中臺科技大學課程介紹
Course Syllabus

附件 4

開課學期	110-1	部別	■日間部 ■進修部
系科	通識教育中心	學制	大學部
課程名稱	探索自然	授課教師	
課程類別	選修	開課班級	博學涵養□人文 ■自然
學分數	2	授課時間	
科目代碼		辦公地點	1220/1224
開課代號		請益時間	
電子信箱	sctsai@ctust.edu.tw		

課程描述
Course Description

本課程除以單向的知識傳授外，教學內容也納入相關的期刊報導，以及生活中與生物相關的報導，增進同學對周遭的生物環境更加留意。主要授課內容包括:生物觀察指引、向自然學習美、自然法則、及大自然與人類的關係等四大主題。

課程目標
Course Objectives

認知

能認識太陽系形成與地球變動、生物與環境之關係、生物與生物間之關係及不同生物之生態地位與重要性

情意

能喜歡進而愛護及保護大自然與所有的生物

技能

1、 能認識科學方法與科學精神的基本論述及主要內涵。
2、 能運用多種思考方法，思索事務變化的因果和形式，探討事物間邏輯性關聯。
3、 能依據邏輯推理原則，進行批判性思考。
4、 能運用邏輯推理、批判性思辨能力，運用於生活與工作之中。

一般能力/專業能力
General/Core Learning Outcomes

一般能力

一、人文與思維

1、能瞭解人文、社會科學的基本概念與理論。
2、能基於人文、社會學的基礎認識，將此知識解釋人文社會的現象，並舉例說明。
3、能在生活中運用人文、社會學的知識，思辨、分析、批判探討人類與社會現象。
4、能覺知人文涵養教育所引發的心靈感動，欣賞、體悟多元文化與人文內涵之美。

二、內省與關懷

1、能進行內觀反省，了解自己的優、缺點，並據此作出適當的行為。
2、能藉由內觀反省，了解周遭人的感受，對群己、環境主動表現出關懷。
3、能對群己、環境的關懷產生價值感，成為態度。
4、能具有持久且一致主動關懷環境、群己，推己及人的品格。

三、創意與表達

1、能有效運用口頭語言、書面文書清楚表達自己的想法和他人的意見。

2、能運用適當工具與方式表述資料，且表述的內容論述與結構皆完整。

3、能有創意性的表述，並清楚傳達自己的想法。

4、表述的內容具有獨創見解，並與接收者可以進行有效的溝通與論辯。

四、科學與邏輯

1、能認識科學方法與科學精神的基本論述及主要內涵。

2、能運用多種思考方法，思索事務變化的因果和形式，探討事物間邏輯性關聯。

3、能依據邏輯推理原則，進行批判性思考。

4、能運用邏輯推理、批判性思辨能力，運用於生活與工作之中。

評量標準
Assessment standards

■期中考試 __25__ %	■ 期中報告 __10__ %	■ 平時考 __20__ %
■ 期末考試 __25__ %	□ 期末報告 _____ %	□ 上課參與度 _10_ %
■ 出席 __10__ %	□ 口頭報告 _____ %	□ 其它 _____ %

教科書（書名、作者、出版社、備註）
Textbook （Title, Author, Publisher, Remarks ）

書名 Title	書名 Title	書名 Title	書名 Title

參考書目（書名、作者、出版社、期刊、備註）
Reference Materials （Title, Author, Publisher/Journal, Remarks ）

書名 Title	書名 Title	書名 Title	書名 Title
特有生物研究保育中心資訊	特有生物研究保育中心資訊	特有生物研究保育中心資訊	特有生物研究保育中心資訊
自然科學博物館 網路教材資源	自然科學博物館網路教材資源	自然科學博物館 網路教材資源	自然科學博物館 網路教材資源
情色昆蟲記	情色昆蟲記	情色昆蟲記	情色昆蟲記
台灣生物多樣性資訊網 TaiBNET	台灣生物多樣性資訊網 TaiBNET	台灣生物多樣性資訊網 TaiBNET	台灣生物多樣性資訊網 TaiBNET

