113學年度第1學期專任(案)教師全英語授課獎勵名單

編號	學院	開課單位	開課班級	課程名稱 (必選修)(學分/學時)	授課教師	修課人數
1	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩一	有機金屬化學 (選修)(3/3)	黃瑞賢教授	5
2	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩一	專題討論(一) (必修)(2/2)	黃瑞賢教授	14
3	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩一	X射線結晶結構學(二) (選修)(3/3)	李漢文教授	6
4	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩一	材料化學 (選修)(3/3)	高琨哲助理教授	11
5	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩二	學習理論 (選修)(3/3)	鄭夢慈教授	4
6	理學院	材料與生物科技暨科教國際碩士學位學程/生物系	理學位碩一/生技碩一	分子生物學專論(一) (選修)(2/2)	王妙媛副教授	4/2
7	理學院	材料與生物科技暨科教國際碩士學位學程/生物系	理學位碩一/生技碩一	酵母菌學專論(一) (選修)(2/2)	周睿鈺教授	4
8	理學院	材料與生物科技暨科教國際碩士學位學程	理學位碩二	專題討論(三) (必修)(2/2)	周睿鈺教授	4
9	理學院	材料與生物科技暨科教國際碩士學位學程/光電所	理學位碩一/光電碩博	顯示元件設計與製作 (選修)(3/3)	黃啟炎教授	7/3
10	理學院	物理系	物碩博	奈米材料(一) (選修)(3/3)	劉嘉吉教授	5

11	工學院	國際工程碩士學位學程/機電系	工學位碩一/機電碩博	數值分析 (選修)(3/3)	李建興 助理教授	9/26
12	工學院	國際工程碩士學位學程/電子系	工學位碩一/電子碩一	科技英文寫作 (選修)(3/3)	柯宗憲 教授	1/19
13	工學院	國際工程碩士學位學程	工學位碩一	人工智慧物聯網系統設計 (選修)(3/3)	張家濟 副教授	10
14	工學院	國際工程碩士學位學程	工學位碩一	人工智慧 (選修)(3/3)	楊文然 副教授	12
15	工學院	國際工程碩士學位學程	工學位碩一	書報討論(一) (必修)(2/2)	賴永齡 教授	7
16	工學院	國際工程碩士學位學程/機電系	工學位碩一/機電碩一/機電四	半導體製程 (選修)(3/3)	王可文 助理教授	2/19/43
17	工學院	電機系	電機 碩二	專題研討(一) (必修)(2/2)	張譽鐘 教授	21
18	工學院	電機系	電機 碩一	書報討論(一) (必修)(2/2)	林昭志 副教授	25
19	管理學院	會計系	會二甲	財務管理 (必修)(3/3)	湯玉珍 副教授	42
20	管理學院	會計系	會一甲/會一乙	經濟學(一) (必修)(3/3)	薛明賢 助理教授	43/46
21	管理學院	會計系	會碩 一甲	財務個案研究 (選修)(3/3)	薛明賢 助理教授	29
22	管理學院	會計系	會一乙	商用數學 (必修)(3/3)	李桓伊 副教授	48
23	管理學院	會計系	會碩 一甲	會計研究方法 (必修)(3/3)	林玉君 副教授	20
24	管理學院	會計系	會一甲	管理學 (必修)(3/3)	林宜君 副教授	44

25	管理學院	財金系	財金三	投資組合分析(必修)(3/3)	陳信憲教授	38
26	文學院	通識教育中心	核心通識	台灣文學欣賞(選修)(2/2)	劉威廷助理教授	15

國立彰化師範大學__113___學年度第__1__學期

全英語授課實施情形報告

壹、授課教師：黃瑞賢

貳、科目名稱：有機金屬化學

參、學分/時數：3/3

肆、開課班級：理學院國際學程碩士班

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

This semester, the students who enrolled in the chemistry department courses have shown great enthusiasm for learning. These students are sufficiently competent in terms of professional ability and academic level. However, since some of their classmates are local graduate students, the course content needs to be continuously adjusted. In class, I interact with the students frequently to better understand them.

二、授課心得與建議

1. Conducting courses entirely in English should not be a problem for students who are serious about learning. What concerns me more is their professional competence. If we can select better students to enter the university, I believe this will enhance not only individual laboratories but also the overall research capabilities of

NCUE.

2. Additionally, since there are several local students taking this course together, after two in-class exams, it appears that some local students may be struggling due to the language barrier, as their classroom performance is not as strong as that of international students. I wonder if there are any restrictions for local students enrolling in fully English-taught courses.

國立彰化師範大學__113_學年度第_1 學期

全英語授課實施情形報告

壹、授課教師：黃瑞賢

貳、科目名稱：Seminar (1)

參、學分/時數：2/2

肆、開課班級：理學院國際學程碩士班

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

There are 10 students enrolled in the class; however, we also have a joint seminar with the second-year students, bringing the total to 18. Since the students come from diverse academic backgrounds—chemistry, biology, physics, and education—the materials presented in the course are very versatile. The students are highly engaged in the discussions, often exceeding the allotted class time each week.

二、授課心得與建議

Over the past six weeks, I have spent a considerable amount of time reviewing papers from students in different departments, preparing to provide effective feedback for their upcoming presentations. In addition to our regular classes, we also hold a joint seminar with second-year

students, making the seminar course quite intense and lengthy. However, this collaborative format allows all students to engage with a diverse range of academic knowledge. This experience benefits not only the students but also the instructors. I appreciate how the IPMS class effectively trains students while also enhancing the instructors' skills.

國立彰化師範大學__113___學年度第__1__學期

全英語授課實施情形報告

壹、授課教師：李漢文

貳、科目名稱：X-ray 結晶結構學(2)

參、學分/時數：3/3

肆、開課班級：碩一

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

There were six students enrolled in the course, five majoring in physics and one in chemistry. In terms of nationality, five students were from Pakistan and one from India. The class was conducted in a small classroom, fostering an interactive learning environment where each student could engage with me easily. Overall, they demonstrated strong academic performance, showing dedication and attentiveness to their studies. Ultimately, all six students successfully passed the course with merits.

二、授課心得與建議

I thoroughly enjoyed teaching the class. The students were intelligent, attentive, and actively engaged in their learning. I believe that a small class size like this provides an excellent environment for effective learning. Overall, these international students demonstrated strong academic potential, and I sincerely hope that more outstanding students will join our academic programs at NCUE in the future.

國立彰化師範大學_113_學年度第__1__學期

全英語授課實施情形報告

壹、授課教師： 高琨哲

貳、科目名稱： Material Chemistry

參、學分/時數： 3

肆、開課班級： 理學院國際學位學程

伍、實施情形：

一、學生學習狀況

在本學期全英語授課的材料化學課程中，學生普遍展現出積極認真的學習態度。課堂上，多數同學能夠專心聆聽講解，踴躍參與討論，並積極回答問題，顯示出對課程內容的興趣。然而，從學業成績和概念理解的層面來看，部分學生在原理的理解上仍有提升空間。總體而言，雖然學生們對材料化學的學習態度值得肯定，但在專業能力和學術水平上還需進一步加強。建議未來可以安排更多課堂輔導、實例解析以及小組討論，以幫助學生鞏固知識、達到更理想的學習效果。

二、授課心得與建議

從授課過程與學生反應問卷來看，授課內容與學習過程整體是正向的。在未來課程中，希望能與學生有更多互動，適時加入更多師生討論，並針對不同程度的學生進行分層教學，以確保每位學生均能充分吸收與理解課程內容，進一步提高學習成效。

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

（參考格式）

壹、授課教師：鄭夢慈

貳、科目名稱：學習理論

參、學分/時數：3/3

肆、開課班級：理學位碩二

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

The “Learning Theories” course was designed with the objectives of understanding the foundational concepts of learning theories, analyzing various theoretical perspectives, applying these theories to instructional design, and encouraging students to reflect on their teaching and learning practices. It was atructured around the textbook *Learning Theories: An Educational Perspective (6th ed.)* by Schunk.

Throughout the course, students engaged with key learning theories, including behaviorism, social cognitive theory, information processing, constructivism, motivation, and self-regulation. Over time, they demonstrated an increasing ability to analyze and apply these theories in educational and professional settings. While some initially found theoretical concepts abstract and challenging, interactive discussions and case studies helped bridge the gap between theory and practice. Many students found motivation and self-regulation particularly impactful, as these concepts encouraged them to reflect on and refine their own learning strategies and teaching approaches.

Students’ reflections indicated a shift in their understanding of learning as an active and self-regulated process. The constructivist perspective, in particular, inspired them to advocate for more student-centered, inquiry-based learning strategies, reinforcing the importance of engagement and autonomy in education.

二、授課心得與建議

Teaching the “Learning Theories” course has been a deeply enriching experience, both for my students and myself as an instructor. Overall, it has been particularly rewarding to witness students’ significant growth in understanding learning theories and applying them in practical settings. Based on student feedback and my own reflections, I propose several enhancements to further improve the course:

- **Increase Practical Applications:** Incorporate more experiential learning opportunities and real-world examples to better contextualize theoretical concepts.
- **Enhance Collaborative Learning:** Expand peer-led discussions and collaborative research projects to foster deeper engagement and knowledge exchange.
- **Refine assessment methods:** Integrate guided reflections as formative assessments, allowing students to track their learning progress while deepening their understanding.

國立彰化師範大學_113_學年度第_1_學期

全英語授課實施情形報告

（參考格式）

壹、授課教師：王妙媛

貳、科目名稱：分子生物學專論(一) Special Topics in Molecular Biology I

參、學分/時數：2/2

肆、開課班級：分子生物學專論(一)-29009，理學位碩一，4 人

分子生物學專論(一)-24045，生技碩一， 2 人

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

1. 課程簡介

- To equip students with the necessary critical theoretical background, develop the analytical and advance research skills in biotechnology and gene sequencing as a diagnostic tool for genetic disorders and cancer.
- To develop students' ability to apply knowledge and skills to solve theoretical and practical problems in molecular.

