

Module Code	19349032	Course Term
Course Subject Name	Molecular Biology	<h1>Spring</h1> <h2>The 6th Semester</h2>
Course Tutor	Ken Matsuoka, Yoshizumi Ishino, Takahiro Nakamura, Akiko Maruyama, Yoshimitsu Kakuta, Taizo Hanai	
Credit	2	Taught Day
Schools	School of Agriculture	<h1>THU-2</h1>
Taught Year	The 3rd year	
Campus	Ito campus	Thursday, 2nd period (10:30-12:00)
Subject Area	Lecture	
Course Subject Classification	Specialized Subjects	
Course Requirements		
Course Requirement (Pre-requisite)		
Course Outline		
Outline of molecular biology and its application will be lectured.		
key words		
DNA, RNA, Protein, Signal, Organelle, Structure, Engineering		
Study Objectives (General)		
Molecular biology and its application.		
Study Objectives (Specific) The course aims to achieve the following:		
Understand the outline of the following topics: DNA replication, transcription and its regulation, RNA processing and post-transcriptional regulation, translation and post-translational protein processing, intracellular protein transport, signal transduction, structural biology and molecular bioengineering.		
Course Plan		
1. Introduction and focus of this lecture series (Matsuoka) 2, 3 DNA replication (Ishino) 4, 5 Transcription and transcriptional regulation (Maruyama) 6, 7 RNA processing and post-transcriptional regulation (Nakamura) 8, 9 Translation, post-translational protein modification, intracellular protein trafficking (Matsuoka) 10, 11 Signal transduction (Matsuoka) 12, 13 Structural biology (Kakuta) 14, 15 Molecular bioengineering (Hanai)		
Course Approaches		
Textbooks	Essential Cell Biology, 5th ed.	
Reference Books	Molecular Biology of the Cell 4th ed. and/or indicated by teacher	
Study consultation (office hour)	After lecture.	
Exams/Results Evaluation Method	Paper examination (70%) and attendance to the lecture (30%).	
Others	If two or more students are not in the classroom during the first 10 minutes of the first day, this lecture will not be held this year. If there is one student of the 3rd year, the class will be held in the next year if the student attends the classroom in the first 10 minutes of the first day of the following year even if that student is the sole one.	