授課進度
Course Schedule

週次 Week	科目主題 Course Subject	教學方式 Teaching Method	授課進度 Course Schedule
週次 Week	科目主題 Course Subject	教學方式 Teaching Method	授課進度 Course Schedule
1	課程介紹,教室規則,評分標準說明	課程進度 評分標準簡介	分組
2	古人的觀天智慧	PPT、影片 FILM	分組
3	太陽系介紹	PPT、影片 FILM	分組
4	太陽系介紹 地殼運動與地震	PPT、影片 FILM	ONLINE TEST
5	地殼運動與地震	PPT、影片 FILM	
6	社區服務週 大坑步道探訪	PPT、影片 FILM	ONLINE TEST
7	生命的起源與進化	PPT、影片 FILM	

8	生物觀察報告	PPT、影片 FILM	ONLINE TEST
9	期中考試	期中考試	期中考試
10	食物鏈的基礎	PPT、影片 FILM	
11	腔腸動物	PPT、影片 FILM	ONLINE TEST
12	腔腸動物棘皮動物	PPT、影片 FILM	
13	棘皮動物	PPT、影片 FILM	ONLINE TEST
14	軟體動物分類與行為	PPT、影片 FILM	
15	魚類行為	PPT、影片 FILM	ONLINE TEST
16	水生哺乳類分類與行為	PPT、影片 FILM	
17	動物的工具應用	PPT、影片 FILM	ONLINE TEST
18	期末考試	期末考試	期末考試

科目主題對應一般能力/專業能力之涵蓋率（填寫說明）

Coverage Rate of the Course Subject Correspond to the Ordinary Ability and Professional Ability

科目主題 (最多十個主題)	能力指標涵蓋率%									
	專業能力%						一般能力%			
	1	2	3	4	5		1	2	3	4
生命的起源與進化	/	/	/	/	/		50	100	25	100
食物鏈	/	/	/	/	/		50	100	25	100
生物的生存考驗	/	/	/	/	/		50	100	25	100
生物觀察分組報告							100	100	100	100
	/	/	/	/	/					

專業能力說明

通識課程以訓練一般能力為主軸

一般能力說明

1.人文與思維

2.內省與關懷

3.創意與表達

4.科學與邏輯

Central Taiwan University of Science and Technology

Course Syllabus

Academic Year/Semester	110/1	Day/Night School	
Department	General Education Center	Program	University Department
Course Title	Discovery of nature	Instructor	Tsai Shu chuan
Course type	Elective	Class	Knowledge conservation
Credit Hour	2	Hour(s)	2
Course Code		Office	1220/1224
Subject Code		Advisory Time	

Course Description

The course is divided into one-way knowledge transfer, the content of the course is also included in the relevant journal reports, and life-related bio-related reports to enhance the students around the biological environment more attention. The main courses include: biological observation guidelines, the natural beauty of learning, natural law, and the relationship between nature and human four major themes.

Course Objectives

Cognition
To understand the relationship between the formation of the solar system and the earth, the relationship between organisms and the environment, the relationship between organisms and organisms and the ecological status and importance of different organisms

affection
Can love to protect and protect nature and all creatures

Skills
1, to understand the scientific methods and the spirit of the basic scientific exposition and the main connotation.
2, can use a variety of thinking methods, thinking about the cause and effect of changes in the form of things to explore the logical correlation between.
3, according to the principle of logical reasoning, critical thinking.
4, can use logical reasoning, critical thinking ability, used in life and work.

General/Core Learning Outcomes

Genera Learning Outcomes

I. Humanism and thinking
1. Can comprehend the basic concepts and theories of humanistic and social sciences.
2. Can use the knowledge acquired from humanistic and social sciences to explain and illustrate humanistic and social phenomena.
3. Can use the knowledge of humanistic and social sciences to discern, analyze, and criticize human and social phenomena in daily life.
4. Can perceive the emotional blast triggered from humanistic nurture and appreciate the beauty of multiple cultures and humanistic spirit.

