final report	Guide students in structuring a technical report. Focus on introduction, method, and conclusion sections. Review referencing and citation basics.
W17	Final report	Practice oral presentation delivery in small groups. Give feedback on pacing, pronunciation, and visuals. Final vocabulary check and Q&A practice.
W18	Final term (Oral presentation)	Conduct final oral presentations. Evaluate with rubric: fluency, structure, terminology use. Class reflection: "What I learned this semester".

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 Huang Hung-Ji

<table>
<tr><td colspan="4" align="center">教學簡要說明</td></tr>
<tr><td colspan="4">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.</td></tr>
</table>

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)＿＿100＿＿% 3.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＿100＿＿%。 　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：＿＿＿＿%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)：

<table>
<tr><td colspan="3" align="center">課程進度 Course Outline</td></tr>
<tr><td align="center">週次
Week</td><td align="center">單元/主題
Unit/Topic</td><td align="center">教學活動重點及教材內容
Teaching Activities</td></tr>
<tr><td align="center">W1</td><td align="center">Introduction of photonic detection and</td><td align="center">Lecturing and discussion</td></tr>
</table>

1

		spectral analysis	
W2	Electromagnetic waves	Lecturing and discussion
W3	Incandescent light bulb and halogen lamp	Lecturing and discussion
W4	Low-pressure discharge lamps	Lecturing and discussion
W5	High-pressure discharge lamps	Lecturing and discussion
W6	Solid state lamps	Lecturing and discussion
W7	Laser	Lecturing and discussion
W8	Photodiode	Lecturing and discussion
W9	1st midterm exam	
W10	Photo-multiplexing tube	Lecturing and discussion
W11	CCD and Photo-imaging	Lecturing and discussion
W12	Optical microscopy	Lecturing and discussion
W13	Imaging scanning optics	Lecturing and discussion
W14	Imaging by scanning probes	Lecturing and discussion
W15	Imaging by scanning probes	Lecturing and discussion
W16	2nd midterm exam	
W17	Final report	Personal oral report
W18	Final report	Personal oral 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	計算機概論 Introduction to Computer	授課教師 Instructor	徐茂修 Hsu Mao-Hsiu

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>Python 零基礎+ChatGPT 高效率 學程式設計與運算思維</u> 　（＿55　％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)＿70＿＿％ 3.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：＿＿＿％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. 　　■　英文期中/期末報告：＿80　％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	Course Introduction RISC-V Overview	Course Introduction RISC-V Overview
W2	Introduction to RISC-V Instruction Set	Introduction to RISC-V Instruction Set
W3	Understanding Instruction Formats and Pseudoinstructions	Understanding Instruction Formats and Pseudoinstructions
W4	The Modularity of RISC-V as an ISA	The Modularity of RISC-V as an ISA
W5	Privileges and the Memory Model	Privileges and the Memory Model
W6	Python Language for RISC-V	Python Language for RISC-V
W7	Writing and Debugging RISC-V and Python Code	Writing and Debugging RISC-V and Python Code
W8	High-Level Languages for RISC-V (Python Programming)	High-Level Languages for RISC-V (Python Programming)
W9	Midterm exam	
W10	Python Introduction and Setting up the Environment	-Introduction to programming - Choosing Python as a languag
W11	Setting up the Python environment	- Exploring Python IDEs
W12	Python Basic Syntax and Data Types	- Input/output - Comments - Variables - Data types (integers, floats, strings, etc.) - Typecasting
W13	Operators in Python	- Arithmetic operators - Assignment operators - Comparison operators - Logical operators - Identity and membership operators - Bitwise operators
W14	Strings in Python	- Creating and formatting strings - Indexing and slicing - String methods
W15	Lists in Python	- Creating lists

		- Properties of lists
		- Indexing and slicing lists
		- List methods
		- Modifying lists
W16	Tuples in Python	- Syntax and properties
		- Indexing and slicing tuples
		- Tuple methods
W17	Sets in Python	- Syntax
		- Updating sets
		- Set operations
		- Set methods
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	專業英文 Professional English	授課教師 Instructor	徐茂修 Hsu Mao-Hsiu

