Course number	U-LAS14 10012 LE69		

Course title (and course title in English)	Fundamentals of Organismal and Population Biology-E2 Fundamentals of Organismal and Population Biology-E2	Instructor's name, job title, and department of affiliation	Graduate School of Science Associate Professor,BARNETT, Craig Antony

Group	Natural Sciences	Field(Classification)	Biology(Introduction)		
Language of instruction	English	Old group	Group B	Number of credits	2
Number of weekly time blocks	1	Class style	Lecture (Face-to-face course)	Year/semesters	2025 First semester
Days and periods	Mon.2	Target year	Mainly 1st & 2nd year students	Eligible students	For all majors

[Overview and purpose of the course]

In the history of the earth (4.6 billion years), life has diversified from simple unicellular organisms into a myriad of different organisms including human beings since it appeared 3.8 billion years ago. This course will explain how living creatures have diversified from these simple origins. We will also examine the biology of individual organisms and explain the formation of ecological communities and ecosystems. This class discusses basic principles of biology and is suitable for students who have not previously studied biology.

[Course objectives]

An introductory course that mainly deals the evolution of biological diversity, the biology of individuals and groups. Having completed the course, students will have a basic understanding of the evolution of biological diversity and the mechanisms by which diverse species coexist.

[Course schedule and contents)]

The following subjects will be held for 2-5 weeks each. The items in [] are the main items.
(1) The history of life
We will systematically examine the origin and evolutionary history of life on Earth, and the systematic evolution and diversification of organisms. The latest knowledge about the classification system is also introduced. [The origin of life, prokaryotes, eukaryotes, intracellular symbiosis].
(2) Animal behavior and physiology
We will examine the diverse adaptive animal behavior patterns and physiological characteristics of organisms in temporally and spatially variable environments. [Adaptation, sexual selection, homology, the evolution of altruistic behavior, homeothermic animals, variable temperature animals, temperature acclimation, and homeostasis].
(3) Ecology of groups and communities
Ecology and evolution of organisms the adaptation of organisms to the environment is explained based on genetic and evolutionary mechanisms. We will explore the ecology of populations, communities, the structure and function of ecosystems, ecological niches, and the basis and function of biodiversity. [Genetic systems, evolutionary mechanisms, natural selection, adaptation, life history, individual group dynamics, interspecies relationship, biological communities, food webs, biome, ecosystem function, biodiversity].
(4) Human characteristics and evolution
Explain the biological characteristics of primates (including humans) using comparisons of their forms, behaviors, and ecology. [Evolutionary history, distribution, tree adaptation, grasping ability, vision, food habits, brain size, sex differences, social structure, bipedalism, canine retraction, tool use, division of labor,

Fundamentals of Organismal and Population Biology-E2(2)

and the genetic diversity in modern people].

[Course requirements]

It is not necessary to have completed high school biology, but it would be an advantage.

[Evaluation methods and policy]

The course will be assessed by end of semester test.

[Textbooks]

No textbook

[Study outside of class (preparation and review)]

To achieve the course goals, students should review the course materials and the recommended readings after each class. The time necessary for review should be in the range of 2-3 hours per week. If you have any questions, please ask the instructor.

[Other information (office hours, etc.)]

No formal office hours, the instructor is available by appointment to meet with students.