2. 學生學習狀況

在全英授課的研究所課程中，學生的學習狀況因語言能力和學術背景而異。大多數學生能適應英語授課，尤其是有國際學習經驗或本科已接受部分英語教育的學生。然而，部分學生在專業術語、課堂討論或學術寫作上仍面臨挑戰，特別是非英語母

語者（除了印度籍的學生之外）。為幫助學生適應，我鼓勵他們預習講義、積極參與討論，並利用英語資源加強學習。此外，除了小組合作學習之外，也增加口頭報告時間來提升他們的表達與理解能力。總體而言，全英授課有助於學生融入國際學術環境，但需要額外支持，例如語言輔導或學術寫作訓練，以確保他們能充分理解課程內容並提升研究能力。

二、授課心得與建議

1. 教學心得

我發現學生的學習適應度與他們的英語能力和學術背景密切相關。大多數學生能適應英語授課，特別是本科階段已有英語學習經驗的學生。然而，部分非英語母語學生在專業術語的理解、課堂討論的表達，以及學術寫作方面仍然面臨挑戰。因此，我在授課時會採取多種策略來提升教學效果。首先，在課

程開始時，我提供清楚的學習指南，包括相關的教科書、講義及線上資源，我在講課時也會放慢語速，並適時重複或換句話說，以確保學生理解核心概念。為了提升學生的參與度，我設計了小組討論及案例分析等活動，讓學生有機會使用英語進行學術交流，這不僅提升了他們的語言能力，也加強了批判性思考與問題解決能力。此外，我要求學生進行口頭報告和寫作作業，藉此能有效提升他們的學術表達能力。

2. 建議與改進方向

全英授課的挑戰主要來自於學生語言能力、學術寫作、與課堂參與。因此，我認為可以從以下幾個方面改進全英授課的效果，幫助學生更有效地學習並提升國際競爭力。

首先，課程設計應兼顧語言學習與專業知識。對於非英語母語學生，建議在課程初期提供專業術語的詞彙表，並鼓勵學生多閱讀英語文獻，以提升專業詞彙的熟悉度。此外，講課時可適當放慢語速，並透過圖表、動畫或案例分析來強化理解，讓學生更容易掌握概念。其次，課堂互動與評量方式也應有所調整。許多學生在全英環境下較不敢發言，因此可以透過小組討論、線上論壇或預先提供問題，讓學生有時間準備再表達意見。口頭報告與學術寫作則應循序漸進，從短篇摘要到完整研

究報告，並搭配詳細回饋與寫作指導，幫助學生逐步提升學術表達能力。此外，學校應提供更多語言支援資源，如英語寫作工作坊、學術簡報訓練、以及與國際學生的交流機會，讓學生能在多元情境中提升英語能力。教師也可定期蒐集學生回饋，根據需求調整教學策略，確保課程的有效性。

總結而言，全英授課在台灣的研究所課程具有推動國際化的優勢，但仍需透過更完善的教學設計與支援機制，讓學生能更自信地使用英語進行學術交流與研究。

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

壹、授課教師：周睿鈺

貳、科目名稱：酵母菌學專論(一)

參、學分/時數：2/2

肆、開課班級：生物學系碩士班、理學院國際學程碩士班

伍、實施情形：

一、學生學習狀況

Our class provides a dynamic learning environment where we explore scientific literature, with a strong foundation in yeast biology and molecular biology. Although the course officially has only five enrolled students—four international students and one local students—I actively encourage all members of my lab to participate. This broadens discussions and fosters a more collaborative exchange of ideas. This year, we are expanding beyond our usual focus on yeast and molecular biology to include new topics related to fungal cultivation. Students will learn techniques to enhance the heat resistance of mushrooms and induce beneficial mutations, making the course more applicable to real-world challenges and better suited to students' research needs. In addition to literature discussions, we emphasize hands-on experience in microbial culture techniques. Each student will gain proficiency in key methods, from fungal isolation to optimizing growth conditions, ensuring they develop both theoretical knowledge and practical skills in microbial science. The students have responded very positively to the course so far, especially appreciating its practical applications in the industry.

	
Photos Depicting Classroom Teaching Situations	Welcome Reception for New International Students

二、授課心得與建議

One of the challenges I've noticed in my classes is that students, especially those from Taiwan, are often hesitant to ask questions. Many worry about whether their questions are insightful enough or if they might make mistakes when speaking. To tackle this, I have made it a priority to create a classroom environment that actively encourages curiosity and discussion. A key part of this effort is ensuring that students from different research backgrounds feel comfortable engaging with topics beyond their own expertise. I encourage them to ask questions even if they are unfamiliar with the subject matter, reinforcing that inquiry is a fundamental part of learning. This approach not only helps them develop critical thinking skills but also broadens their understanding of scientific discussions across disciplines. Additionally, I have introduced a speaker training program where students practice presenting their research to an international audience. This initiative is particularly valuable for non-native English speakers, as it gives them a chance to refine their pronunciation and gain confidence in expressing their ideas clearly. Beyond language skills, this program helps students develop the ability to communicate complex scientific concepts in an accessible way, an essential skill for both academia and industry. Another major benefit of this diverse learning environment is the variety of perspectives students bring to discussions. With participants from different research fields, every brainstorming session becomes an opportunity to gain fresh insights. These interdisciplinary conversations often lead to unexpected connections and innovative ideas, enriching the overall learning experience for everyone involved.

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

壹、授課教師：周睿鈺

貳、科目名稱：專題討論(三)

參、學分/時數：2/2

肆、開課班級：理學院國際學程碩士班

伍、實施情形：

一、學生學習狀況

This is the third times of this course, and the number of students has increased significantly compared to last two times. We welcome new students from different countries, bringing diverse perspectives and energy to the class. As the course evolves, the students' academic backgrounds have also become increasingly diverse and complex, spanning fields such as biology, chemistry, optoelectronics, and materials science. This presents a challenge for both teachers and students, as knowledge backgrounds vary widely across disciplines. For freshmen, their task is to select a research paper related to their field and present it. For senior students, the challenge is even greater—they must choose at least three relevant papers, synthesize them into a coherent narrative, and deliver a 40-minute presentation. Given the diversity of academic backgrounds, speakers must communicate their ideas in a clear and accessible manner to ensure that audiences from different disciplines can understand and engage in discussion. Despite coming from different countries, the students have built strong relationships and interact harmoniously. They are highly engaged in the class, frequently raising their hands to ask questions, which creates a positive and encouraging learning environment. However, some students from Indonesia and Pakistan are currently unable to join us due to visa issues. We hope they will arrive soon and be able to participate in the course with us.

	
Photos taken during this class	Photos taken during this class

二、授課心得與建議

This course has also been a challenge for me, especially as students' research backgrounds have become increasingly diverse, spanning fields such as biology, chemistry, optoelectronics, and materials science. To keep up, I need to learn more specialized terminology. However, simply acquiring technical vocabulary is not enough to resolve the communication barriers between disciplines. To truly address this issue, I must guide students in learning how to present their research using clear, science communication-friendly language. After all, the core objective of a seminar is not just to report research findings but to ensure that audiences from different backgrounds can understand and engage in meaningful discussions. One of the defining aspects of this course is that, despite the growing number of students, the class size remains relatively small. This has had a profound impact on the learning experience, encouraging both students and myself to actively participate in discussions. In larger classes, it is easy for students to become passive listeners, absorbing information without direct interaction. Here, however, no one can remain a bystander. The small-class setting ensures that every student has the opportunity to ask questions, clarify concepts, and engage in deeper discussions, fostering a highly interactive learning environment that aligns with the true spirit of a seminar.

國立彰化師範大學113學年度第一學期

全英語授課實施情形報告

壹、授課教師：黃啟炎

貳、科目名稱：顯示元件設計與製作(Design and fabrication of display devices)

參、學分/時數：3/3

肆、開課班級：光電碩博/國際理學碩一

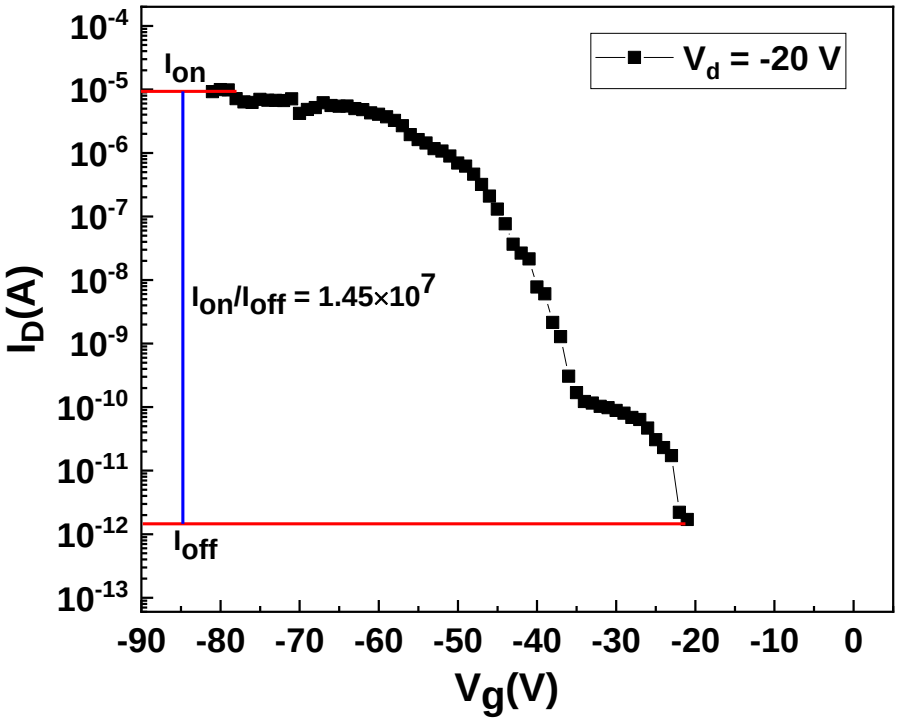
伍、實施情形：

本課程主要講授顯示器設計及製作之技術，本年度共有9位學生選修，3位物理所，6位來自理學院國際學位學程。

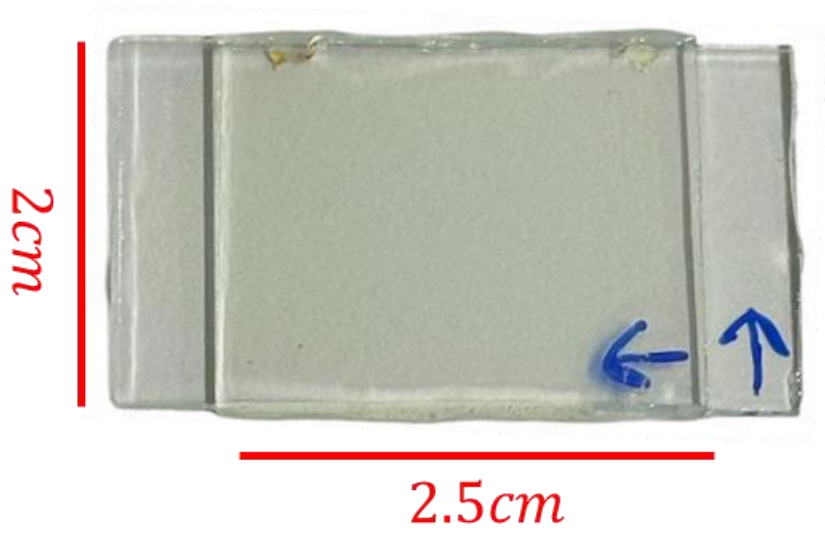
課程主要的內容，在於講解薄膜電晶體液晶顯示器的設計方法及製作過程。首先講解液晶面板之製作方式並要求學生實作；接著講解薄膜電晶體之製作方式並要求學生實作。製作完液晶面板以及薄膜顯示器後，則要求學生組裝業用液晶面板以及薄膜電晶體；利用薄膜電晶體驅動液晶顯示器。此部分實驗，因為手工製作之薄膜電晶體良率不穩，乃改以傳統NPN電晶體驅動液晶顯示器。本課程並教導學生利用Labview 控制儀器產生所要之訊號，藉以驅動液晶顯示器。

