

# 수업계획서

2022학년도 제 2학기

경기대학교

교과목명	학수 코드	이수 구분	학 점	시 수	학 년	과목 번호	요일 및 강의시간	담당교수	E-mail 및 연락처
Fundamental Sciences	X	교양	3	1		X	Wednesday 2:00-3:00	Dr. Maria Veronica Fontanilla	

### 교과목해설

Fundamental Sciences deals with the study of life, the social entity and the environmental aspects of life. It provides solutions to individual, societal and environmental problems involving general health standards, preservation of natural resources and maintenance of biological principles and of living organisms. The course does not only deal with learning science concepts but involves critical thinking and analysis to explain the processes and phenomena associated with daily life.

### 핵심역량

The communication skills, collaboration capabilities, citizenship, expertise, as well as the creative and fusion capabilities will be greatly enhanced.

### 강좌목표

1. Provide a better understanding of the nature of life, the social and environmental aspects as basis for further scientific study or investigation.
2. Aims to equip the students with a thorough level of awareness and understanding of the various scientific concepts and how they can be applied to improve the quality of life.

### 강의방법

- 강의형태 : 이론중심 ( / )    이론과 실습중심 ( )    실험/실습중심 ( )
- 수업방식 : 강의식 ( / )    세미나식 ( )    토론식 ( / )    질의/응답 ( )    Team Teaching ( )  
              워크숍 ( )    발표 ( )    실험/실습 ( )    실기 ( )    이러닝 ( )    기타 ( )
- 교육용 기자재 : OHP ( )    Slide ( / )    Video ( )    LDP ( )    Audio ( / )    컴퓨터 ( )  
                      모형물 ( )    유인물 ( )    기타 ( )

### 강좌내용

주	교수내용	방법	관련자료	과제물
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1	<p>Introduction</p> <p>Major branches of Science will be discussed to familiarize students with the different disciplines, particularly the Biological, Social and Environmental Sciences.</p>	Lecture-discussion		
2	<p>The Process of Science.</p> <p>The processes of Science and the characteristics and levels of organization among living organisms as it establishes the very highly complex structure of life, will be conversed</p>	Lecture-discussion		
3	<p>The Cell</p> <p>The structure and functions of cell and the basic cytological foundation of life, knowledge on the parts and functions of cells that lays the foundation of cytology, as it relates to the importance of cellular activities to life will be taken into account.</p>	Lecture-discussion		
4	<p>Genetic Basis of Life: Mendelian Genetics 1</p> <p>Cell reproduction, solving basic Mendelian genetics, as well as the understanding of human genetic disorders are integrated in this topic. Simple hybrid crossing between characteristics of offspring is also introduced.</p>	Lecture-discussion		
5	<p>Genetic Basis of Life: Mendelian Genetics 2</p> <p>Understanding how offspring inherits characteristics as well as how many of these characteristics come from either parents or separate using simple crossing formula like the Punnett square are included. Solving genetic problems and predicting outcomes from possible mating is also a part of the discussion</p>	Lecture-discussion		
6	<p>Blood Genetics</p> <p>Blood genetics in which blood types as well as possible blood types of children are determined. Studying the structure of DNA provides a clearer understanding of how characteristics that pass from parents to offspring, mutation and abnormalities exist among organisms</p>	Lecture-discussion		
7	<p>Origin of Life: Charles Darwin and the Process of Evolution</p> <p>How life originated from the chemical and biological foundations and exists as a product of both physical and chemical phenomena, as well as getting to know Charles Darwin and the process of evolution, providing insights on how living organisms are diverse as products of evolutionary and hereditary forces, are reviewed.</p>	Lecture-discussion		
8	<p>Immunity and Diseases:</p> <p>Discussion of immunity and diseases at a general perspective, including its symptoms, prevention and cure, as well as diseases brought about by bacteria</p>	Lecture-discussion		



	and viruses, are discussed.			
9	Genetically Modified Organisms Understanding of basic concepts underlying genetically-modified organisms and their effects to the human body and the world as a whole, is elaborated.	Lecture-discussion		
10	First Aid First aid as an immediate assistance given to any person suffering from either a minor or serious illness or injury, with care provided to preserve life, prevent the condition from worsening, or to promote recovery, is integrated	Lecture-discussion		
11	The Biosphere and Ecological System The inclusion of the biosphere in the discussion and the ecological system lays a platform for ecological enthusiasts and warriors to instill a sense of concern and responsibility as members of a diverse, ecological system.	Lecture-discussion		
12	The Human Demography/Population As part of the system, human population contributes significantly to the changes and degradation of the environment. It is necessary to include important concepts about human demography or the study of population for better insights.	Lecture-discussion		
13	Environmental Issues and Concerns With the present global scenario, environmental problems have greatly devastated the Earth, contributing significantly to climate change and affecting majority of the advanced and less advanced countries in the world.	Lecture-discussion		

**주요교재 및 참고자료**

구 분	자 료 명
교 재	Textbook: Mader, Sylvia S. (1994). Introduction to Biology. USA. WCB Publishers
참고자료	Keeton, W. T. (1980). Biological Science. USA. 3rd Edition W. W. Norton & Co. Inc. Starr, C., & Taggart R. (1984). Biology: The Unity and Diversity of Life. USA. 3rd Edition Wadsworth Publishing Co.