國立東華大學

課　綱　Course Outline

自然資源與環境學系學士班

中文課程名稱 Course Name in Chinese	水域生態學				
英文課程名稱 Course Name in English	Aquatic Ecology				
科目代碼 Course Code	NRES30180	班 別 Degree	學士班 Bachelor's		
修別 Type	學程 Program	學分數 Credit(s)	3.0	時 數 Hour(s)	3.0
先修課程 Prerequisite					

課程目標
Course Objectives

本課程將探討淡水域(溪流及湖沼等)化學因子及物理因子在水域生態系中之作用，水生生物之物種及特性，不同水域環境中上述各因子之交互作用等，並結合基礎生態觀念及環境相關的來認識水域生態系統。如各類型水域環境有那些重要因子會影響水質、認識棲息於上述水域環境中之代表性生物、瞭解基礎生態觀念及交互生態作用如何影響水生生物之分佈及豐度、不同水域生態系之差異性等。從而瞭解並其備水域相關研究之觀念及能力，進而具備水資源管理者之基礎能力。

系教育目標
Dept.'s Education Objectives

1	培養兼具國際視野與本土關懷的學生 To develop students who care about local issues and have an international perspective
2	培養具備自然科學與社會科學知識的人才 To educate students to have knowledge of both the natural and social sciences
3	培養具備環境倫理與人文素養的環境公民 To teach students to be environmental citizens (i.e., knowledgeable about environmental ethics and human issues)

	系專業能力 Basic Learning Outcomes	課程目標與系專業能力相關性 Correlation between Course Objectives and Dept.'s Education Objectives
A	具備自然科學與社會科學的基礎知識 To be knowledgeable of fundamental theories in the natural and social sciences.	●
B	具備觀察、理解、闡釋自然環境與人類社會互動及變遷關係的能力 To be able to observe, understand, and interpret the changing interactions of natural resources and human society.	●

C	具備多元資料收集策略、閱讀論文、撰寫環境報導及創意口頭報告的能力 To have the ability to collect data, understand scientific literature, and write and present environmentally related reports.	●
D	能終身學習、對環境維持熱情、關懷、並願意做出對在地環境獻身的承諾 To cultivate the values of lifelong learning, to maintain enthusiasm and concern for the environment, and to develop commitment to the local environment.	○
E	具備環境倫理觀、社會責任感與社會實踐力 To develop and implement environmental ethics and social responsibility.	○
F	具備獨立思考、溝通協調與團隊合作的能力 To think independently, to communicate effectively, and to cooperate with others as a team.	●
G	具備基本外國語文能力 The be able to communicate in a foreign language.	●

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

課程大綱
Course Outline

1.淡水化學
2.水域物理因子
3.水棲無脊椎動物
4.水中自營與異營作用
5.水中競爭作用
6.流域群聚結構
7.流域生態系有機物質
8.營養物質變動
9.淡水域人為干擾作用
10.特殊棲地

資源需求評估(師資專長之聘任、儀器設備的配合・・・等)
Resources Required(e.g. qualifications and expertise, instrument and equipment,etc.)

課程要求和教學方式之建議
Course Requirements and Suggested Teaching Methods

多媒體課程講解、校外實況與調查、專題報告及相關影片教學

其他
Miscellaneous

期末報告(50%)、平常作業(20%)、課前準備及上課時表現(20%)、曠課情形(10%)
參考資料：

Allan, J.D. 1996. Stream ecology. Chapman & Hall publications, London, 388pp.
Giller, P.S., A.G. Hildrew and D.G. Raffaelli. 1994. Aquatic ecology: scale, pattern and process. Blackwell scientific publications, London, 649pp.
McCafferty, W.P. 1981. Aquatic Entomology. Jones and Bartlett Publishers. MA. 448pp.
Merritt, R.W. and K.W. Cummins. 1996. An introduction to the aquatic insects of North
America. Kendall/Hunt Publishing Co. Iowa. 862pp.
Resh. V.H. and D.M. Rosenberg. 1984. The ecology of aquatic insects. Praeger Publishers. NY. 625pp.
Thorp, J.H. 2002. Freshwater ecology. Academic press, CA. 569pp.

規劃負責老師：

單位主管：

系課程委員會審議通過日期：