在本課程結束後，修課的同學皆可了解薄膜電晶體液晶顯示元件的設計與製作。下圖為學生製作及量測之成果。

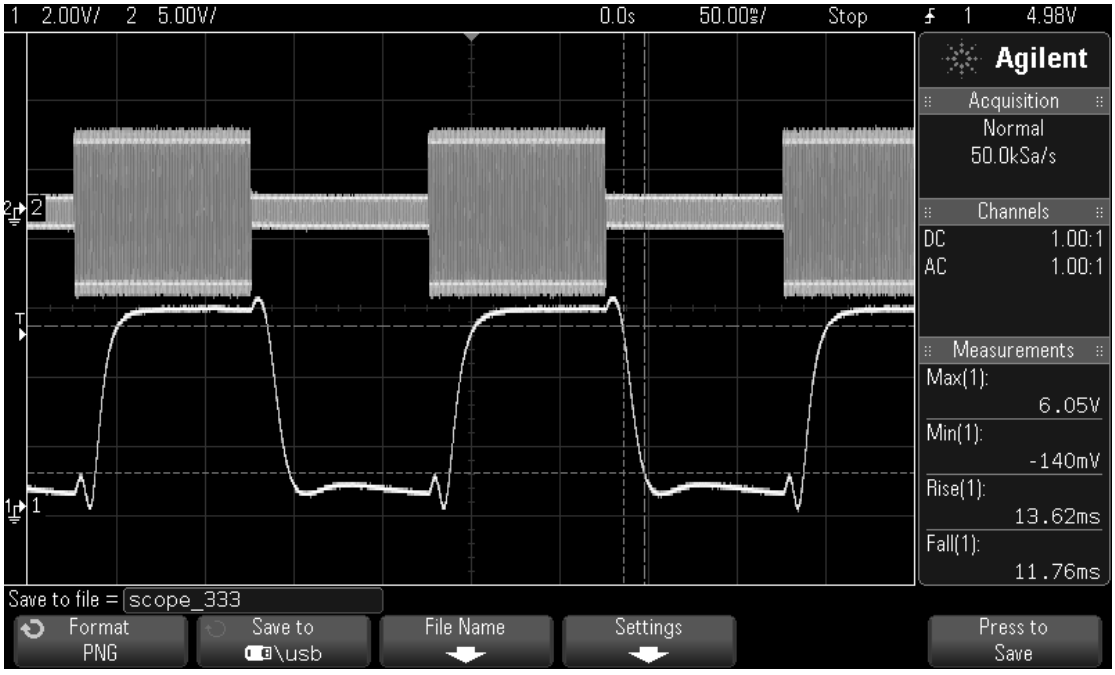
薄膜電晶體實作樣品



薄膜電晶體 IV 特性量測圖



液晶顯示面板實作樣品



利用訊號產生器產生控制訊號及液晶光電響應量測圖

國立彰化師範大學113學年度第1學期全英語授課實施情形報告

壹、授課教師：劉嘉吉

貳、科目名稱：奈米材料

參、學分/時數：3/3

肆、開課班級：物碩博

伍、實施情形：

一、學生學習狀況:

The student has significantly enhanced their understanding of nanomaterials, drawing knowledge from a variety of sources including handouts and published literature. This comprehensive approach to learning has allowed them to grasp the foundational principles of nanomaterials. By engaging with both the provided handouts and extensively reviewing relevant scholarly articles, the student has developed a robust understanding of the unique properties of nanomaterials and their applications.

Nanomaterials, as a field of study, involves the manipulation of matter at the nanoscale (typically 1-100 nanometers), where materials exhibit distinctive properties different from their bulk counterparts. These unique characteristics emerge from quantum effects and the increased surface-to-volume ratio at the nanoscale. The student's exploration into this area has covered both theoretical aspects and practical applications, including the latest advancements in nanomaterial technology.

Through their diligent study, the student has come to understand the significance of various nanomaterial properties, such as size-dependent optical, electrical, and mechanical behaviors. They have learned about the challenges in synthesizing, characterizing, and manipulating nanomaterials, as well as the innovative solutions being researched to overcome these hurdles.

Moreover, the student has gained an appreciation for the potential impact of nanomaterials across multiple disciplines, including medicine, electronics, energy, and environmental remediation. The ability to engineer materials at the nanoscale offers unprecedented opportunities to develop novel technologies with enhanced performance and efficiency.

Outline：

1. Basic concepts of nanomaterials
2. Fundamental theories of nanoparticles
3. Physical properties of nanoparticles
4. Chemical properties of nanoparticles
5. Physical and chemical preparation methods of nanoparticles
6. Characterization of nanomaterials

二、授課心得與建議

The curriculum was carefully structured to cover the essential concepts of nanomaterials, emphasizing the key properties and behaviors of materials at the nanoscale. This foundational knowledge provided students with the necessary tools to understand the complexities of the field. A significant highlight of the course was the introduction to quantum confinement effects and surface phenomena. These concepts, which explain how nanomaterials exhibit properties different from their bulk counterparts, opened up new perspectives for the students. They enhanced students' ability to critically analyze and appreciate recent research papers in the field.

The course's design reflects a thoughtful approach to accommodating diverse student needs while maintaining a high academic standard. It successfully engaged students in the intricate study of nanomaterials, encouraging them to explore the latest advancements and contribute to the ongoing discourse in this rapidly evolving field.

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

（參考格式）

壹、授課教師：李建興

貳、科目名稱：Applied Numerical Algorithms (ME51027/IMPE55008) 數值分析

參、學分/時數：3/3

肆、開課班級：工學院國際工程碩士學位學程/機電系碩博

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

This collaborative course was offered to students from the Department of Mechatronics (Master's and PhD programs) and the International Master Program in Engineering. From ME, there were 24 master's students and 2 PhD students. From IMPE, there were 9 foreign students. This course is intended to provide an overview of computational approaches in linear algebra and numerical optimization, with the purpose of preparing students for more advanced elective courses in data science, machine learning, and AI. Several students became more comfortable asking and answering questions in English as a result of their classroom interactions. Along with understanding essential numerical algorithms, most students were

able to provide a thorough review of key numerical analysis approaches such as optimization, linear/nonlinear equations, and ordinary differential equations.

二、授課心得與建議

This course improved students' ability to use the numerical methods they learned successfully. Each subject finishes with practical case studies, allowing students to understand classic algorithms used in engineering mathematics. This course used a clear note-taking style, including lecture notes and examples. I believe the majority of the students have gained valuable knowledge that they can implement in the future.

國立彰化師範大學113學年度第一學期

全英語授課實施情形報告

壹、授課教師：柯宗憲

貳、科目名稱：科技英文寫作

參、學分/時數：3/3

肆、開課班級：電子碩

伍、實施情形：

一、學生學習狀況

During the 113th academic year, the “Technical English Writing” course continued to stress the importance of practical writing abilities, with particular emphasis on effective presentations and professional email correspondence. By applying these skills in realistic scenarios, students not only grew more confident in articulating their ideas but also learned how to structure messages clearly and coherently across various contexts.

Throughout the course, many students displayed steady progress in their writing, ranging from concise summaries to formal project proposals. Their exposure to diverse communication formats—especially preparing slide presentations and drafting both formal and informal emails—helped broaden their understanding of tone, audience expectations, and best practices for professional engagement.

二、授課心得與建議

From the outset, the curriculum focused on bolstering students’ ability to convey messages accurately and persuasively. This included guidance on organizing presentation content, incorporating visual aids, and maintaining clarity in email communication. Through active discussions and peer reviews, students were encouraged to refine their language use, strengthen their arguments, and adapt to feedback promptly.

Moving forward, I recommend continuing to highlight these key communication elements, as they align with industry demands and contribute significantly to students’ career readiness. By consistently practicing presentation skills and honing their email-writing techniques, learners will be better positioned to navigate diverse professional situations and excel in an ever-evolving global workplace.

國立彰化師範大學學生雙語化學習計畫

113 學年度第 1 學期

全英語授課執行報告

壹、 授課教師：張家濟

貳、 科目名稱：人工智慧物聯網系統設計

參、 學分/時數：3 學分/3 小時

肆、 開課班級：工學位碩一

伍、 修課人數：10 人

陸、 實施情形：

一、學生學習狀況(文字敘述)

本課程總共有 9 位外籍生和 1 位本國籍修習，分別來自印度、土耳其、印尼、巴基斯坦、越南等國家。

序號	班級名稱	照片	學號	姓名
1	人工智慧應用服務碩士在職專班二		A1254015	鍾秉叡
2	工學位碩二		M1250002	fredo Sak
3	工學位碩二		M1250003	孟俊德
4	工學位碩二		M1250004	蘇以奇
5	工學位碩二		M1250005	夏莉莉

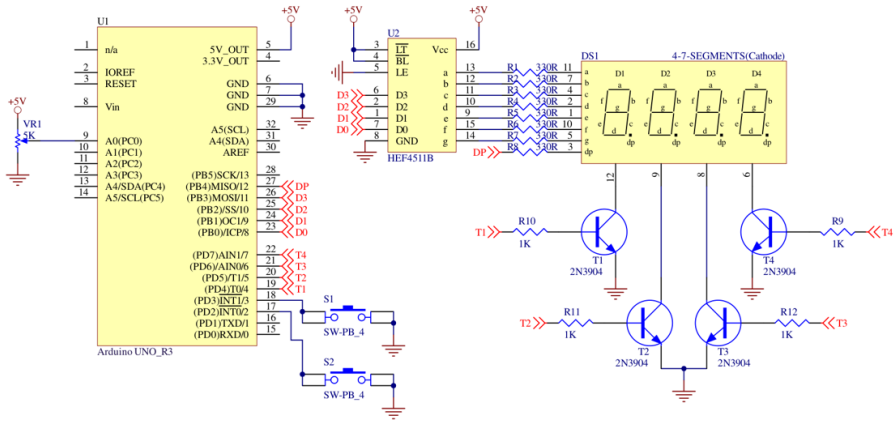
6	工學位碩一		M1250006	' Wangsawil
7	工學位碩一		M1250007	aseem Ulla
8	工學位碩一		M1350002	MUSA BENI
9	工學位碩一		M1350004	MONICA
10	工學位碩一		M1350005	a Krishnam

與過去學生不同是素質普遍提高，主要使用語言為英文，同學彼此交談會以當地母語溝通。考量學生過去的學科基礎能力，本課程採用上課實作方式，每個章節的實作內容皆會有相關範例程式碼，讓學生修正範例程式後並上傳至系統核心，可以讓實作內容可以動態變化，以提昇學生的學習興趣。這些教學構想來自於透過 Arduino 可以很快的學習「人工智慧物聯網系統設計」的基礎學理，就算完全沒有接觸過程式訓練的學生應能輕易上手，並設計各種不同的物聯網互動裝置。

二、授課心得與建議

開發人工智慧物聯網系統需要資電相關科系背景，門檻非常高。本課程則採用 Arduino 為硬體平台和 Arduino IDE 免費程式軟體，考量沒有相關科系背景的同學，應該能很快使用 Arduino 進行人工智慧物聯網系統開發。每個教學章節最後會給予電路設計和相關程式範例，並於每週於雲端學院新增作業，讓學生在課堂上實際演練，並同時即時給予教學協助，最後完成課堂作業後，上傳成果照片或影片至雲端學院進行評分。

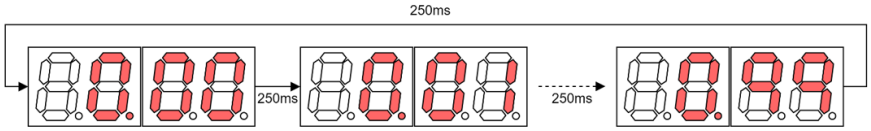
Connect the appropriate pins on the Arduino board according to the reference circuit below, and finish the following questions(Q1~Q3).



