수업계획서

교과목명	생화학1			학수번호	10834001	이수	전필	학점	3
강의시간	수B ,목A		강의실	바이오나노대학-306,바이오나노대학-406					
선수과목				공학인증 이수구분					

교수소속	바이오나노대학 생명과학과	교수성명	남명진,이상열	연락처	
e-mail		연구실		지도상담시간	
홈페이지/카페				조교	

강의 개요

This class aims to understand the biochemical mechanisms in living organism in terms of scientific information and experimental processes.

강의 목표

The objective of this course is to understand the major components in living cells and organisms in terms of their chemical characteristics, innteractions with other components and cellular roles. We focus on four major macromolecules – proteins, lipids, nucleotides and carbohydrates.
-Understanding of major macromolecule structure and function
-Understanding of biological roles in cells

강의 진행방법

Lecture oriented class. Assigment will help understand the lecture contents.

평가요소	성적 평가방법	비율
출석	4 times of absence will be F grade. 2 times of late attendence will be one absence	20
중간고사	Attendance exam	35
기말고사	Attendance exam	35
레포트	Assignment	10
그룹 프로젝트		0
기타		0
합 계		100

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과제명 및 과제작성 방법안내	제출일	제출물 유형 및 제출방법
Ch.2Water,Ch.3Aminoacids,peptides,andproteins OddNumberProblemsolving	9/19	Report submission
Ch.4Thethreedimensionalstructureofproteins.Ch.5Proteinfunction,Ch.6Enzyme Oddnumberproblemsolving	10/17	Report submission
Ch.7carbohydrates,Ch.8Nucleotides,Ch.9DNAbasedtechnology Oddnumberproblemsolving	11/21	Report submission
Ch.10Lipids,Ch.11Biologicalmembraneandtransport Oddnumberproblemsolving	12/12	Report submission

* 과제지연시 패널티 기준 :

구분	교재명	저자	출판사	출판년도
주교재	Principles of Biochemistry 5th Edition	David Nelson, Michael Cox	Freeman	2008
부교재				
참고자료				

강의 규정 (학습자 유의사항)

장애학생 지원내용

If the student need a handicapped assistance, please let the lecturer or the department office know.

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주차	기 간	수 업 내 용 및 학 습 활 동
1	08/31 ~ 09/06	-Topic:Introduction of Biochemistry -Contents:General summary of Biochemistry in this semester. Major macromolecules and theirr oles
2	09/07 ~ 09/13	-Topic:Water -Contents:Physical properties of water in biological system.Buffering capacity andpH
3	09/14 ~ 09/20	-Topic:Aminoacids, peptides and proteins-1 -Contents:Basicstructure of amino acids and its chemical bond for protein synthesis
4	09/21 ~ 09/27	-Topic: Aminoacids, peptides and proteins-2 -Contents:Basic structure of amino acids and its chemical bond for protein synthesis
5	09/28 ~ 10/04	-Topic:The three-dimensional structure of proteins -Contents:various structure of proteins and conformation. Function and structure relationships
6	10/05 ~ 10/11	-Topic: Protein function -Contents: Various structure of proteins as catalysts, structural components, hormones
7	10/12 ~ 10/18	-Topic: Enzyme -Contents: Enzymekinetics. Chemical mechanism of enzyme-mediated chemical reaction. Application of enzymes in bioengineering
8	10/19 ~ 10/25	Mid Exam
9	10/26 ~ 11/01	-Topic: Carbohydrates and glycobiology -Contents: Definition o fcarbohydrates. Structure of carbohydrates and its function in biological magramolecules.
10	11/02 ~ 11/08	-Topic:NucleotidesandNucleicacids -Contents: Structure of nucleicacids in DNA and RNA. Other function of nucleic acids. History of molecular biology
11	11/09 ~ 11/15	-Topic: DNA- based information technologies-1 -Contents: Basic molecular biology. Recombinant DNA techniques. Bioinformatics and systems biology
12	11/16 ~ 11/22	-Topic: DNA- based information technologies-2 -Contents: Basic molecular biology. Recombinant DNA techniques. Bioinformatics and systems biology
13	11/23 ~ 11/29	-Topic: Lipids -Contents: Various structure of lipids and their functions in biological membrane and signaling
14	11/30 ~ 12/06	-Topic:BiologicalmembranesandTransport-1 -Contents:Biological membrane as a barrier for transport. Various mechanism of molecule transport through membrane.
15	12/07 ~ 12/13	-Topic:BiologicalmembranesandTransport-2 -Contents:Biological membrane as a barrier for transport. Various mechanism of molecule transport through membrane.
16	12/14 ~ 12/20	Final Exam