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| **112(2)/2024 SPRING Semester TIGP-ESS課程資訊表**  **112(2)/2024 SPRING Semester TIGP-ESS course information form** | | | |
| 科目名稱(中文) | | 實用科學寫作 | |
| Course Title (English) | | Practical Scientific Writing | |
| 授課時間  Time | | Friday 9:00-12:00 | |
| 授課地點  Location | | Academia Sinica, IES room 305 | |
| 學分數  Course Credits | | 3 | |
| 主要授課老師 Main Instructors | | Kwan-Nang Pang (彭君能) | |
| 聯絡郵件  E-mail | | [knpang@earth.sinica.edu.tw](mailto:knpang@earth.sinica.edu.tw) | |
| 辦公時間 Office Hours | | by appointment | |
| 課程目標 Course Objectives | | To equip students with knowledge and skills in scientific writing, including but not limited to Earth Sciences. | |
| 授課內容 Course Description | | This elective course is designed for graduate students with English as a foreign language to understand the know-how of scientific writing. Key contents are word usage, text editing, preparation of figures, and common mistakes made by non-professional writers. Through lecture, discussion and group learning, the students are able to understand the essentials of scientific writing in an interesting way. | |
| 教科書/參考書 Textbooks/References | | [1] Bates, R.L., Adkins-Heljeson, M.D., Buchanan, R.C., 1995. Geowriting. American Geological Institute, Virginia, 138 pp.  [2] Yang, J.T., 1995. An Outline of Scientific Writing. World Scientific, Singapore, 160 pp.  [3] Glasman-Deal, H., 2010. Science Research Writing. Imperial College Press, Singapore, 272 pp. | |
| 自編教材比例  Self-compiled Textbook/References Proportion(if any) | | 100% | |
| 授課方式 Course Requirements | | ■講授(Lecture)；  ■研討(Seminar)；  □實習/實驗(Internship/Experiment)；  □個別指導(Individual Discussion)；  □其他(Other) | |
| 評量配分比重 Course Grade | | Mid-term Presentation (50%) and Final Exam 50% | |
| 課程領域Areas | | □基礎學科(共同)(Basic subjects (common))  □固態地球科學(Solid earth sciences)  □水圈科學(Aquatic sciences) [1]  ■應用語言(Applied Languages)  □大氣科學(Atmospheric sciences) [2] | |
| 產業領域Areas | | □地探科技(Geological monitoring technology)  □氣象科技(meteorological science and technology)  □太空科技(Space Technology) [1]  □環保科技(environmental protection science and technology)  □資訊科技(Informational Technology) [2]  ■教學研究(Teaching & research)  □地質科技(Geosciences and technology) | |
| 課程進度與內容  Lecture outline and content | | | |
| 週次  week | 主題  Topic | | 授課教師/指定閱讀或作業  Instructor/Readings or assignments |
| **1** | Introduction | | Kwan-Nang Pang (IES) |
| **2** | Anatomy of academic publications | | Kwan-Nang Pang (IES) |
| **3** | Basic English grammar | | Kwan-Nang Pang (IES) |
| **4** | Vocabulary in scientific writing | | Kwan-Nang Pang (IES) |
| **5** | Sentence and paragraph structure | | Kwan-Nang Pang (IES) |
| **6** | Making use of source materials | | Kwan-Nang Pang (IES) |
| **7** | Illustration using tables | | Kwan-Nang Pang (IES) |
| **8** | Illustration using drawings, photographs, and maps | | Kwan-Nang Pang (IES) |
| **9** | Revise and proofreading | | Kwan-Nang Pang (IES) |
| **10** | Mid-term presentation | | Kwan-Nang Pang (IES) |
| **11** | How to write an abstract and an introduction? | | Kwan-Nang Pang (IES) |
| **12** | How to write a method section? | | Kwan-Nang Pang (IES) |
| **13** | How to write a result section? | | Kwan-Nang Pang (IES) |
| **14** | How to write a discussion section? | | Kwan-Nang Pang (IES) |
| **15** | How to write a conclusion? | | Kwan-Nang Pang (IES) |
| **16** | How to get everything else ready? | | Kwan-Nang Pang (IES) |
| **17** | Improving rate of manuscript acceptance | | Kwan-Nang Pang (IES) |
| **18** | Final examination | | Kwan-Nang Pang (IES) |
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| 課程所屬學制(Educational System): 博士班(Doctoral Program) | | | |
| 核心能力I: 請點選本課程培養學生具備核心能力之強度指數，並填寫對應之評量方式  Please select core abilities and its corresponding assessments of this course | | | |
| 請勾選學程所訂之核心能力(可複選)  ■獨立思考與研究能力Independent thinking and research capacity  □進階數理及專業知識能力Advanced mathematical and professional knowledge and ability  □觀測模擬及分析推理能力Observation simulation and analysis of reasoning ability  □電腦及程式語言運用能力Computer and programming language proficiency  ■國際視野與語文溝通能力International perspective and language communication skills  □專業倫理及服務學習能力Professional ethics and service-learning ability | | | |
| 核心能力II: 請點選本課程培養學生具備核心能力之強度指數，並填寫對應之評量方式  Please select the core abilities and its corresponding assessments of this course | | | |
| |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | 強度指數 Overall rating of Core Abilities | 1 非常低 Very Low | 2 低 Low | 3 普通 Medium | 4 高 High | 5 非常高 Very High | 評量方式 Corresponding Assessments | | 獨立思考與研究能力 Independent thinking and research capacity | □ | □ | □ | ■ | □ | ■紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  ■口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  ■自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演  (Products/Creative Performance)  □其他(Others) | | 進階數理及專業知識能力 Advanced mathematical and professional knowledge and ability | ■ | □ | □ | □ | □ | □紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  □口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  □自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演(Products/Creative Performance)  □其他(Others) | | 觀測模擬及分析推理能力 Observation simulation and analysis of reasoning ability | ■ | □ | □ | □ | □ | □紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  □口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  □自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演(Products/Creative Performance)  □其他(Others) | | 電腦及程式語言運用能力Computer and programming language proficiency | ■ | □ | □ | □ | □ | □紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  □口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  □自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演(Products/Creative Performance)  □其他(Others) | | 國際視野與語文溝通能力 International perspective and language communication skills | □ | □ | □ | □ | ■ | ■紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  ■口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  ■自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演(Products/Creative Performance)  □其他(Others) | | 專業倫理及服務學習之能力 Professional ethics and service-learning ability | ■ | □ | □ | □ | □ | □紙筆測驗/會考(Test/Exam)  □作業練習(Assignments)  □口頭報告/口試(Presentation/Oral Exam)  □專題研究報告(書面)  (Research Report(printed on paper))  □實作/實驗(Practices/Experiments)  ■出席/課堂表現(Attendance/Performance)  □學習檔案評量(Portfolios Assessment)  □自我評量/同儕互評  (Self-Assessment/ Peer Assessment)  □作品/創作展演(Products/Creative Performance)  □其他(Others) | | | | |