Arduino 驅動七段顯示器的電路設計

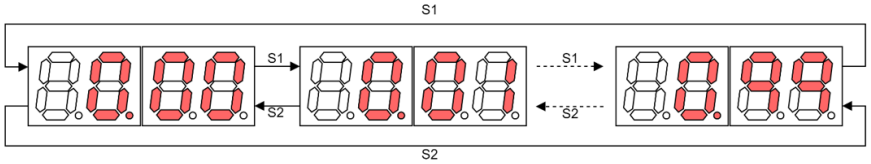
Question 1[25%]

Counting 0.00 to 0.99 with 4-digit 7-segement display

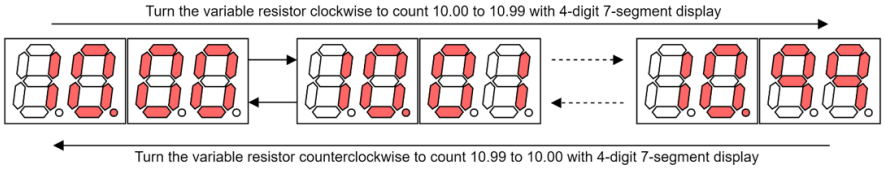


Question 2[25%]

Using push buttons(S1 and S2) to count 0.00 to 0.99 with 4-digit 7-segment display

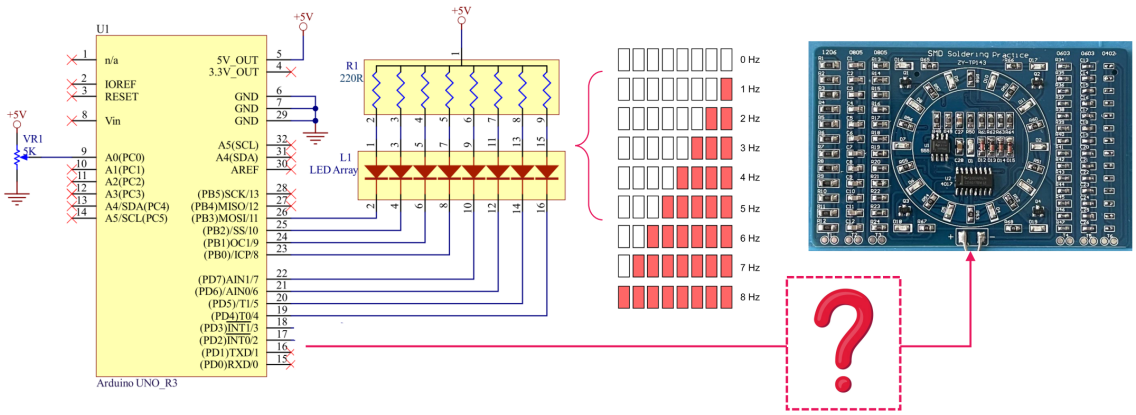


Question 3[25%]



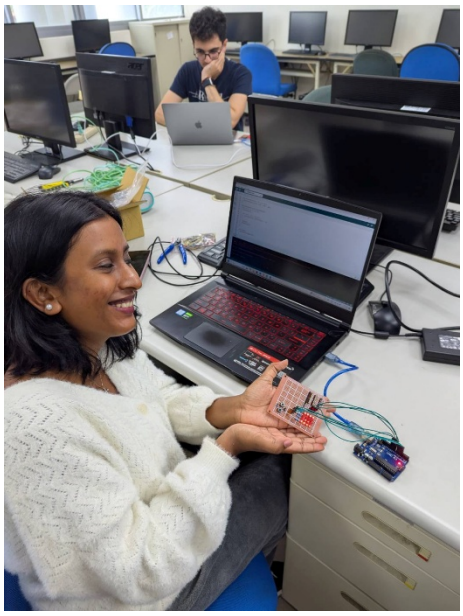
Arduino 驅動七段顯示器的相關問題

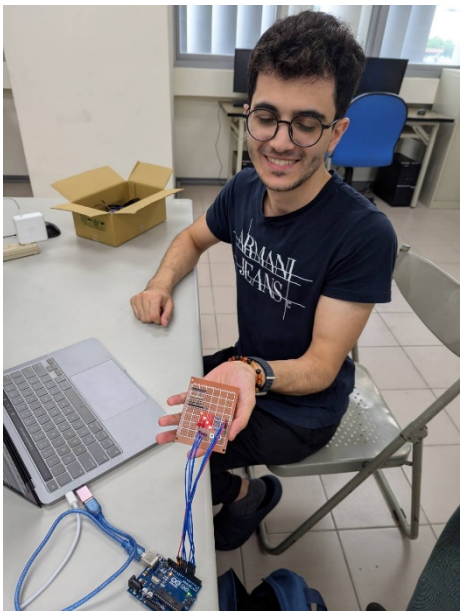
授課老師根據 112 年度教學實踐研究計畫以 CDIO 專題式學習引導外籍學生建立智慧物聯網核心基礎-以低功耗無線感測節點應用為例」。根據 Conceive-Design-Implement-Operate(CDIO)工程教育人才培育模式，我們構思(Conceive)一個人工智慧物聯網相關專題「Arduino 控制 LED 頻率」希望能結合 GPIO、Timer、Interrupt、ADC、USART、LCD 等數個章節內容，希望每個單元內容著重於解決智能咖啡秤系統會遭遇的問題，再搭配合作式學習(cooperative learning)將外籍生分成 2 人 1 組以提昇整體學習效益。由於外籍生來自不同國家，會因國情、教育方式不同，在合作過程中可能會產生誤會或衝突，授課教師以合適的介入機制(intervention mechanism)降低衝突機率，並且讓外籍生認同合作式學習才能獲取最大學習效益。



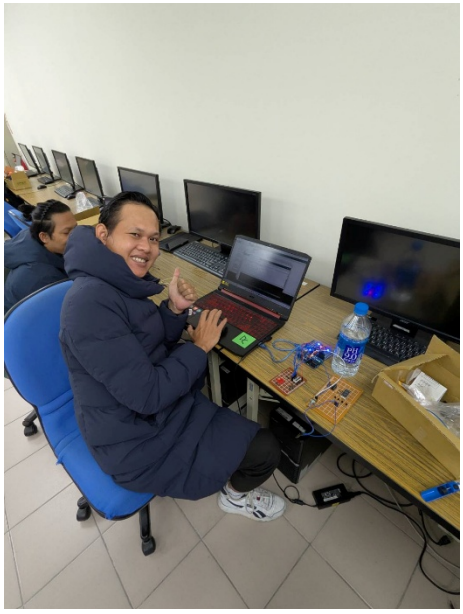
三、課堂照片(至少五張)

▲照片 1 說明：焊接練習 1





▲照片 2 說明：焊接練習 2



四、授課教材

※請提供至少三週課程教材電子檔，並與本報告彙整為一個 PDF 檔。

※教材說明表列如下：

教材名稱	於第○週授課
L2_Introduction to IDE and programming language	於第 2 週授課
L3-1_Introduction to hardware of an IoT system	於第 3 週授課
L4-1_Introduction to GPIO for ourtput function-Part I	於第 6 週授課

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

壹、授課教師：楊文然

貳、科目名稱：人工智慧

參、學分/時數：3/3

肆、開課班級：工學院國際碩士學程

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

本課程”人工智慧”於每週二下午開設於工學院國際碩士學程，採用全英語授課。教科書採用” Neural Network Design,”https://hagan.okstate.edu/nnd.html. 標準進度為 Chapter 1~11，課程目標在於教授類神經網路基礎理論與架構、常用不同類神經網路簡介與應用，以及基礎倒傳遞理論簡介與變化。課程中以 Matlab 軟體進行模擬分析，教導修課學生演練基礎類神經網路設計與分析。學期課程最後四週時，改以 Python 程式語言進行設計與分析，補充簡介現今常用新型類神經網路架構及應用。

二、授課心得與建議

本課程平時需繳交 4~5 次手寫計算及模擬分析作業，期中及期末則各繳交一次研究報告，以選課學生研究領域為主題，總結類神經網路應用及分析案例。選課學生如研究進度許可，甚至可以實驗資料進行進階分析，將課程中所學習之類神經網路架構實際應用。建議本校圖資處增購最新版本 Matlab，以利後續進階課程教學及研究用。

國立彰化師範大學 113 學年度第 1 學期

全英語授課實施情形報告

壹、授課教師：賴永齡

貳、科目名稱：書報討論(一)

參、學分/時數：2/2

肆、開課班級：工學院國際工程碩士學位學程碩一

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

Seminar I facilitates advanced learning and scholarly exchange within the graduate program through a dual focus on topical speeches from scholars and experts, as well as student presentations. Through topical speeches delivered by esteemed scholars and experts in various engineering disciplines, students gain exposure to the latest research developments, emerging trends, and practical applications within their fields. Through student presentations, participants have the opportunity to showcase their own research, share insights, and receive constructive feedback from peers and faculty. Using English for instruction and learning in Seminar I helps students improve their professional as well as English abilities. Students are taught to communicate and learn in English in this course, which forces them to have more frequent exposure to the language, thereby improving their English proficiency. Additionally, using English for learning in the course offers students a better understanding of English resources and academic literature. Students in the course are exposed to different perspectives and cultures through interactions with international classmates. Good teaching responses are given by the international students in Seminar I.

二、授課心得與建議

By actively participating in both listening to expert speakers and presenting their own work, students emerge from the course with enhanced academic competencies, a deeper understanding of their field, and the confidence to contribute meaningfully to engineering research and practice. The implementation of all-English instruction in Seminar I provides both advantages and challenges. The students are able to improve their English language proficiency, which is highly valued in today's global job market. The course also provides an opportunity for students to practice critical thinking and analysis in English. This course provides students with better adaption to an international environment and face global competition. I will continue to improve the all-English teaching about the course for future classes.

國立彰化師範大學113學年度第1學期

全英語授課實施情形報告

壹、授課教師：Kerwin Wang（王可文）

貳、科目名稱：Semiconductor Fabrication（半導體製程）

參、學分/時數：3/3

肆、開課班級：

(55004) 工學位碩一 、(51030) 機電碩一 、

(51030) 機電三；三班合開，總計57人修課。

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

(55004) 工學位碩一 2人

(51030) 機電碩一 19人 (1位不及格；最低61分)

(51030) 機電三 36人 (1位不及格；最低51分)

二、授課心得與建議

1、 外籍生：外籍生對使用學校的某些網頁服務比較不熟悉。例如：申請學校的 Google 學生帳戶就需要老師提供比較多的1對1協助。

2、 由於課程用到大量的專有名詞；雖然，授課老師有提供特殊專有名詞的中譯說明，或在講義進行中文旁註；但仍然難免有不足之處，需要持續留意學生的學習狀況給予協助；以免因只為外籍學生提供英文授課；導致本國學生因課程專有名詞太多，無法在當下理解上課內容。

三、實施情形相關照片

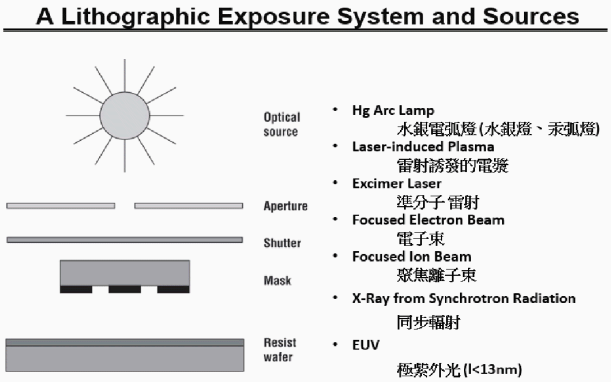


TABLE 2 LOW-k MATERIALS

Determinant	Materials	*k* constant
氟矽酸鹽玻璃	Fluorosilicate glass (FSG)	3.5–4.0
聚對二甲苯N	Parylene N	2.6
聚對二甲苯F	Parylene F	2.4–2.5
金剛石（碳摻雜氧化物）	Black diamond (C-doped oxide)	2.7–3.0
氟化烴	Fluorinated hydrocarbon	2.0–2.4
特氟龍-AF	Teflon-AF	1.93
氫倍半矽氧烷 和 甲基倍半矽氧烷	HSQ/MSQ	2.8–3.0
聚酰亞胺	Polyimide	2.7–2.9
芳香烴聚合物	SiLK (aromatic hydrocarbon polymer)	2.7
苯並環丁烯類	Benzocyclobutenes	2.6-2.7
聚亞芳基醚	PAE [poly(arylene ethers)]	2.6
氟化聚酰亞胺	Fluorinated polyimides	2.5-2.9
氟化無定形碳	Fluorinated amorphous carbon	2.1
幹凝膠（多孔二氧化矽）	Xerogels (porous silica)	1.1–2.0

圖一、講義特殊專有名詞中譯說明樣張

圖二、學生參與課程現場

六、附件：教學內容概要

Objective：

This course introduces basic concepts of fundamental semiconductor processes in manufacturing microchips, including lithography, metallization, wet etching, dry etching, deposition, thermal oxidation, and implantation, and advanced modern technologies. Through an in-depth introduction, students can receive a good understanding of the basic principles of semiconductor manufacturing science.