<table>
<tr><td colspan="2" align="center">教學簡要說明</td></tr>
<tr><td colspan="2">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.</td></tr>
<tr><td>課程教材
Material</td><td>1.指定課本書名 Book： <u>understanding artificial intelligence fundamentals and applications</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)__100____%

3.其他補充說明 Others：</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)
Bilingual Teaching Strategies</td><td>■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：</td></tr>
<tr><td>成績評量方式
Grading</td><td>□　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.

■ 文期中/期末報告：___80___ %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)：</td></tr>
<tr><td colspan="2" align="center">課程進度　Course Outline</td></tr>
</table>

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容
W1	introduction	introduction
W2	neural network	neural network
W3	machine vision	machine vision
W4	nature language	nature language
W5	language processing	language processing
W6	autonomous vehicle	autonomous vehicle
W7	drone	drone
W8	healthcare	healthcare
W9	Midterm exam	
W10	retail manufacturing agricuture	retail manufacturing agricuture
W11	smart city	smart city
W12	computing platform	computing platform
W13	kneron neural	kneron neural
W14	processing unit	processing unit
W15	object detection	object detection
W16	python installation	python installation
W17	image detection	image detection
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	機器學習 Machine Learning	授課教師 Instructor	林武杰 LIN,WU-CHIEH

<table>
<tr><td colspan="4" align="center">教學簡要說明</td></tr>
<tr><td colspan="4">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.</td></tr>
<tr><td>課程教材
Material</td><td colspan="3">1.指定課本書名 Book： <u>Introduction to Machine Learning</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：</td></tr>
<tr><td>雙語教學方式
(可多選，或簡述)
Bilingual Teaching Strategies</td><td colspan="3">☑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：上台以英文進行論文報告問答</td></tr>
<tr><td>成績評量方式
Grading</td><td colspan="3">□ 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.

☑ 英文期中/期末報告：_60_%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)：隨堂練習、報告 60%、學期專案 60%</td></tr>
</table>

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	Introduction	▐ What is machine learning ▐ Examples of machine learning applications
W2	Supervised learning	▐ Learning a class from ▐ examples Vapnik-
W3	Supervised learning	▐ Learning multiple ▐ classes Regression ▐ Dimension curses of a supervised learning algorithms
W4	Bayesian Decision Theory	▐ Bayesian ▐ Theory ▐ Classification
W5	Parametric methods	▐ Maximum likelihood estimation Parametric
W6	Multivariate methods	▐ Multivariate data ▐ Estimation of missing values Multivariate
W7	Multivariate methods	▐ Multivariate ▐ classification
W8	Dimensionality reduction	▐ Principal component ▐ analysis Linear
W9	midterm	Finish exercises
W10	Decision trees	▐ Univariate trees ▐ Learning rules
W11	Kernel machines	▐ Optimal separating ▐ hyperplane Support ▐ vector machine Kernel
W12	Multilayer perceptron	▐ The perceptron ▐ Multilayer ▐ perceptron
W13	Deep learning	▐ Convolution Neural Network
W14	Deep learning	▐ Encoder – decoder ▐ Recurrent Neural
W15	Paper presentation and discussions	
W16	Paper presentation and discussions	
W17	Term project presentation	
W18	Term project presentation	

課程進度 Course

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

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：Big-Data Analytics for Cloud, IoT and Cognitive Computing, First Edition. Kai Hwang and Min Chen (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	■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 30 ％。 　　The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □　英文期中/期末報告：_____%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	• What is Big Data: many Vs • Open Data

