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②國玄東華大學

教學計劃表 Syllabus

| 課程名稱(中文) Course Name in Chinese | 生態毒理學 | | | | 學年/學期 Academic Year/Se | 113/2 | | |
|------------------------------------|---------------|-------------------------------|--|---------------------------------------|---------------------------|-------|--|--|
| 課程名稱(英文) Course Name in English | Ecotoxicology | | | | | | | |
| 科目代碼 Course Code | MBE_54200 | 系級 Department 碩士 & Year | | 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) | | • | 2.0/2.0 | | | |
| 授課教師 Instructor | /陳德豪 | | | | | | | |
| 先修課程 Prerequisite | | | | | | | | |

課程描述 Course Description

讓學生認識生態毒理學的理論基礎及實際應用,瞭解環境毒物在環境中對各個生物系統階層的影響及可能之因應之 道。

課程目標 Course Objectives

生態毒理學是一個從生態學角度來研究天然或人為毒性物質在環境中的流佈及對生物毒性的一門跨領域科學。本課程 目標為讓學生認識生態毒理學的理論基礎及實際應用,瞭解環境毒物在環境中對各個生物系統階層的影響及可能之因 應之道。

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 | Introduction to Ecotoxicology | | | | | | |
| 2 | Major Environmental Contaminants | | | | | | |
| 3 | Uptake, Biotransformation, Detoxification, Elimination, and Accumulation | | | | | | |
| 4 | Uptake, Biotransformation, Detoxification, Elimination, and Accumulation | | | | | | |
| 5 | Factors Affecting Bioaccumulation | | | | | | |
| 6 | Bioaccumulation from Food and Trophic Transfer | | | | | | |
| 7 | Molecular Effects and Biomarkers | | | | | | |
| 8 | Molecular Effects and Biomarkers | | | | | | |
| 9 | 期中考試週 Midterm Exam | | | | | | |
| 10 | Cells, Tissues, and Organs | | | | | | |
| 11 | Cells, Tissues, and Organs | | | | | | |
| 12 | Sublethal Effects to Individuals | | | | | | |
| 13 | Sublethal Effects to Individuals | | | | | | |
| 14 | Acute and Chronic Lethal Effects to Individuals | | | | | | |
| 15 | Effects on Populations | | | | | | |

| 16 Ef | ffects on Communities and Ecosystems | | | | | | |
|---|--|--|--|--|--|--|--|
| 17 La | Landscape to Global Effects | | | | | | |
| 18 期 | 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(Inr | novative Teaching) | | | | | | |
| ✓ 問題導向學 | 學習(PBL) 團體合作學習(TBL) 解決導向學習(SBL) | | | | | | |
| 翻轉教室 | Flipped Classroom | | | | | | |
| 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 | 配分比例 Percentage | 多元評量方式 Assessments | | | | | | | |
| Items | | 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 | 其他 |
| 平時成績 General Performance | 10% | | | | | | | | |
| 期中考成績 Midterm Exam | 45% | | | | | | | | |
| 期末考成績 Final Exam | 45% | | | | | | | | |
| 作業成績 Homework and/or Assignments | | | | | | | | | |
| 其他 Miscellaneous | | | | | | | | | |

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.)

- 1. Newman M.C. 2015. Fundamentals of Ecotoxicology (4th edition). CRC Press.
- 2. 陳健民。 2013。環境毒物學 (第3版)。新文京開發出版有限公司。

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)