Outline：

Part 1： Course Introduction
Part 2： Overview of Semiconductor Devices
Part 3： Background Information
Part 4： Silicon Wafer Preparation
Part 5： Oxidation and Dielectric Films Growth
Part 7： Photolithography
Part 8： Deposition and Metallization
Part 9： Wet Etching
Part 10： Dry Etching
Part 11： Doping Processes
Part 12： Dicing and Packaging
Part 13： Advanced Semiconductor Processes

Required reading of Masterpiece：

1. Class notes, handouts, and papers

Main materials：

2. Sze and Lee, Semiconductor Device Physics and Technology, WILEY, （2012）

Reference materials：

3. 教材中譯本：施敏、李明達, 半導體元件物理與製作技術 3rd, 國立陽明交通大學出版社（2013）

4. Peter Van Zant, Microchip Fabrication： A Practical Guide to Semiconductor Processing, McGraw－Hill Education.（2014）.

七、附件：教學計畫

Week	Date	Teaching Chapter	Before Class Preparation	Homework Exam Notes
1	09/11	Course Introduction		
2	09/18	Overview of Semiconductor Devices	Semiconductor	
3	09/25	Background Information	Cleanroom	
4	10/02	Silicon Wafer Preparation	Crystal Growth	
5	10/09	Oxidation	Film Formation	
6	10/16	Dielectric Films Growth	Film Formation	Quiz 1 15%
7	10/23	Photolithography	Lithography	
8	10/30	Midterm Review		
9	11/06	Midterm		Midterm 30%
10	11/13	Deposition	Deposition	
11	11/20	Metallization	Metallization	
12	11/27	Etching	Etching	
13	12/04	Impurity Doping	Diffusion	
14	12/11	Impurity Doping	Implantation	
15	12/18	Dicing and Packaging	Integrated Devices	Quiz 2 15%
16	12/25	Advanced Semiconductor Processes	Handout Notes	
17	01/01	Final Review		
18	01/08	Final		Final 30%

1. Class Attendance: 10%
2. Quizzes: 30%
3. Midterm: 30%
4. Final: 30%

Cheating and plagiarism are not allowed in this class~!!

國立彰化師範大學電機工程學系
113 學年度第 1 學期全英語授課課程實施報告

課程: 碩士班-專題研討(一)
學年度: 112 學年度第 2 學
期 教師: 張譽鐘

這門課是電機系碩士班二年級的必修課程，主要授課方式是讓學生研讀英文學術論文，並上台用英文報告心得，於報告時要與台下同學用英文問答，並每週繳交以英文撰寫之聽講心得報告。老師會審閱他們每週的心得報告，然後在上課時給予綜合講評。所以這門課，在英文方面，同學有練習到聽說讀寫各方面，在專業方面，也與他們自己的研究相結合，並同時可以提升同學的英文簡報能力。課程中規定同學的演講與問答皆以英文為之，老師們再適時導正。

一般來說，學生們都很怕在公共場合說英文，但在這個國際化的時代，能否開口用英文與人溝通與其競爭力極為相關。大部分學生不敢開口說是因為怕人家笑，或怕別人聽不懂自己說的，改善這種窘境的最好方式就是多練習。因此這門課提供了一個很好的機會，因為這門課主要是讓同學上台報告與問題討論。

上課的進行方式簡述如下:

1. 同學先用英文在 20 分鐘內報告一篇學術論文。
2. 然後請同學分組討論 3 分鐘，因為同學們各自來自不同領域，也許對報告內容無法立刻抓到重點，需要時間消化。
3. 然後進行問題提問，全部以英文進行，規定每位同學每學期至少問五個問題。這是讓同學對於演講不懂的部分，詢問演講者，加深了解。
4. 問答完後，再讓同學討論 1~2 分鐘，好好消化一下剛剛的問答內容。
5. 最後，演講同學用事先以 PPT 準備好的 3~5 個問題問台下同學，讓各組搶答，學期末會以各組答題成績，記入一部分的學期成績。如此讓同學在遊戲中學習，為了各組別的榮譽與自己成績，大家都很熱烈討論，因此可達成很好的學習成效。

這門課已實施全英文授課多年，一開始授課老師都很擔心這門課用全英文授課的模式會不會不好，然而經過了這幾年的經驗，老師們都已一掃之前的疑慮，而正面看待此門課帶給同學們的成效。就我的觀察，同學們似乎也對於用英文上這門課持正面態度，雖然對同學們來說壓力很大，但真的是

有壓力才有成長。他們大部分人都花很多時間準備這門課的上台演講，這門課可說是碩班學生花最多時間的課程了，經過一年此門課的洗禮後，他們的英文溝通能力平均來說有很明顯的進步，而且也更樂於與人討論其專業領域的知識。

一般來說，學生們都很怕在公共場合說英文，但在這個國際化的時代，能否開口用英文與人溝通與其競爭力極為相關。大部分學生因為在意同學眼光而不敢開口，或者沒有自信，改善這種情況的最好方式就是多練習，因此這門課提供了一個很好的機會。然而一開始要打破學生們的心防，使他們大膽用英文溝通並不容易，老師們要營造一個相對輕鬆的氣氛，使學生願意講，而且要讓他們覺得即使講不好也沒關係，重點是要大膽的去講、去練習，在問答的過程中，老師們先引導較敢說的學生多說，來帶動氣氛，讓不敢說的學生也能一起融入全英文的討論氛圍中。一整年下來，可以明顯感受到他們對於用英文溝通較有自信，我相信學生們應該也有感受自己的進步。這門課藉由師生間的互動，與同學間的討論，打開學生的心防，讓他們能在潛移默化中提升其英文與專業能力，我想這門課以英文授課方式進行確實有很好的成效，應該持續進行。

我在校課程委員會曾聽過與委員對於全英文授課成效的疑慮，如前所述，其實我本身本來也不抱持樂觀看法，尤其是我之前也開過講述型課程的全英文授課，我覺得效果很差，教課進度慢，而且學生的理解程度也差。然而，對於此門課來說，經過這幾年來的實驗，我覺得全英文授課是很有幫助的。雖然多了一層英文的障礙，台下同學對台上講者所講的內容也許瞭解程度有限，但這門課可以督促他們用英文去溝通與吸收知識，正如同未來他們在職場上會遇到的狀況，上課時我們還會安排討論時間，讓他們有時間去消化演講者的內容，因此這門課提供了一個很難得的機會讓他們互相瞭解彼此的研究領域，並以英文溝通。據我的觀察，經過此課的洗禮，原本英文較好的同學，變得更有自信，而英文不好的同學，也更樂於開口。因此我認為，此種交流討論的課程，是適合進行全英文授課的。

國立彰化師範大學電機工程學系
113 學年度第 1 學期全英語授課課程實施報告

課程: 碩士班—書報討論(一) (52024)
學年度: 113 學年度第 1 學期
修課人數: 24 人
教師: 林昭志

本課程為本系碩士一年級書報討論，有別於傳統講授課程，加入學生間的互動、交流。課程進行方式為學生輪流上台報告，台下同學可提問及參與討論，這樣的上課型態，非常適合全英教學，能有效提升學術英語能力。

碩一同學這學期剛進研究所，本學期面臨的首要挑戰即是閱讀國際期刊論文。對許多同學而言，是第一次讀國際期刊論文，這是挑戰也是學術訓練。為使報告內容更具共鳴性，並提升學習效率，報告主題設定為同學正在進行或未來研究相關領域的國際期刊論文。透過此方式，同學在準備報告時，能更易於理解研究背景與理論，並從中獲得更深刻的啟發。

在上課的過程中，不斷鼓勵同學，在英文口頭報告及問答環節，請盡量用英文表達，不要害怕犯錯。以及每一次的英文嘗試，都是在為自己建立英文思考的習慣。即使表達不盡理想，每一次練習都是成長的動力。本課程初期或許有些挑戰，但只要同學們互相鼓勵、勇於開口，在碩士班的學習過程中，英文能力和專業知識都一定會有顯著的進步。

全英授課(113-1 財務管理)

開課系所:會計系；授課老師: 湯玉珍老師；開課科目: 財務管理

這學期開了一門大二的全英授課的課程，財務管理。茲將其上課情形簡述如下:

財務管理:

這學期的全英文授課，是我進彰師大以來第一次全英授課沒有 TA 的協助。但是因為沒有申請遠距的授課,所以也減輕了一些繁瑣得繳交教育部及學校的文件。但是全英授課這門還是需要很多的前置及後續的工作。所幸這學期的課代幫了大忙。本班同學的配合度也是很高的，同學們的程度也是不錯，雖沒有 TA 的協助改考卷，也是在最後繳交成績的一刻前將成績改完上傳，但不得不說，這學期的財務管理全英授課實在是挺辛苦的。未來希望學校能夠有 TA 的預算編制。

國立彰化師範大學會計學系

英語授課心得分享

科目：經濟學 I (Economics I)

授課老師：薛明賢

授課班級：會一甲、乙

心得：

對於大一學生來說，英語授課課程可能是第一次接觸。因此許多學生對於英語授課的學習成果會比較擔心。因此，在過程中我透過舉例、現場繪製圖表方式，將較為艱深的內容轉換成易懂的圖文說明，所以讓學生對於英語授課內容較為能接受。另外，我會視學生的反應，以及針對專有名詞，適時用中文再解釋一次。綜上所述，英語授課對學生而言，似乎沒有很大的負擔。本心得將分別針對「授課過程」,「學生學習狀況」與「建議」三項目來進行討論。

授課過程

為了兼顧學生對於課程內容的完整程度與英語「聽、說、讀、寫」的要求，我在講授的過程中，是以七成英文、三成中文的方式輔助學生的學生。我會藉由提問問題的方式，適時了解學生吸收狀況，

當我在教授此課程時，我採取的方式是以課堂前 30 分鐘進行小考、期末口頭與書面報告、期中考試、期末考試。目的是協助學生有動機吸收上課內容廾予以活用。學生在進行口頭報告時，必須先選定一個國家。隨後，再利用上課

所學得的經濟學理論與商業知識套用在個案國家中。由於個案國家的經濟情況不像課本內容如此單純，因此學生必須要全盤思考可能的理論有哪些，才能解釋其個案國家整體的經濟概況。