		• Big Data Analysis Tools
W2	Analysis Tools	• Analysis Tools: R & Python
W3	Cases Study 1	• (Problem Based Learning) • Analyzing 1.1 Billion NYC Taxi and Uber Trips
W4	Getting to Know Your Data	• Data Objects and Attribute Types • Basic Statistical Descriptions of Data
W5	Getting to Know Your Data	• Data Visualization • Measuring Data Similarity and Dissimilarity
W6	Data Pre-processing	• Data Preprocessing: An Overview • Data Quality • Major Tasks in Data Preprocessing
W7	Data Pre-processing	• Data Cleaning • Data Integration
W8	Data Pre-processing	• Data Reduction • Data Transformation and Data Discretization
W9	Midterm	Midterm exam
W10	Outlier Detection	• Outlier and Outlier Analysis & Detection Methods • Statistical Approaches • Proximity-Base Approaches • Clustering-Base Approaches • Classification Approaches
W11	Big Data Processing & Management	• Big Data Storage Technologies • Hadoop Ecosystem • HDFS
W12	Big Data Processing & Management	• Big Data Storage Technologies • Hadoop Ecosystem • HDFS
W13	Research Challenges and Trends	• Big Data Applications • Big Data: Analytical Solutions • Research Challenges and Trends
W14	Research Challenges and Trends	• Big Data Applications • Big Data: Analytical Solutions • Research Challenges and Trends
W15	Research Challenges and Trends	• Big Data Applications • Big Data: Analytical Solutions • Research Challenges and Trends
W16	Big Data Security	• A Survey on Big Data Security Issues Challenges and Techniques • Data-centric Security
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

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)_75_% 3.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：_____%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. □ 英文期中/期末報告：_____%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)：

<table>
<tr><th colspan="3">課程進度 Course Outline</th></tr>
<tr>
<th>週次
Week</th>
<th>單元/主題
Unit/Topic</th>
<th>教學活動重點及教材內容
Teaching Activities</th>
</tr>
<tr><td>W1</td><td>Introduction</td><td>Basics of EPC Training (PPT)</td></tr>
<tr><td>W2</td><td>Electronic Product Code</td><td>Basics of EPC Training (PPT)</td></tr>
<tr><td>W3</td><td>Identification Keys</td><td>Basics of EPC Training (PPT)</td></tr>
<tr><td>W4</td><td>The Secrets of RFID</td><td>Basics of EPC Training (PPT)</td></tr>
<tr><td>W5</td><td>Benefits of EPC Applications</td><td>Basics of EPC Training (PPT)</td></tr>
</table>

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	EPC Global Certification	EPC Certification Exam Training (PPT)
W17	**Presentation**	**Oral Presentation**
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	科技論文寫作 Research Writing for Science and Technology	授課教師 Instructor	蔡柏祥 TSAI, PO-HSIANG

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:_ Writing Up Research: Experimental Research Report Writing for Students of English, Weissberg and Buker, 2008, 文鶴_ (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	■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__60_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告:_____%以英文表達。 The percentage of using English in midterm or final oral presentation

<table>
<tr><td colspan="2">■ 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)：</td></tr>
</table>

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	W1	Introduction
W2	W2	Academic Research Writing
W3	W3	Revisions and Response to Reviewers
W4	W4	Revisions and Response to Reviewers
W5	W5	Article Search and Library Access
W6	W6	Article Search and Library Access
W7	W7	Academic writing approach
W8	W8	Academic writing approach
W9	W9	Mid-term exam

W10	W10	Abstract
W11	W11	Introduction
W12	W12	Method
W13	W13	Materials
W14	W14	Results
W15	W15	Results
W16	W16	Discussion
W17	W17	Discussion
W18	W18	Final-term 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	作業系統 Operation System	授課教師 Instructor	黃世昌 HUANG,SHIH-CHANG

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：Abraham Silberschatz et.al. Operating System Concepts, 10th Edition",WILLY, ISBN: 1119454085 (_100_%英文內容 Percentage in English) 1.自製教材 Self-made Materials：採用英文之比例 (Percentage in English)__80__% 2.其他補充說明 Others：NA
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：__80___%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. □ 英文期中/期末報告：_____%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)：

