Module Code	21349057	Course Term
Course Subject Name	**Population Biology and Ecology**	Autumn The 1st Semester
Course Tutor	**Yukiko Ogino**	
Credit	2	Taught Day
Schools	School of Agriculture	THU-3
Taught Year	The 2nd year	
Campus	Ito campus	
Subject Area	Lecture	
Course Subject Classification	Common Basic Subjects	Thursday, 3rd period (13:00-14:30)
Course Requirements		
Course Requirement (Pre-requisite)	None	

Course Outline

The course provides an introduction to the fundamental concepts of ecological developmental biology.

key words

Eco-Evo-Devo, Development, Polyphenisms, Signal transduction, Epigenetics, Endocrine disruptors, Phenotypic plasticity

Study Objectives (General)

The students learn how the environmental signals are involved in the phenotypic and molecular changes in development that affect population ecology and biodiversity.

Study Objectives (Specific) The course aims to achieve the following:

The course aim is to achieve the knowledge on the following aspects,

A. Students recognize that the variety of environmental signals produce the phenotypes of organisms

B. Students learn molecuar mechanisms of how environmental signals regulate developmental processes.

C. Students learn various ways in which exposure to chemicals and pathogens can alter development and cause abnormal phenotypes.

D. Students learn how the phenotypic changes of organisms influence their population dynamics

Course Plan

Tentative Weekly Schedule:

1-2. Environmental signals as agents in producing phenotypes

3. Developmental symbiosis

4. Embyonic defenses, developmental robustness

5. Mechanisms of the actions of chemical teratogens

6. Hormonal functions and endocrine system

7-8. Mechanisms of the actions of endocrine disruptors

9. Developmental origins of health and disease

10. Developmental Models of Cancer and Aging

11. Human beings and selection pressure

12. Evolution through developmental regulatory genes

13. Evolutionary concept of environmental regulation of evolution

14. Phenotypic plasticity driven adaptation

15. Summary of "Eco-Evo-Devo" concept

Course Approaches	Lecture
Textbooks	Gilbert and Epel (2009), Ecological Developmental Biology, Integrating Epigenetics, Medicine, and Evolution
Reference Books	
Study consultation (office hour)	Office: room 579, West5, Ito Campus Office Hours: by appointment Email: ogino@agr.kyushu-u.ac.jp Phone: 092-802-4766
Exams/Results Evaluation Method	1. Attendance, in-class activities and short quizes (50%) 2. Report (50%)
Others	