另外，本學期新增英文書報討論，指定三篇與授課內容相近之華爾街日報文章，請同學進行重點摘要與回答指定問題。另外，同學再把回答的答案帶過來課堂上，分組進行小組討論。討論過後，每組將討論結果 post 在 Padlet 上面。我再邀請各組來台上分享其討論結果。透過這樣的方式，不僅提升同學閱讀與利用所學對該文章進行針砭之能力，也能將學生辯思的結果留存在 Padlet 上面，作為學習與教學的軌跡。

學生學習狀況

因為本學期另外在課堂前 30 分鐘進行小考，可以讓學生比較能夠了解自己上週的學期狀況。我也可以同時了解學生吸收情況，調整本週講課進度。另外，我也要求學生將上課內容與其負責國家的經濟情況予以結合呈現於期末報告中。另外，我也要求學生需於回家作業上閱讀並評論英文新聞，對與課堂所學之理論套用於報告中。接著，再請同學與組員討論其回家作業的答案，從中交換學習心得。從學生交過來的作業中，再對照同學在課堂上分享討論的結果，我發現學生在小組意見交流後，增加學習的深度與廣度。

由於我們將期末小組報告時間縮短為 15 分鐘，同學可以學習利用 15 分鐘的時間把最重點的部份以英語方式報告。大部份同學都能夠直接站在台前，在

不看稿的方式把重點講出來。顯然大一新生英文能力逐年提昇。

本學期學生認真學習，課堂中間休息也有學生與老師討論問題。同學積極學習的態度的確有帶動全班的學習態度與學習成效。

建議

本課程在書報閱讀上，指定一篇文章進行閱讀與並回答指定問題，同學會比較能聚焦討論。另外，在期末報告上，亦給同學一份樣本供同學參考。因此本學期同學無論在書報討論的內容與期末報告內容上相較過去年度較為聚焦。

在口語報告方面，同學需於 15 分鐘內完成報告，因此同學在英文口說準備上就有提早準備了。建議，如果未來提供英語授課課程時，老師預先給予同學樣本、提早告知同學報告時間，讓同學提早準備。其實同學英文口語表現自然就可以有所突破。

另外，透過平板電腦即席繪圖、製表，可以讓同學能夠以生動、有邏輯的方式去了解課本的內容，也能幫助學生突破語言上的困難。

本課堂亦有外系與德國交換學生來修課，外系與德國交換學生對於經濟時事有不同觀點。開放他系學生修課，可以幫助學生學習與不同專業領域之同儕合作。

國立彰化師範大學會計學系

英語授課心得分享

科目：Case Study in Finance

授課老師：薛明賢

授課班級：會碩一

心得：

Case Study in Finance 主要以個案探討的方式，讓學生能夠了解到一個企業進行財務決策時，通盤考量的因素會有哪些。藉以讓學生將個別的財務理論能夠融匯貫通，運用在實際的企業財務決策上。過去在修習這門課程時，已是英文授課。本學期是以老師的角色來帶領學生學習這門課，所以態度上更是以戰戰兢兢的心情來準備這門課程。本心得將分別針對「授課過程」,「學生學習狀況」與「建議」三項目來進行討論。

授課過程

為了兼顧學生對於課程內容的完整程度與英語「聽、說、讀、寫」的要求，我在上課之前，會提供補充教材給學生，讓學生提早準備我可能會問的問題與討論的議題。

由於是個案教學，所以學生在上課前必須要對我們個案公司的情況要十分了解。因此，我會要求學生必須於上課前預習個案，並閱讀補充講義。這樣的方式，可以讓學生在正式上課的過程中，直接可以切入問題的核心進行討論，我亦可以從當中建立學生對於財務相關議題的理論知識。

另外，為了要讓學生對於財務理論知識的融匯貫通，我亦要求學生必須要選擇一家上市公司作為個案公司，深入討論該公司在公司理財議題上的決策模式與策略。由於會計系學生未來無論是在會計師事務所工作或者是產業界工作，都會遇到財務金融相關議題。本課程的教學方式是希望讓學生可以親自去面對實務上的公司理財策略，建立學生找尋問題，解決問題的能力。

在期末報告中，學生將會以個案探討的方式，分析企業公司理財的決策過程與結果。為了提高學生對於英文講述、撰寫報告的動機，若學生能夠盡量用英文口頭報告、撰寫報告，我會提高其學習成績，藉以鼓勵其用心與積極學習的態度。

學生學習狀況

本班學生今年修課人數較以往多，因此比較難掌握到每個學生對於課程內容上的需求。為了了解同學的學習狀況，本學期會請同學登記自己的發言次數，鼓勵同學發言。因為從同學發言內容，才能了解同學的學習狀況。

從學生的報告中發現，雖然學生寫作所使用的英文並不是那麼標準，更可以說是台式英文。但是學生願意嘗試用英文寫作、報告，我覺得值得鼓勵與讚賞。另外，個案教學最重要的是老師與學生間的互動，所以我盡量鼓勵學生能夠用英文來進行提問與回答問題。我一直提醒學生即使是小組討論，也要盡量使用英文，才能夠習慣英文的造句模式，才能訓練自己很直覺地用英文陳述。

建議

雖然 Case Study in Finance 英語授課已經在會計系開課多年，但是在教學過程中，仍感覺到有些地方還可以再更好。我覺得未來課程中，還可以再改善的項目有以下幾點。

學生學習英文的動機可以再鼓勵。因為學校在選課制度上並未要求學生一定要選擇以英文授課的課程，導致會來註冊英語授課的學生基本上對於使用英文都是不太害怕。相反的，不喜歡英文或者是英文不好的學生，反而不會有動機來註冊這樣的課程。長期下來，英語好的同學英文會越好，越差的同學反而越差。所以，學校、老師要思考，如何吸引這些不喜歡英文的同學來學習。畢竟，每位同學在未來職場上都有可能會遇到英語的工作環境。

英文授課班級互動需再加強。本學期最開始是由我進行個案報告示範。過程中我會問學生許多問題力，但是學生回答意願不高。我的解讀有二：一、學生害怕用英文回答問題，或怕說錯答案；二、學生聽不懂問題。基本上學生回答的答題，符合我的預期。因此，學生有其專業能力，可惜在英文表答能力上還是不行。由於本班同學英文能力差異很大，所以要如何在英文好的學生搶著回答問題時，也給其他同學發言的機會也是我這學期時時刻刻注意的。不過，因為這學期請同學登記其發言次數，所以也提高同學的參與程度。

國立彰化師範大學 113 學年度 第一學期 英語授課心得分享

科目：會計研究方法

授課老師：林玉君

授課班級：會碩一甲

1. Course Instruction

This course is designed to train students in independent thinking by incorporating fundamental research methods in business studies. It integrates key modern accounting research methodologies, including **Event Study, Questionnaire Method, Regression Analysis, and Selection Biases**. During instruction, I emphasize both **oral and written reports** as well as **class discussions** to enhance students' comprehension of the course content. Additionally, I have recorded **digital teaching materials** to serve as pre-class learning resources under the flipped classroom approach.

2. Student Learning Progress

Thanks to the university's support, I have been able to continue conducting this course entirely in English. In the first half of the semester, the course adopts a **flipped teaching** approach, allowing students to review pre-recorded lecture videos in advance. This method helps students, especially those unfamiliar with English instruction, to **replay and practice listening**, thereby improving their comprehension skills. We have observed a significant improvement in students' learning outcomes through this approach.

Each week, students are required to **preview the lecture materials** and submit **one question** per chapter before class. These questions are addressed in class, ensuring that students **actively engage** with the content and have their doubts clarified in real time. The explanation process also serves as a review session, reinforcing their understanding through both **pre-class preparation and post-class revision**.

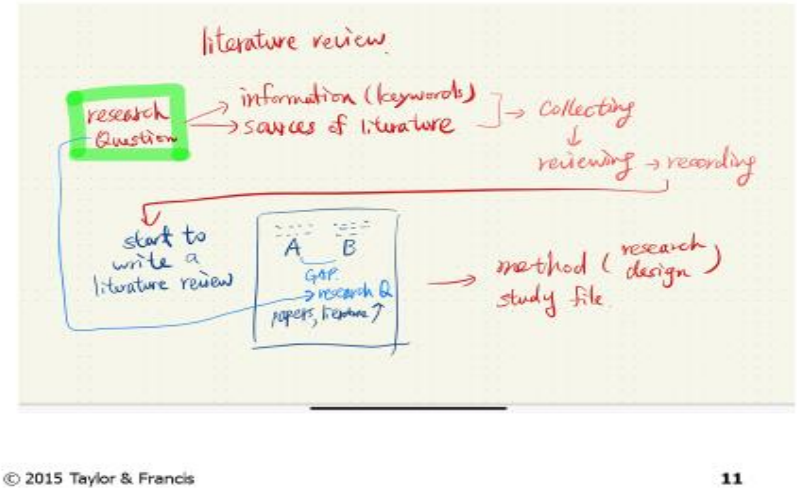
Another unique aspect of this course is the incorporation of **design thinking** in the learning process. The course includes five **group discussion reports**, covering topics such as:

1. U.S. Congress SEC Reports
2. Classification of Database Sources
3. Research Topic Brainstorming

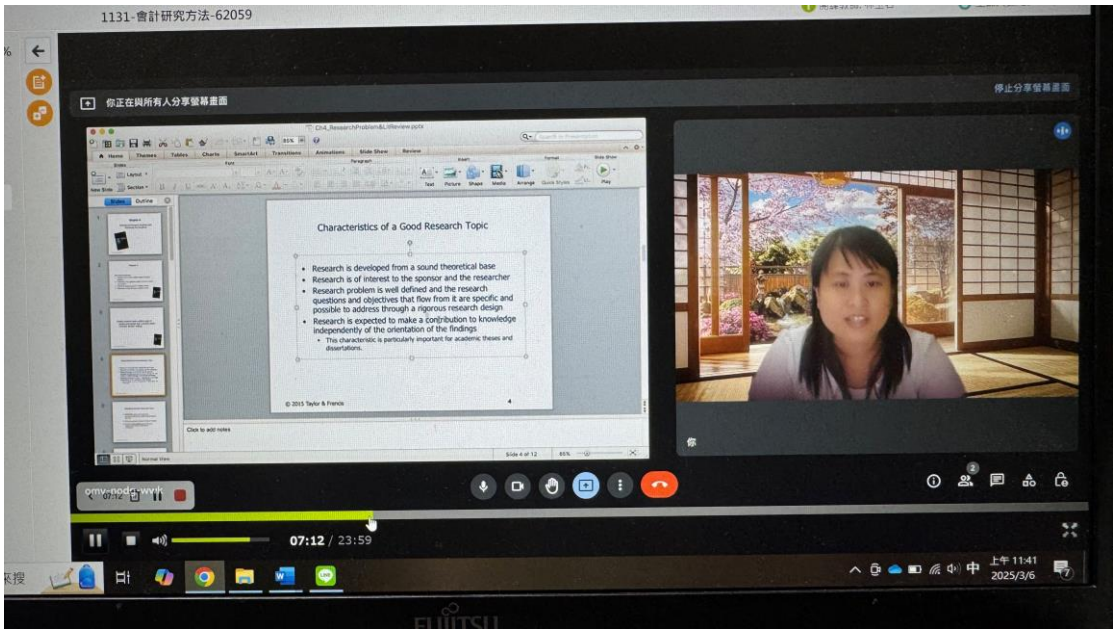
4. Research Framework Visualization
5. Research Report Analysis

By guiding students through these five reports using **question prompts and analytical techniques**, I help them develop **innovative problem-solving skills** through **design thinking**, conducted entirely in English. By the end of the semester, students reported that this learning method was challenging yet highly effective in enhancing their **confidence and practical knowledge**.