<div align="center">

課程進度 Course Outline

</div>

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 to OS
W3	System structures	System structures introduction
W4	Process concept	Process concept and operation
W5	Multithreaded programming	Multithreaded programming and exercise
W6	Process scheduling	Process scheduling concept and algorithms
W7	Synchronization	Synchronization (IPC)
W8	Deadlocks	Deadlocks concept and Banker's algorithms

W9	<mark>Midterm</mark>	<mark>Midterm</mark>
W10	Memory-management strategies	Memory-management strategies
W11	Virtual-memory management	Virtual-memory management and scheduling
W12	File system	File system introduction
W13	File system	File system operation
W14	Implementing file systems	Mass-Storage Systems
W15	I/O Systems	I/O Systems introduction
W16	System Protection	System Protection and encryption algorithms
W17	System Security	System Security, virus, and firewall
W18	<mark>Final</mark>	<mark>Final</mark>

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 Microprocessor	授課教師 Instructor	陳國益 HUANG,SHIH-CHANG

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)_100__% 3.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_100_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：＿＿＿%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

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	NUC140 Cortex-M0Introduction	ARM Cortex-M0 Introduction
W2	NUC140 development	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	GPIO 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-M0 MCU Interrupt Vector,Timer,WatchDog
W17	I2C experiments	I2C access EEPROM
W18	SPI experiments	SPI protocol

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	軟體工程 Software Engineering	授課教師 Instructor	Yung-Tsung Hou 侯雍聰

教學簡要說明
This course aims at giving students an understanding of basic software development concepts, terminologies and technologies. The student will learn the theoretical and practical knowledge from both the technical and organization perspectives. Students will gain essential information about the software development lifecycle which includes phases of requirements,, analysis, design, coding, testing, implementing, and maintenance.

課程教材 Material	1.指定課本書名 Book： _____Head First Software Development_____ 　　(___100___%英文內容 Percentage in English) 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___% 3.其他補充說明 Others：The use of AI

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■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：_____%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. ■　英文期中/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 of Software Engineer	Learn what is great software development: pleasing your customer.
W2	Basic Software Development Approaches	Waterfall development and software development life cycle
W3	Gathering Requirements	Knowing what the customer wants Bluesky with the customer Cubicle conversation Playing planning poker
W4	Estimate Iteration Cycles	Put assumptions on trial User story estimate The total project estimate
W5	Project Planning: Planning for success	Prioritize with the customer Milestone 1.0 The Big Board method
W6	User Stories and Tasks	UML use case Getting to the real work Unexpected tasks and the burn-down rate Velocity estimation
W7	Good-Enough Design	Getting it done with great design Spotting multiple responsibilies in your design
W8	Single-responsibility Principle	Going from multiple responsibilies to a single responsibility Obey the SRP, but also be DRY.

		The post refactoring
W9	Midterm	Midterm Report
W10	Version Control	Defensive development The functionality of version control tools Tags, branches, and trunks
W11	Building the Code	Building your project in one step Projects, properties, targets, tasks Build scripts
W12	Testing and Continuous Integration I	Black-box testing Grey-box
W13	Testing and Continuous Integration II	Automate your tests with a testing framework Use a coverage report to
W14	Test-Driven Development	Holding your code accountable Test FIRST, not last
W15	Ending an Iteration: It's all coming together.	System testing The
W16	Delivering the Software	Completing the iteration's work Passing all your tests Satisfying your customer
W17	Bugs: Squashing bugs like a pro	Priority one: get things buildable Figure out what functionality works
W18	Final	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	大數據彙整與建模英文： Big Data and Modeling	授課教師 Instructor	胡念祖 Nian-Ze Hu

