科目ナンバリング	U-LAS14 20070 LE68						
授業科目名<英訳>	Introduction to Ecology and Evolution-E2 Introduction to Ecology and Evolution-E2			担当者所属職名・氏名	理学研究科　准教授　BARNETT, Craig Antony		
群	自然科学科目群			分野(分類)	生物学(各論)	使用言語	英語
旧群	B群	単位数	2単位	週コマ数	1コマ	授業形態	講義（対面授業科目）
開講年度・開講期	2025・後期	曜時限	月2	配当学年	主として1・2回生	対象学生	全学向

[授業の概要・目的]

Evolution deals with the processes which led to the diversity of species and the relationships among them while ecology attempts to understand this species diversity and the interactions among them. These two aspects of biology are closely related. In this course we will examine how evolution and ecology interact with one another in order to understand biological diversity. We will also examine some more applied aspects of ecology such as the human impacts on ecosystems (e.g., climate change and conservation).

[到達目標]

This course deals with ecology and evolution and how these topics interact in order to produce biodiversity. We will deal with key problems such as the evolution of life-histories, the evolution of sex through to speciation, extinction, and macroecology. We will also examine some more applied aspects of ecology and evolution such as examining human impacts on species, ecological communities, and the ecosystem.

[授業計画と内容]

The following subjects will be held for 3-5 weeks each.
(1) Adaptation and fitness
We will examine adaptation and the process that leads to adaptation in organisms and how we practically measure fitness in animals. For example, we will examine topics such as the evolution of life histories and how these are optimized to different ecological conditions and the evolution of sexual reproduction and its advantages over asexual reproduction.
(2) Ecology
We will examine what makes some kinds of organisms species-rich and other kinds of organisms species poor. We will also emphasize the importance on ecological interactions in ecology and how they may influence the ecology of and evolution of other species. We will also examine some relationships between biodiversity and different geographic regions (such as latitude) and island biogeography. This will allow us to better understand questions such as why there are more species in the tropics and why bigger islands have more species present on them than small islands. We will also examine how ecological factors may influence speciation.
(3) Evolution
We will closely examine of the birth of species (speciation), multiplication of species (radiation), and death of species (extinction) and the ecological factors that influence these processes. We will also examine how species diversity has changed over time and why some groups of organisms seem to be more successful than other groups.
(4) Human impacts
We will examine the impacts that humans are exerting on the ecology and evolution of individual species, communities, as well as global issues related to humans impacts on the ecosystem. We will examine a number of examples that demonstrate human impacts on ecology and evolution including the effects of human harvesting on organisms (e.g., trophy hunting, commercial exploitation), ecology in cities, and the effects of global climate change on the ecology and conservation of organisms.

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Introduction to Ecology and Evolution-E2(2)

[履修要件]

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

[成績評価の方法・観点]

Assessment will be made on the basis of an end of semester test.

[教科書]

使用しない

Handouts to be given in class.

[参考書等]

（参考書）

Mayhew, P. 『Discovering evolutionary ecology: bringing together ecology and evolution.』（Oxford University Press）ISBN:978-0-19-852528-8（2006）

[授業外学修（予習・復習）等]

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.

[その他（オフィスアワー等）]

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

[主要授業科目（学部・学科名）]

理学部