Furthermore, tools like **Google Survey Forms** are used to track student progress throughout the course. Below is a brief **teaching video and content guide** on design thinking methodology.



圖一　上課手稿



圖二 事先錄製的英文教學影片，讓學生課前先觀賞學習。每周上課前，學生須對影片教學內容提出一個問題。

國立彰化師範大學___113__學年度第__1__學期

全英語授課實施情形報告

壹、授課教師：李桓伊

貳、科目名稱：學士班-商用數學

參、學分/時數：3/3

肆、開課班級：會一乙

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

在這門商用數學課程中，學生的學習進度逐漸展現出良好的適應力。雖然剛開始因為英語授課以及財務數學概念的引入，部分學生感到挑戰，但隨著課程的推進，大多數學生都能逐漸適應用英語理解專業數學內容，並透過範例練習來加深印象。同時，他們的原文教科書閱讀能力在一學期內顯著提升，從最初的陌生感逐漸熟悉，到逐步掌握閱讀專業英文書籍的技巧。這些進步反映在作業表現上，顯示出他們對課程內容的理解與應用能力都有所成長。

二、授課心得與建議

在授課過程中，我深刻體會到學生對於全英語授課的適應曲線。雖然在初期學生對於數學概念和英語講解的雙重挑戰感到壓力，但透過反覆的範例練習和引導他們閱讀原文教科書的過程，學生逐漸具備了以英語理解與應用數學的能力。這也讓我更加確認，透過合適的教材選擇與循序漸進的教學方法，學生不僅能夠提升數學知識，也能增強未來在專業領域中的英語閱讀和理解能力。整體而言，全英語授課對於學生的學術能力及未來職場競爭力皆有極大助益。因此，建議學校能持續支持並鼓勵這類課程，為學生提供更多元的學習機會與資源，以進一步提升學生的學習成效和國際競爭力。

國立彰化師範大學學生雙語化學習計畫
113 學年度第一學期
全英語授課實施情形報告

壹、 授課教師：林宜君

貳、 科目名稱：Management

參、 學分/時數：3

肆、 開課班級：一年級

伍、 修課人數：46

陸、 實施情形：良好

一、學生學習狀況

1. 實體上課時期的學習狀況

在實體上課期間，學生的出席率和準時上課率表現良好，整體學習態度相當積極。儘管課程全程使用英文授課，部分內容可能無法完全理解，但學生仍然不敢怠慢或隨意缺席。然而，在課堂上進行英文互動時，許多學生因為害羞而不敢發言，甚至會逃避這種互動，導致課堂氣氛有時變得尷尬。為了改善這種情況，我努力以輕鬆的方式活躍課堂氛圍及部分中文解釋，甚至放慢速度多次講解。從期中考試的批改結果來看，學生具備一定的英文理解能力，但由於擔心在公眾場合犯錯，他們對與老師的交流感到焦慮。

2. 線上學習時期的學習狀況

本學期有跟德國法蘭克福大學(彰師大姊妹校)Dr.Iris 的 MBA 合作線上教學 3 小時，主要介紹台灣半導體產業及 AI 科技介紹。即使轉為線上學習，學生的上課準時率和出席率依然保持良好，為了維持跨文化學習交流，鼓勵學生努力發問，連結加分，發現效果很好，學生詢問許多德國學習及生活習慣，讓學生理解跨國學習差異，德國學生也表達更加了解台灣軟實力。

二、授課心得與建議

在課程設計中，我考慮到了學生的語言需求，並在每個章節開始時採用雙語教學，這是一個有效的策略來幫助學生掌握基本概念。以下是一些具體建議，以進一步增強這部分的學習效果：

1. 選擇相關且易於理解的影片：確保所選影片內容既有趣又與課程主題緊密相關，這不僅能幫助學生更好地理解概念，還能激發他們的學習興趣。

2. 影片前的導引問題：在播放影片之前，向學生提出一些問題或要點，讓他們在觀看過程中帶著目的去學習，提升影片觀看的有效性。

3. 影片後的討論：播放完影片後，可以進行小組討論或全班討論，幫助學生鞏固觀念並解決疑問。

4. 提供筆記或重點摘要：提供簡單的講解筆記或重點摘要，以便學生在課後復習時有參考資料。

5. 互動小測驗：播放影片後進行一個簡短的小測驗，以檢查學生是否理解了關鍵概念，並及時給予反饋。

國立彰化師範大學 113 學年度第 1 學期
全英語授課實施情形報告

壹、授課教師：陳信憲

貳、科目名稱：投資組合分析

參、學分/時數：3/3

肆、開課班級：財金三

伍、實施情形：

一、學生學習狀況(文字敘述或照片呈現)

Here is an example of a student project.

“Good morning. Today, I’m here to introduce an exchange traded fund that offers a way to invest the global stock market in a single trade, the Vanguard Total World Stock Index Fund ETF Shares, which is so-called VT. This ETF is designed to provide investors with an easy and efficient way to invest worldwide. VT is managed by the Vanguard Equity Index Group and tracks the FTSE Global All Cap Index. With $52.7 billion in total assets and a low expense ratio of just 0.07%, which means VT is one of the most cost-effective global ETF available. The reason why VT is unique is because it offers multiple choice, covering markets across the globe, with stocks accounting for 99.06% of its portfolio. And its top 10 holdings include leading companies like Apple, Microsoft, NVIDIA, and TSMC, together it represents 19.02% of the fund’s total assets. This highlights that VT is focusing on investing companies that lead global economic growth. In terms of risk and reward, VT is rated at level 4, it means it’s at medium risk, but its long-term performance is still impressive. For example, in 2023, VT had a return of 22.02%, outperforming its category average.

When compared to other global ETFs like the ACWI ETF and iShares Global 100 ETF, VT's Sharpe and Treynor ratios shows its competitive risk-adjusted returns, making it an attractive option for investors.

In summary, the Vanguard Total World Stock Index Fund ETF combines the advantages of global market exposure, low costs, and stable performance. It is a great choice for long-term investors seeking a simple and effective investment solution. That’s all I want to share with you. Thank you for your time.”

二、授課心得與建議

本課程有 37 位本系的學生及 1 位外系雙主修學生選課，是第二學期以全英語方

式上課，雖然有期中考、期末考、又要上台報告但學生已經比較習慣全英語方式且適應良好，少數在課堂上仍然有語言障礙的同學也會利用 Office Hour 來詢問課堂上不清楚的部分。整體而言，對師生來講更能駕輕就熟了。本課程也搭配學校的高教深耕計畫業師協同教學，業師細心的說明金融從業人員應該具備的相關證照，以及未來的實習與就業管道，讓學生們對未來更有明確的目標。學生對業師的回饋非常棒整體滿意度達到 4.85 分。

教學資料及評量詳如附件：

National Changhua University of Education

113 Academic Year 1st Semester Course Plan

【*can't be empty】

*Instructor：Dr. Bryan H. Chen *Email：hhchen@cc.ncue.edu.tw

*Course Name: Investment Portfolio Analysis *Class: Junior

*Credit ： 3 Credit(s) 3 Hour(s) *Course Type ： ☑Obligatory ☐Elective

*EMI Courses： ☐Yes ☑No

*Full English ☑Yes ☐No(Items ☐Taught ☐Materials ☐Discussion ☐Homework <Multiple>)

* Teaching evaluation questionnaire：1

1. General course 2. Practicum/Laboratory course 3. Physical activity course

* Teaching mode： 6

1.Classroom instruction 2. Practicum/Laboratory course 3. Physical activity course

4.Distance learning(Asynchronous) 5.Classroom & group discussion(PS.1)

6.Classroom & Assisted distance learning(Synchronous or Asynchronous)

7.Other(Such as sports, education, internship or experimental course)

*PS.3 教學內涵：☑ 一般課堂教學 ☐案例/專題研究 ☐實務操作/演練 ☐校內外實習

Immersing the following issues or contents：<Multiple>

☐Gender Equity ☑Character Education ☐Service Learning

☑Intellectual Property
☐Life Education(☐1.自我傷害、自殺防治、☐2.藥物教育) ☐人權教育 ☐環境教育（☐1.食安教育 ）☐海洋教育 ☐科技教育 ☐資訊教育（☐1.資訊素養與倫理 ☐2.數位教學 ☐3.數位學習 ）☐能源教育 ☐法治教育 ☐安全教育（☐1.交通安全) ☐ 防災教育 ☐家庭教育（☐1.家庭暴力防治 ☐2.家政教育 ）☐生涯規劃教育及職業教育與訓練（☐1.勞動教育-勞權知能 ）☐多元文化教育(☐1.新移民教育) ☐閱讀素養☐戶外教育（☐1.觀光休閒教育 ☐2.山野教育 ☐3.風險管理知識與技能 ）☐國際教育 ☐原住民族教育 ☐藝術與美感教育 ☐勞動教育 ☐家政教育 ☐新移民教育 ☐本土教育（☐1.原住民族及文化教育相關課程 ☐2.閩南語文相關課程 ☐3.客語文相關課程 ）☐媒體素養教育 ☐性教育 ☐理財教育 ☐消費者保護教育 ☐觀光休閒教育 ☐另類教育 ☐生活教育 ☐融合教育 ☐特殊教育 ☐媒體識讀 ☐適用設計 ☐修復式正義 ☐高齡教育 ☐人口教育 ☐食農教育

*教育專業課程：☐YES ☑NO

*Objective:

This course is an overview of investment analysis and portfolio management, and it is designed to provide a practical, hands－on learning environment. The two main goals of the course focus on honing your investment analysis and valuation skills （i.e. learning how to determine whether a company is a good investment） and developing portfolio management skills that will help you combine assets together in order to minimize risk while maximizing return. These goals will be accomplished by a combination of studying material from the text, participating in lectures and class discussions in finance field.

*Learning Outcomes and Competences:

Investment Analysis and Portfolio Management is they study of equity and debt markets as well as an overview of portfolio management for individual and institutional investors. Course coverage includes fundamental valuation techniques, the efficient markets hypothesis, risk and return, primary and secondary market mechanisms, and international investing. The course provides an overview of the bond market including bond valuation and bond portfolio management. The topics of investment policy, portfolio theory and construction, asset allocation, efficient diversification, and performance evaluation are explored along with the vital roles of computer technology and electronic trading.

*Teaching methods: <Multiple>

☑Lecture	☐Demonstration	☑Exercise

☑Case study	☑E-learning	☐Dialogue learning
☐Implementation	☐Film shows	☐Service learning
☐Keynote speech	☐Experiential learning	☐Visit
☐Industry Internship	☐Educational Practice	
Teaching methods Memo： 		

***Scoring methods (Set the total percentage to 100%)：**

Quizzes before class	%	In class quizzes	%
Mid－term exam	30%	Final exam	30 %
Class participations	10%	Written report	%
Practice sessions	%	Project Presentation	30 %
Assessment of student performance	%	Case analysis & written report	%
Professional certification	%		%
Scoring methods Memo： 			

Course pre-requisites: Students must have taken Investments

Required reading of masterpiece:

*Main materials:

Reilly, F., Brown, K., ＆ Leeds, S. J.（2019）. Essentials of Investment Analysis and Portfolio Management, 11th Edition, Thomson.

