

Basic information

Category	Specialized education	Credit	2
Subject	Genetics (Evolutionary Genetics)		

Detailed information

Lecture plan / Theme	This lecture explains the fundamentals of the population genetics and evolutionary genetics which focus on the genetic mechanism of an organic evolution.
Course Description / Objectives	The evolution of organisms is interpreted as the Changes in frequencies of newly created genes by mutation via natural selection, genetic drift, etc. In this lecture, the students learn about various mechanisms of creating and changing genetic variations in natural populations.
Overview of Each Class	Overview of each class is the following <ol style="list-style-type: none"> 1. Gene, Genetic Code, and Mutation 2. Rate and Pattern of Nucleotide and Amino Acid Substitutions 3. Neutral Evolution and Evolution by Natural Selection 4. Molecular Clock 5. Molecular Phylogeny 6. Evolution of Gene and Organisms 7. Estimation of Ancestral Sequences 8. Conclusion and Midterm Exam 9. Genetic Variation in Population 10. Population Size and Genetic Divergence between Populations 11. Detection of Natural Selection 1 12. Detection of Natural Selection 2 13. Genetics of Quantitative Trait 14. Genetics Mechanism of Speciation 15. Conclusion
Text Book / Reference Books	Handouts will be provided.
Assessment of Achievement	(1)Participation (2)Examinations
Requirements for Students	The completion of “General Genetics 1” and “General Genetics 2” is recommended.
Remarks	