



教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	海洋分析化學			學年/學期 Academic Year/Semester	113/2			
課程名稱(英文) Course Name in English	Marine Analytical Chemistry							
科目代碼 Course Code	MBE_57600	系級 Department & Year	碩士	開課單位 Course-Offering Department	海洋生物研究所			
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0					
授課教師 Instructor	/孟培傑							
先修課程 Prerequisite								

課程描述 Course Description

實作與理論並行，使學生熟悉海水的採集方式及分析方法並達成品保與品管之目標。

課程目標 Course Objectives

使學生熟悉海水的採集方式及分析方法並達成品保與品管之目標。

圖示說明 Illustration : ● 高度相關 Highly correlated ○ 中度相關 Moderately correlated

授課進度表 Teaching Schedule & Content

週次 Week	內容 Subject/Topics	備註 Remarks
1	1. Introduction ; Sampling techniques, Samples Preparation	
2	2. QA/QC : Accuracy & Precision ; Detection limits	
3	3. Temperature & Salinity	
4	4. Dissolved oxygen(Winkler titration & Redox potential methods) ; Solubility saturation & Apparent oxygen utilization(AOU)	
5	5. Biochemical oxygen demand(BOD)	
6	6. Chemical oxygen demand(COD)	
7	7. pH, Alkalinity & Total carbon dioxides	
8	8. Basic spectrophotometry	
9	期中考試週 Midterm Exam	

10	1. Introduction ; Sampling techniques, Samples Preparation 2. QA/QC : Accuracy & Precision ; Detection limits 3. Temperature & Salinity 4. Dissolved oxygen(Winkler titration & Redox potential methods) ; Solubility saturation & Apparent oxygen utilization(AOU) 5. Biochemical oxygen demand(BOD) 6. Chemical oxygen demand(COD) 7. pH, Alkalinity & Total carbon dioxides 8. Basic spectrophotometry 9. Determination of nitrite-N & nitrate-N 10. Determination of phosphate-P 11. Determination of silicate-Si 12. Principle of flow injection analysis (FIA) & Analysis of sulfate 13. Potosynthetic pigments (Fluorometry & Analysis of spectrophotometry) 14. Primary productivity
11	9. Determination of nitrite-N & nitrate-N
12	10. Determination of phosphate-P
13	11. Determination of silicate-Si
14	12. Principle of flow injection analysis (FIA) & Analysis of sulfate
15	13. Potosynthetic pigments (Fluorometry & Analysis of spectrophotometry)
16	14. Primary productivity
17	14. Heavy metals
18	期末考試週 Final Exam

教 學 策 略 Teaching Strategies

- 課堂講授 Lecture 分組討論 Group Discussion 參觀實習 Field Trip
 其他Miscellaneous:

教 學 創 新 自 評 Teaching Self-Evaluation

創新教學(Impressive Teaching)

- 問題導向學習(PBL) 團體合作學習(TBL) 解決導向學習(SBL)
 翻轉教室 Flipped Classroom 磨課師 Moocs

社會責任(Social Responsibility)

- 在地實踐Community Practice 產學合作 Industy-Academia Cooperation
跨域合作(Transdisciplinary Projects)
 跨界教學Transdisciplinary Teaching 跨院系教學Inter-collegiate Teaching
 業師合授 Courses Co-taught with Industry Practitioners

其它 other:

學期成績計算及多元評量方式 Grading & Assessments

配分項目 Items	配分比例 Percentage	多元評量方式 Assessments						
		測驗 會考	實作 觀察	口頭 發表	專題 研究	創作 展演	卷宗 評量	證照 檢定
平時成績 General Performance	20%							
期中考成績 Midterm Exam	20%							
期末考成績 Final Exam	20%							
作業成績 Homework and/or Assignments	30%							
其他 Miscellaneous (_____)	10%							

評量方式補充說明
Grading & Assessments Supplemental instructions

教科書與參考書目(書名、作者、書局、代理商、說明)
Textbook & Other References (Title, Author, Publisher, Agents, Remarks, etc.)

課程教材網址(含線上教學資訊,教師個人網址請列位於本校內之網址)
Teaching Aids & Teacher's Website (Including online teaching information.
Personal website can be listed here.)

其他補充說明 (Supplemental instructions)