

Module Code	21349045	Course Term
Course Subject Name	Bioresource and Bioenvironment Experiments and Practice 2	Autumn Semester
Course Tutor	Yukiko Ogino	
Credit	1	Taught Day
Schools	School of Agriculture	FRI-3,4
Taught Year	The 3rd year	
Campus	Ito campus	
Subject Area	Experimental	
Course Subject Classification	Common basic subject	
Course Requirements	Required Course	Friday, 3rd and 4th priod (13:00-16:20)
Course Requirement (Pre-requisite)	Basic knowledge in molecular biology techniques	
Course Outline		
Molecular biology experiments related to bioresource and bioenvironment will be done in this course. Student will learn the basic skills of molecular biology and how to handle it.		
key words		
Environmental signal, gene expression, organogenesis, gene cloning		
Study Objectives (General)		
Gain the basic biological laboratory techniques and learn how extracellular (environmental) signals have influences on the development and organogenesis.		
Study Objectives (Specific)		
Specific Goals: Students can learn the following things, Good laboratory practice in molecular biology experiments related to bioresources and bioenvironment. Basic analytical methods Handling of basic analytical instruments Handling of molecular biology data and interpreting them. Effect of environmental signals on the development and organogenesis		
Course Plan		
Tentative weekly schedule: 1. Introduction and orientation to molecular biology experiments 2-6. Experiment 1 : Morphology and gene expression analyses response to the hormonal treatment 2: Morphological analysis using the microscope, RNA extraction from medaka fin 3:Quality check of RNA 4: Reverse transcription (cDNA synthesis) 5: PCR 6:DNA electrophoresis, Discussion 7-12. Experiment 2 : Molecular cloning of DNA 7: Preparation of LB/Amp Plate 8: Extraction of specific DNA from agarose gels 9: DNA ligation into plasmid vector, Bacterial transformation 10: Picking colonies, Preparation of solutions 11: Isolation of plasmid DNA from bacteria 12: Restriction enzyme digestion, DNA electrophoresis, Discussion 13-15. Experiment 3 : Change of body coloration of medaka response to environmental signals 13: Microscope observation of medaka pigment cells response to environmental signals 14: Microscope observation of medaka pigment cells response to physiological signals 15: Discussion, Summary		
	experiments and lectures	
Textbooks	All learning materials will be provided by the course tutor.	
Reference Books		
Study consultation (office hour)	Office: Office: Room 579 Bldg. WEST-5, Faculty of Agriculture, Kyushu University Ito Campus Office Hours: 9:00 - 18: 00, Email: ogino@agr.kyushu-u.ac.jp Phone: 092-802-4766	
Exams/Results	1. Attendance and Laboratory Performance 60%	
Evaluation Method	2. Reports and Exams 40%	
Others	A minimum of 80% attendance is mandatory, i.e. students whose absence is higher than 3 out of the 15 classes will not be eligible for the credits of the course. Attendance will be monitored.	