Reference materials: All 2023-forthcoming SSCI journals.

Online material：

Site	URL or Directions
☐E-learning center	
☐Other teaching sites	
☐Facebook	
☐FTP	

*The development of core ability: <Each Degree must fill in at least one bracket>

Degree	Core Ability	Correlation(0-10)
A1	knowledge bases for finance	**8**
A2	knowledge bases for financial database	**8**
A3	Critical thinking and problem solving	**8**
A4	Team work and communication skill	**8**
A5	Life-long learning	**8**
A6	Business ethic and social responsibility	**8**
A1	knowledge bases for finance	**8**
A2	knowledge bases for financial database	**8**
A3	Critical thinking and problem solving	**8**

National Changhua University of Education
113 Academic Year 1st Semester Course Schedule

Week	Range	Date	*Teaching Chapter	Before Class Preparation	Homework/ Exam/Notes
1			Course Introduction		
2			Stocks Review		
3			Chapter 10. The Practice of Fundamental Investing		
4			Chapter 11： Equity Portfolio Management Strategies		
5			Chapter 12： Bond Fundamentals and Valuation		
6			Chapter 13： Bond Analysis and Portfolio Management Strategies		
7			Chapter 17：Professional Portfolio Management Alternative Assets，		

			and Industry Ethics		
8			Chapter 18： Evaluation of Portfolio Performance		
9			Mid-term		Mid-term
10			Mutual Fund Project Introduction		
11			Mutual Fund Project Introduction		
12			Guest Speaker		
13			Guest Speaker		
14			3MT Project Presentation		
15			3MT Project Presentation		
16			3MT Project Presentation		
17			Final exam		
18			Curve		Final exam

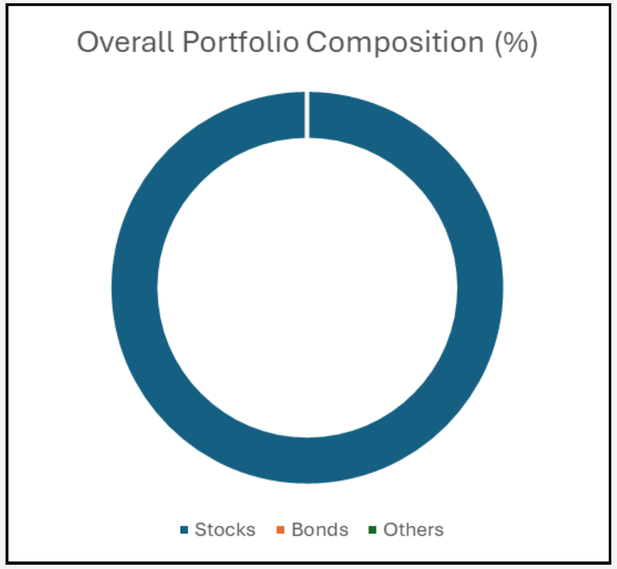
Course Content Memo: <The request of homework, etc.>

- Class Participation (10%) - Each student will be expected to participate in class discussions and group activities to share the understanding of class materials.
- Mid-term (30%) – A Mid-term will be required to take.
- Final (30%) – A Final will be required to take.
- 3MT Project (30%) – A project will be required to analyze the trend of financial industry.

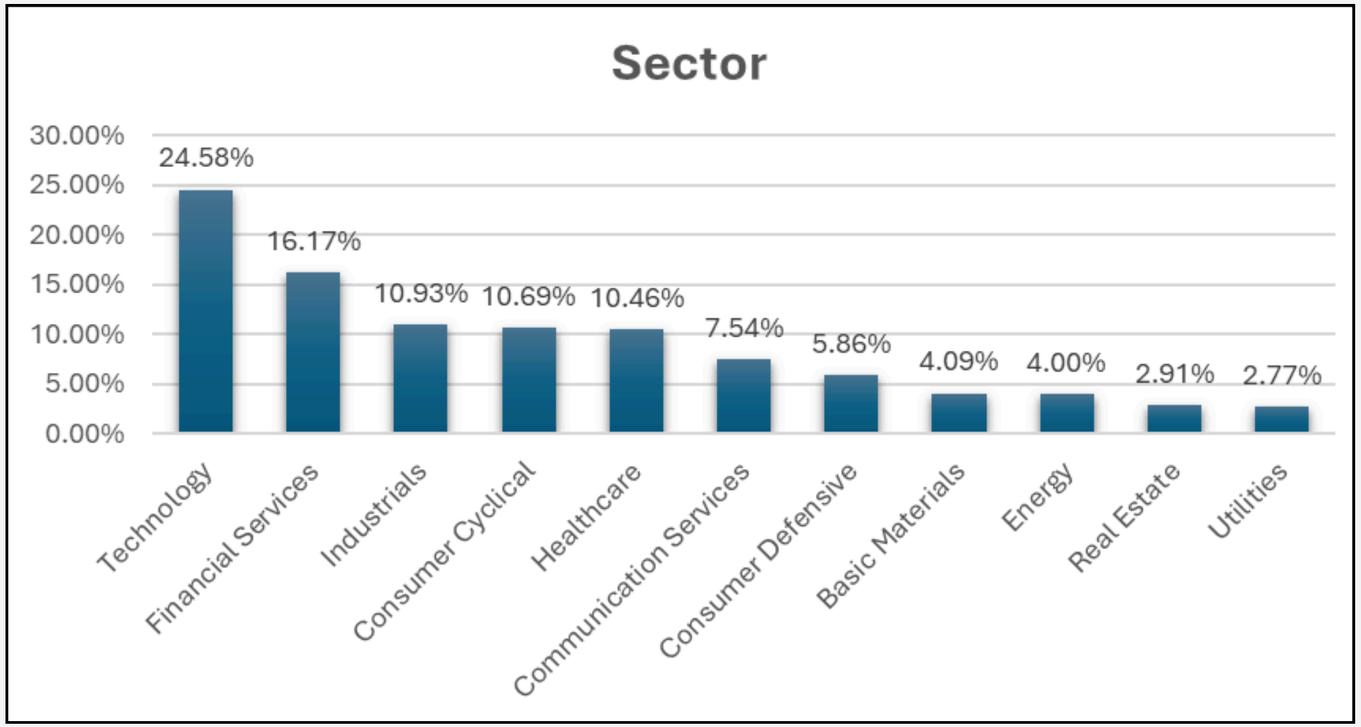
「教師教學意見反應問卷」總平均為 4.69。

Fund Profile

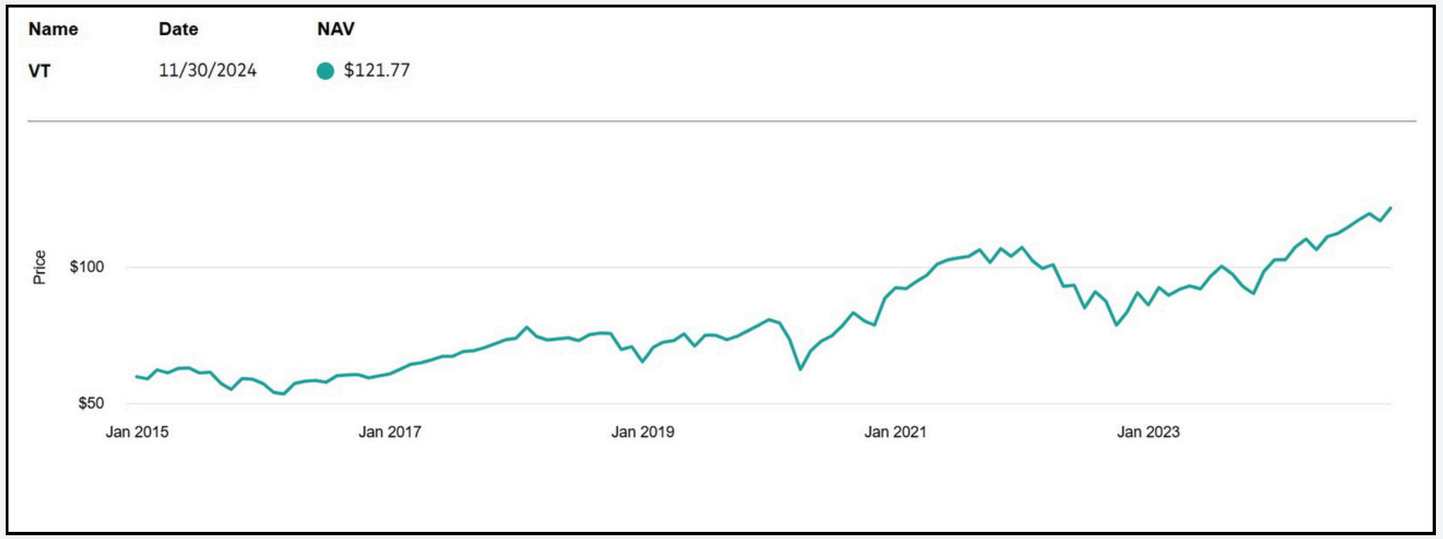
Fund Name	Vanguard Total World Stock Index Fund ETF Shares (VT)		
Fund Family	Vanguard	Benchmark	FTSE Global All Cap Index
Inception Date	Jun 24,2008	Fund management	Vanguard Equity Index Group
Currency	USD	Fund Total Net Assets	$52.7 Billion
Management style	Index	Share Class Total Net Assets	$40.2 Billion
Asset class	International/Global Stock	Risk / Return scale	★★★★
Category	World Stock	Expense ratio	0.07%



Overall Portfolio Composition (%)	
Stocks	99.06%
Bonds	0.00%



Top 10 Holdings (19.02% of Total Assets)	
Company	% Assets
Apple Inc.	3.79%
NVIDIA Corporation	3.59%
Microsoft Corporation	3.49%
Amazon.com, Inc.	2.00%
Meta Platforms, Inc.	1.44%
Alphabet Inc. Class A	1.17%
Alphabet Inc. Class C	0.97%
Broadcom Inc.	0.89%
Taiwan Semiconductor Manufacturing Company	0.87%
Berkshire Hathaway Inc.	0.81%



	Sharpe Ratio	Treynor Ratio	Jensen Ratio
Vanguard Total World Stock Index Fund ETF Shares (VT)	0.56	7.55	0.1
iShares MSCI ACWI ETF (ACWI)	0.56	7.56	0.1
iShares Global 100 ETF (IOO)	0.73	10.6	2.8

Year	VT	Category
2023	22.02%	18.12%
2022	-18.01%	-16.67%
2021	18.27%	17.72%
2020	16.61%	12.96%
2019	26.82%	25.26%
2018	-9.76%	-10.06%
2017	24.49%	22.28%
2016	8.51%	6.93%
2015	-1.86%	-0.92%
2014	3.67%	3.67%
2013	22.95%	24.08%
2012	17.12%	14.39%
2011	-7.50%	-7.19%
2010	13.08%	14.49%
2009	32.65%	34.45%

Web Source

Yahoo finance : Vanguard Total World Stock Index Fund ETF Shares (VT)
https://finance.yahoo.com/quote/VT/performance/

Yahoo finance : iShares MSCI ACWI ETF (ACWI)
https://finance.yahoo.com/quote/ACWI/risk/

Yahoo finance : iShares Global 100 ETF (IOO)
https://finance.yahoo.com/quote/IOO/risk/

VT-Vanguard Total World Stock ETF | Vanguard
https://investor.vanguard.com/investment-products/etfs/profile/vt#portfolio-composition