課程教學大綱

課程名稱	（中文）科技英文			
	（英文）Science in English　(offered in English)			
授課教師	陳馨怡博士、黃芸茵博士			
開課系所別	工程與系統科學系			
開課學制	碩士班/博士班		人數限制	15
開課緣由	本校語言中心提供之綜合性科技英文相關課程難以全然符合本系學生之研究需求，此合開課程可直接針對系上學生需求及研究領域，提供完整科技論文之閱讀寫作與簡報之訓練，培養相關核心能力。			
開課學期	■上	上課時間		10.10-12.00 Thursday
學分數 Credit	2	演講時數 Invited lecture		2hr/week

此科目對應之系所課程規畫所欲培養之核心能力 Core capability to be cultivated by this course	■ 運用基礎數學、科學及工程知識的能力。 (5%) Ability to apply basic mathematics, science and engineering knowledge. ■ 善用電子、材料、熱流及工程物理專業知識於跨領域低碳綠能、奈米與系統科技應用的能力。 (5%) Apply multi-disciplinary electronics, materials, heat transfer and engineering physics in the fields of low-carbon green energy, nanotechnology and system technology. ■ 具備科技論文之閱讀寫作與簡報能力。 (65%) Be able to read and write technical papers and give technical presentations. ■ 溝通協調與團隊合作之能力。 (5%) Enable students to communicate effectively, coordinate and collaborate. (5%) ■ 發掘問題，以及創新思考解決問題之能力。(5%) Analyze problems and propose innovation solutions. ■ 認識產業的國際發展趨勢，瞭解工程技術對環境、社會及全球的影響，並培養終身自我學習成長的能力。 (5%) Know global development trends of industries, understand how engineering techniques influence the environment, society and world, and develop the ability to continue learning. ■ 理解專業倫理及社會責任之能力。 (5%) Understand one's professional ethics and social responsibility.
教學目的與課程說明 Objective and course description	這門課旨在提升本系碩博生科技英文表達能力，授課內容針對本系所研究的題材和論文寫作格式。透過深度閱讀、小組討論與英文口語寫作之實作練習等，讓學生熟悉本系相關領域之學術寫作及簡報規範（如會議摘要，Group Meeting，國際會議報告等）。此課程由本系專任教師與語言中心科技英文教師合開，結合雙方專長，一來可確保符合本系學生需求，二來提供本系學生更全面且有效益之訓練。

2	課程主要目標包括： 1. 提升學生對於本系領域論文格式與範例之瞭解 2. 培養有效閱讀本系領域學術文章之技巧與策略 3. 加強學生對於常用學術字彙與句型架構之使用 4. 建立自我反思與同儕互評之批判能力與技巧 5. 活用本系領域專業知識於並能有效表達與溝通

Science in English
Fall 2017

Course Description

This course aims at providing graduate students with the essential skills in academic written and spoken communications. Specific strategies for composing and revising texts will be introduced to guide students in writing for different academic purposes and audiences, and for effective discussion and presentation in lab meetings and other academic contexts. Along with lectures and class discussion, a variety of individual and collaborative tasks will be incorporated in class to better prepare the students with hands-on practices and greater metacognitive awareness of writing/speaking processes.

The course objectives include (1) to increase students' awareness of academic expectation and performance requirements of writing styles and formats, (2) to develop reading skills and strategies for scholarly articles, including developing academic vocabulary, recognizing the structure of different types of texts, and analyzing components of texts to understand how arguments/claims are made and supported, and (3) to develop writing skills for logical development and clarity of thought, including improving grammatical and mechanical control, practicing constructive peer editing and self-correction techniques.

Course Requirements
1. Actively participate in all class activities.
2. Complete all written and non-written tasks on time.
3. Follow general guidelines of responsible conduct of research. Students are accountable for the integrity of the work they submit. Students are expected to be familiar with general academic expectations in terms of proper citation of sources.

Lesson Plan

Week	Topic of the week	In-class/Take-home task
1	Introduce myself--Contents: motivation for this lecture, expectation for this class, what do I would like to achieve at the end of this course, my background	
2	Who need research? What is research? Why write it up? – Writing is thinking Becoming a researcher (Orientation and open discussion)	
3	Talking about yourself as a professional/researcher	Self-promotion pitch

		Talking about your profession/discipline	Mock interview
	4	Research integrity and ethics (Case study) English for engineers: Vocabulary and phrases English for scientists: Vocabulary and phrases	
	5	Model essay analysis I (General-specific pattern)	Vocab quiz
	6	Model essay analysis II (Problem-solution pattern)	
	7	Writing skills: Definition, Summary & Paraphrase	Extended definition
	8	Practice summarizing an article precisely and briefly Practice converting a scientific article to be read by the public	
	9	Constructing a conference abstract	
	10	Improving my conference abstract	
	11	Constructing a research paper I: Introduction & Methods	
	12	How to summary a scientific paper and convert it in my introduction	
	13	Constructing a research paper II: Results & Discussion	Data commentary
	14	Constructing captions of figures and tables	
	15	Constructing a thesis draft	
	16	Presentation in the Group Meeting	
	17	Conference presentation	
	18	Conference presentation	

References

McCarthy, M. & O'Dell, F. (2016). Academic Vocabulary in Use. Cambridge, Cambridge University Press.

Swales, John M., & Feak, Christine B. (2012). Academic Writing for Graduate Students: Essential Tasks and Skills (3rd Edition). Ann Arbor: U of Michigan Press. (ISBN: 978-0-472-03475-8)

Williams, J. & Hill, D. (2009). *Academic Connections 4.* New York, Pearson. (ISBN: 978-0132338417)