

Syllabus [2025Year 2 Term]

Course Information

Course Title	General Biology	Credits	3
Course Code	559410-1	Required/Elective (For Undergraduate Courses)	Mandatory Major
Department or Major	Department of Bio and Material Engineering	Language	English
Methods of Teaching		Lecture Room	수2,3,4/ 금2,3,4(국제608)
Time Allotment	Lecture(3) Experiments(0) Trainging & Practice(0) Performance(0) Designing & Planning(0)	Cyber Lectures	
Course Type	offline		
Cyber Lectures Preview			

Lecturer

Lecturer	Name	Hong Dawon	Rank	Research Professor	Final Academic Degree	이학박사
	Department & college	Medical Consilience Engineering		Office		
	Office Phone Number	—		e-mail	dawon0731@nate.com	
	Field of Interest					

Course Summary

Course Description	Understand fundamental concepts in biology including cell structure, genetics, evolution, and ecology. Explore contemporary topics in biology such as gene editing, vaccines, and environmental change.
Description Related Courses	Cell biology, Molecular biology, and Genetics
Course Goals	폭넓은 기초 지식을 바탕으로 다양한 전문 분야의 지식을 융합적으로 활용할 수 있다.
Projected Results	<ul style="list-style-type: none">• Explain the basic structure and function of living organisms.• Understand and describe energy metabolism and the flow of genetic information.• Demonstrate understanding of biological diversity and evolutionary principles.

	<ul style="list-style-type: none"> Describe ecological interactions and environmental influences on life. Apply scientific reasoning to analyze biological questions and interpret current issues in life science.
Percentage of the original language classes (%)	100%
Cyber Lectures Preview	

Syllabus

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
1	Orientation & Introduction to Biology	Understand what biology is and describe characteristics of life and the scientific method.	강의,	
2	chemical basis of life	Understand atoms, molecules, and chemical bonds in biological systems.	강의,	
3	Biomolecules	Explain the structure and function of carbohydrates, proteins, lipids, and nucleic acids.	강의,	
4	Cell structure and function	Distinguish between prokaryotic and eukaryotic cells and understand organelle functions.		
5	Cell membrane and transport	Understand membrane structure and mechanisms of substance transport across membranes.	강의,	
6	Enzymes and metabolism	Explain how enzymes work and understand the basics of biochemical reactions.	강의,	
7	Cellular respiration and photosynthesis	Describe how ATP is produced in cells and the processes of respiration and photosynthesis.	강의,	
8	Midterm exam	Assess understanding of material covered in Weeks 1-7.	강의,	
9	Cell division	Understand mitosis and meiosis and co	강의,	

Times	Lecture Topic	Lecture Goals	Lecture Methods	Assignments
		compare their purposes and mechanisms.		
10	Genetics I: Mendelian genetics	Understand Mendel's laws and basic inheritance patterns.	강의,	
11	Genetics II: Molecular genetics	Describe DNA structure, replication, transcription, and translation.	강의,	
12	Evolution	Understand the mechanisms of evolution including natural selection and speciation.	강의,	
13	Biodiversity and classification	Understand biological diversity and the classification of living organisms.	강의,	
14	Current topics of biology	Discuss gene editing, mRNA vaccines, and other current developments in biology.	강의, 토의토론수업,	Report submission
15	Final exam	Evaluate knowledge of full course content.		

Methods of Grading

sequence	Description	Percentage	Details
1	Mid-term Exam	35%	
2	Final-exam	35%	
3	Pop Quizzes	0%	
4	Assignments	20%	
5	Reports	0%	
6	Presentations & Discussions	0%	
7	Attendance	10%	
8		0%	
9	Others	0%	
All		100%	

Core of Value

핵심가치	전공역량	역량정의	역량구분	값(%)
혁신 (Discovery)	창의적문제해결 (Creative problem-solving)	주어진 상황과 문제를 창의적으로 해결할 수 있는 능력		0%
혁신 (Discovery)	도전 (Challenging)	전공 지식을 새로운 분야와 융합하고 아우를 수 있는 능력		0%
혁신 (Discovery)	지식융합 (Knowledge convergence)	새로운 분야를 개척하거나 도전적으로 임할 수 있는 능력		0%
헌신 (Dedication)	세계시민 (Universal value)	세계 공동체 구성원으로 전공자로서 국제적 이슈에 대응할 수 있는 능력		0%
헌신 (Dedication)	상호협력 (Cooperation)	공동의 목적 달성을 위해 타인과 상호협력을 할 수 있는 능력		0%
헌신 (Dedication)	공동체 (Sense of community)	공동체의 구성원으로서 필요한 태도와 윤리의식을 가질 수 있는 능력		0%
능동 (self-Determination)	자기주도 (Self-Managing)	주어진 상황과 문제를 주도적이고 능동적으로 해결할 수 있는 능력	주역량	50%
능동 (self-Determination)	지식활용 (Knowledge application)	주어진 상황과 문제에 대해 논리적으로 파악하고 분석할 수 있는 능력		0%
능동 (self-Determination)	논리적사고 (Logical thinking)	전공관련 지식을 필요에 따라 다양하게 적용하고 활용할 수 있는 능력	부역량	30%
능동 (self-Determination)	의사소통 (Articulation)	대화를 통해 다양한 의견을 조율하고 합의를 이끌어 낼 수 있는 능력	부역량	20%

Textbook(s) & References

Description	Title	Author	Publisher
Required Textbook	Biology: A Global Approach, Global Edition	Campbell	Pearson

Memo