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：_The Data Warehouse Toolkit, 3rd Edition___(　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	■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 60_%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：_____%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	遠距平台使用教學 Introduction to Distance Learning	口頭說明
W2	資料處理基本技巧（1） Fundamental Skills about data processing #1	上機實作，助教協助解決問題
W3	資料處理基本技巧（2） Fundamental Skills about data processing #2	上機實作，助教協助解決問題
W4	資料處理基本技巧（3） Fundamental Skills about data processing #3	上機實作，助教協助解決問題
W5	資料處理進階技巧（1） Advanced Skills about data Processing #1	上機實作，助教協助解決問題
W6	資料處理進階技巧（2） Advanced Skills about data Processing #2	上機實作，助教協助解決問題
W7	資料處理進階技巧（3） Advanced Skills about data Processing #3	上機實作，助教協助解決問題
W8	資料建模概念 Concept of Data Modeling	上機實作，助教協助解決問題

W9	期中考	英文試題
W10	資料維度（一） Regular Dimension #1	上機實作，助教協助解決問題
W11	資料維度（二） Regular Dimension #2	上機實作，助教協助解決問題
W12	時間維度 Time Dimension	上機實作，助教協助解決問題
W13	關鍵績效指標 Key Performance Indicator	上機實作，助教協助解決問題
W14	儀表板設計 Dashboard Development	上機實作，助教協助解決問題
W15	實務演練 Case Study	上機實作，助教協助解決問題
W16	視覺化分析 Visual Analysis	上機實作，助教協助解決問題
W17	成果簡報 Final Report	上機實作，助教協助解決問題
W18	期末考 Final Exam	英文簡報

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	行銷管理 Marketing management	授課教師 Instructor	徐怡 Yi Hsu

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： Kotler and Armstrong (2024), Principles of Marketing, 19th edition, Pearson (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 % 其他補充說明 Others：Harvard Business Review：Current academic literature review (100%英文內容 100% in English) Wall Street Journal：Current economic news (100%英文內容 100% in English) You Tube：Current innovated cases (100%英文內容 100% in English) 3.DW：Current innovated cases (100%英文內容 100% in English)
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：參觀見學 Field Trip: Toyota 國瑞汽車; BOSS 動態決策模式系統上機; café startup 和 I'm a big boss 桌遊; 8 種手遊
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 100 %。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. ■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 ■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

Week	Unit/Topic	Teaching Activities
W1	Ch1 Marketing: Creating Customer Value and Engagement	Ch1 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W2	Ch1 Marketing: Creating Customer Value and Engagement Case 1: Argos: Creating Customer Value amid Change and Turbulence	Ch1 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W3	Ch2 Company and Marketing Strategy: Partnering to Build Customer Engagement, Value, and Relationship Case 2: Dyson: Solvng Customer Problems in Ways They Never Imagined	Ch2 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W4	Ch3 Analyzing the Marketing Environment Case 3: Square: In Relentless Pursuit of a More Elegant Payment Experience	Ch3Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W5	Ch4 Managing Marketing Information to Gain Customer Insights Case 4: Bayer: Big Data for Customer Insight	Ch4 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W7	Ch6 Marketing management Information Systems and Research Case 6 Shopify: An E-commerce Giant That Doesn't Sell to End Users	Ch6 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W8	Ch7 Customer Value-Driven Marketing Strategy: Creating Value for Target Customers Case 7: 5-Hour Energy: Hours of Energy without the Beverage	Ch7 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report

週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W9	**Mid-term Exam Field trip to Toyota, Taoyuan**	
W10	**Card game: Café Startup; I'm a big boss**	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W11	**Video game: Boss - marketing management, supply chain management**	Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W12	Ch8 Products, Services, and Brands: Building Customer Value Case 8: MINI: Focus on the Essential-Maximize the Experience	Ch8 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W13	Ch9 Developing New Products and Managing the Product Life Cycle Case 9: Toyota: Developing a Million New Product Ideas Every Year	Ch9 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W14	Ch10 Pricing: Understanding and Capturing Customer Value Case 10: Gillette: Searching for the Right Price in a Volatile Market Case11: Casper: A Pricing Strategy That Flipped the Mattress Industry	Ch10 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
週次 Week	單元/主題 Unit/Topic	教學活動重點及教材內容 Teaching Activities
W15	Ch11 Marketing Channels: Delivering Customer Value Case12: Casper: A Pricing Strategy That Flipped the Mattress Industry Case13: Target: A Serious Contender in the Same Day Delivery Business	Ch11 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W16	Ch12 Engaging Consumers and Communicating Customer Value: Integrated Marketing Communications Strategy Case14: Ulta Beauty: Where the Experience Is Beautiful	Ch12 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report

