國立東華大學

教學計劃表 Syllabus

課程名稱(中文) Course Name in Chinese	魚類生態學			學年/學期 Academic Year/Semester	112/1
課程名稱(英文) Course Name in English	Fish Ecology				
科目代碼 Course Code	NRESM0460	系級 Department & Year	碩士	開課單位 Course-Offering Department	自然資源與環境學系
修別 Type	選修 Elective	學分數/時間 Credit(s)/Hour(s)	3.0/3.0		
授課教師 Instructor	/黃文彬				
先修課程 Prerequisite					

課程描述 Course Description

Understanding of fish ecology requires an awareness of the relationships between fishes and their environment. Fishes live in an aquatic world that is unfamiliar to human-being. Although we may make brief visits to the aquatic world using a snorkel, scuba or even more advanced diving equipment, we can never become a part of it. This course is designed for advanced students. It is assumed that the student will be familiar with the basic biology of fishes. This course covers the main themes of ecology, including habitat use, species interactions, migration, feeding, population dynamics, and reproduction in relation to the major habitats occupied by fishes. In addition, the course introduces applications of fish ecology, particularly the effects of human activities on the distribution and abundance of species of interest. At the end of this course, common statistical methods used in fish ecology are introduced, so that the student can apply to collect and analyze ecological data of fish for field researches.

課程目標 Course Objectives

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	9/11(Monday)
2	The environment, organisms, and relationships	9/18
3	Effects of abiotic environmental identities on distribution (I)	9/25
4	Effects of abiotic environmental identities on distribution (II)	10/2
5	National Day (Holiday)	10/9 (Holiday)
6	Biotic factors and the structure of fish communities	10/16
7	Migration, territoriality and shoaling in fishes	10/23
8	Feeding and growth (I)	10/30
9	Field trip [Liyu Lake, Aquatic Breeding Institute/ Hualien Ocean Park]	11/6 Mid-term
10	Feeding and growth (II)	11/13

11	Life-histories and population dynamics (I)	11/20
12	Life-histories and population dynamics (II)	11/27
13	Applied ecology of fishes (I)	12/4
14	NPFC-final report (I)	12/11
15	NPFC-final report (II)	12/18
16	Applied ecology of fishes (II)	12/25
17	New Year’s Day (Holiday)　Evaluation Week	1/1 Final-term
18	The week for alternative curriculum	1/8

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(Innovative 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	其他
平時成績 General Performance	30%								
期中考成績 Midterm Exam									
期末考成績 Final Exam	20%	✓							
作業成績 Homework and/or Assignments	50%								
其他 Miscellaneous (_____)									

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

Final Report: find 2-3 papers, according to the student’s talk topics, and write down the main paper findings related to the content that the student presents in the class in 3-4 pages.

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.)

Wootton, R. J. (1992) Fish Ecology. Chapman and Hall, New York. 212 pp.
Wootton, R. J. (1990) Ecology of Teleost Fishes. Chapman and Hall, New York. 404 pp.
Diana, J. M. (1995) Biology and Ecology of Fishes. Cooper Publishing Group LLC, Carmel, IN. 441 pp.
Underwood, A. J. (1997) Experiments in ecology: their logical design and interpretation using analysis of variance. Cambridge University Press, UK. 504 pp.
Montgomery, D. C. (1997) Design and analysis of experiments. John Wiley & Sons, USA. 704 pp.

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)