II. Reflection and care

1. Can reflect upon oneself, know one's good and bad qualities and thereby act accordingly.
2. Can empathize with people around them through one's reflection, and show their care towards others and the environment.
3. Can create a sense of value and thereby form a positive attitude from their care towards others and the environment.
4. Can become empathetic towards others and develop a virtuous character that cares for others and their environment in an active manner.

III. Creativity and expression

1. Can express oneself or others' opinions in a clear and effective manner, through oral or written presentation.
2. Can use proper tools and methods to verbalize data and produce a logical and organized content.
3. Can convey one's ideas in an original and lucid manner.
4. Can produce insightful thoughts and make effective communication or arguments with the audience.

IV. Science and logic

1. Can comprehend the basic discourse and major contents of scientific spirit and method.
2. Can exercise multiple thinking methods to ponder on the cause and format of issues and explore their correlations.
3. Can make critical thinking based on logical principles.
4. Can apply one's logical rationalization and critical thinking to their everyday life and work.

Assessment standards

■ Participation in class 10%

■ Attendance 10% ■ midterm report 10% ■ Unit test 20%

■ midterm exam 25% ■ Finalterm exam 25%

Textbook （Title, Author, Publisher, Remarks ）

Title	Author	Publisher	Remarks

Reference Materials （Title, Author, Publisher/Journal, Remarks ）

Title	Author	Publisher/ Journal	Remarks
Unique biological research and conservation center Information (INTERNET)	Endemic Species Research Institute		
Natural Science Museum Internet Teaching Material	Natural Science Museum		
Erotic insects in mind	Zhu Yaoyi	Shang Zhou	
Taiwan Biodiversity Information Network TaiBNET	ACADEMIA SINICA		

Course Schedule

Week	Course Subject	Teaching Method	Course Schedule
1	Course introduction, classroom rules, rating criteria	PPT / film	Grouping

2	The wisdom of the ancients	PPT / film	Grouping
3	Introduction to the solar system	PPT / film	Grouping
4	Introduction to the Solar System Crustal Movement and Earthquake	PPT / film	Group oral report task assignment
5	Crustal Movement and Earthquake The Origin and Evolution of Life	PPT / film	Unit test ONLINE TEST
6	Community Service Week Visit to the DaKeng Hiking Trails	PPT / film	**Visit to the** DaKeng Hiking Trails
7	The origin and evolution of life	PPT / film	
8	Creature observation oral report	midterm report	Unit test ONLINE TEST
9	Midterm exam	Midterm exam	Midterm exam
10	The basis of the food chain	PPT / film	Unit test ONLINE TEST
11	Coelenterate	PPT / film	Unit test ONLINE TEST
12	Echinococcal echinoderms	PPT / film	Unit test ONLINE TEST
13	Echinoderm	PPT / film	Unit test ONLINE TEST
14	Mollusk classification and behavior	PPT / film	Unit test ONLINE TEST
15	Fish behavior	PPT / film	Unit test ONLINE TEST
16	Classification and behavior of aquatic mammals	PPT / film	Unit test ONLINE TEST
17	Animal tool application	PPT / film	Group oral report
18	Final exam	Final exam	Final exam

Coverage Rate of the Course Subject Correspond to the Ordinary Ability and Professional Ability

Course Subject (最多十個主題)	Learning Outcomes ％									
	Core ％						General ％			
	1	2	3	4	5		1	2	3	4
Food chain	/	/	/	/	/		50	100	25	100
The Trials of Life	/	/	/	/	/		50	100	25	100
Biological observation Assignment	/	/	/	/	/		100	100	100	100
Midterm report	/	/	/	/	/		100	100	100	100
	/	/	/	/	/					
	/	/	/	/	/					

ore Learning Outcomes

General Learning Outcomes

1. Humanities and Cogitation
2. Introspection and Solicitude
3. Creativity and Utterance
4. Science and Logic