W17	Ch13 Advertising and Public Relations Case 15: Nestle: Integrating Marketing Communication into Daily Operations	Ch13 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group Report
W18	Ch15 Digital, Online, Social Media, and Mobile Marketing	Ch15 Lecturing; Group Discussion; Q&A; Problem Based Learning; Group 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	公司財務管理 Corporate Financial Management	授課教師 Instructor	呂麒麟 Chilin Lu

教學簡要說明

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.
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.
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>Corporate finance core principles & applications, 5th ed</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)__100_% 3.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_100____%。 The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper. □ 英文期中/期末報告：_____%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	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 paper study
W11	IRR and other criteria	Lecturing and paper study
W12	Making capital investment decisions	Lecturing and paper study
W13	Risk analysis	Lecturing and paper study
W14	Capital budgeting	Lecturing and paper study
W15	Risk and return	Lecturing and paper study
W16	CAPM	Lecturing and paper study
W17	Efficient capital markets	Lecturing and paper study
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

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。

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 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	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)_100_% 3.其他補充說明 Others：
雙語教學方式 (可多選，或 簡述) Bilingual Teaching Strategies	v 教材講述 Lecturing　□小組討論 Group Discussion　v 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：

<table>
<tr><td rowspan="4">成績評量方式
Grading</td><td>V　期中/期末考：__100_%以上英文試題，學生以英文答題_100_%。

The percentage of English using in designing midterm/final exam; the percentage of English using in answering the exam paper.</td></tr>
<tr><td>V　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</td></tr>
<tr><td>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)

English oral presentation including Q&A session at least 20 minutes

(Department cores, master's degree and doctoral degree courses so must have</td></tr>
<tr><td>□　其他方式(請說明中英文比例)Others(please state the proportion of Mandarin and English in grading)：</td></tr>
</table>

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	Lecturing and 20 mins of student's presentation

	algorithm?	
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 Performance Map Analysis (IPMA).	Lecturing and 20 mins of student's presentation
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
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：__ Principles of Leadership ____ (_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	■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：_____%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. ■　英文期中/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	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? *Daniel Goleman*
W9	Power, Politics, and Leadership	Sources and types of power Factors that contribute to organizational politics What Makes an Effective Executive? *Peter F. Drucker*
W10	Influence Tactics of Leaders	A model of power and influence The Work of Leadership. *Roanld A. Heifetz and Donald L. Laurie*
W11	Developing Teamwork	Leader's action that foster teamwork What Leaders Really Do. *John P. Kotter*
W12	Motivation and Coaching Skills	Expectancy theory and motivation skills Discovering Your Authentic Leadership. *Bill George, Peter Sims, Andrew N. McLean, and Diana Mayer*
W13	Communication and Conflict Resolution Skills	Inspirational and powerful communication Listening as a leadership skill Crucibles of Leadership. *Warren G. Bennis and Robert J. Thomas*
W14	Creativity, Innovation, and Leadership	Characteristics of creative leaders Overcoming traditional thinking as a creative strategy Why Should Anyone Be Led by you? *Robert G. Bennis and Robert J. Thomas*
W15	International and Culturally Diverse Aspects of Leadership	Cultural factors influencing leadership practice Seven Transformations of Leadership. *David Rooke and William R. Torbert*
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. *Jim Collins*
W17	Leadership Development and Succession	Development through self-awareness and self-discipline Development through education, experience, and mentoring In Praise of the Incomplete Leader. *Deborah Ancona, Thomas W. Malone, Wanda J. Orlikowski and Peter M. Senge*
W18	Final Project Due	Reflections