2020학년도 1학기 강의계획서

교 과 목 명	영양생화학				과목번호	8684		
구분(학점)	3시간(3)학점				수강대상	2학년		
강의실(시간)								
인재상	합리적소통인		전문적통섭인		창의적실천인		선도적세계인	
8대 핵심역량	인성역량	의사소통역량	종합적사고력	지식탐구역량	창의역량	정보활용역량	글로컬역량	리더십역량
				80%	20%			
전공역량	바이오식품분석역량, 영양급식관리및분석역량							
담당교수	성명	염경진		소속				
	e-mail			연락처				
	상 담 시 간			상담장소				

1. 교과목 개요(Course Overview)

강의방법	강의식	토의(토론)	실험/실습	현장학습	이러닝	B러닝	플립러닝
		67%					33%

평가방법	출석	중간고사	기말고사	과제물	기타1	기타2	기타3	기타4	기타5
	15%	25%	40%	20%					

강 의 개 요	Nutritional Biochemistry is a fundamental course in nutritional sciences. Students will be expected to be familiar with the material covered in an Introductory Nutrition. It will serve as a foundation for the material explored in this course. ※NUTRITIONAL BIOCHEMISTRY IS A FLIPPED LEARNING COURSE.
선수학습내용	Basic Nutrition, Biology, Chemistry
강 의 목 표	Nutritional Biochemistry will cover topics related to cells, body fluid, proteins, carbohydrates, lipids, nucleic acids,enzymes and vitamins. By the end of the course, students will be able to have an understanding of the biochemical and physiological mechanisms involved in macronutrients as well as vitamins.
교재 및 참고문헌	1. 변기원등 6인. (2019). 이해하기 쉬운 생화학 (3쇄). 파워북. 2. 윤문영. (2015). 기초생화학 (제2판). 자유아카데미. 3. 이주희등 6인. (2013). 대사를 중심으로 한 생화학 (2nd Edition). 교문사.
장애학생 지원사항	Additional support will be provided for physically challenged students.

2. 주차별 수업계획(Course Schedule)

주	기간	분 류	내 용
1	03/09~03/13	학습주제	Introduction, Cells
		학습목표	Understand the basic unit of living organism
		학습내용	◆ Introduction to the course. Discuss about the facts of life (on-line) ◆ Cells (off-line)
		수업방법	Lecture and Discussion
		수업자료	Chap1
2	03/16~03/20	학습주제	Importance of water for life
		학습목표	Understand the properties of water
		학습내용	◆ Properties of water, pH, buffer, role of body fluid (on-line) ◆ Water & body fluid discussion (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap1
3	03/23~03/27	학습주제	Amino acids and peptides
		학습목표	Understand amino acids and proteins
		학습내용	◆ Understand properties of amino acids and peptides (on-line) ◆ Unerstand the protein primary, secondary, tertiary and queaternary strucutres. Protein classification (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 2
4	03/30~04/03	학습주제	Metabolism of amino acids and proteinds
		학습목표	Understand metabolism amd catabolism of amino acids
		학습내용	◆ Absorption and digestion of proteins (on-line) ◆ Catabolism of amino acids and urea cycle (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 3
5	04/06~04/10	학습주제	Enzyme properties
		학습목표	Understand basic properties of enzymes
		학습내용	◆ Basic concept of enzyme action (on-line) ◆ Enzyme kinetics and regulation (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 3
6	04/13~04/17	학습주제	Fatty acids, Lipids
		학습목표	Understand basic structures and properties of fatty acids and lipids
		학습내용	◆ Structure, chemistry and biological functions of lipids, energy storage,membrane, emulsification (on-line) ◆ Fatty acid and lipid metabolism, beta-oxidation, lipogenesis (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 8

주	기간	분 류	내 용
7	04/20~04/24	학습주제	Fate of Acetyl-CoA
		학습목표	Understand the fate of Acetyl-CoA
		학습내용	◆ Fate of Acetyl-CoA (on-line) ◆ Review: Cells ~ Acetyl-CoA (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 9
8	04/27~05/01	학습주제	Mid-Term Exam (35%)
		학습목표	April 20, Monday, 11:00 am -12:00 pm (noon)
		학습내용	
		수업방법	
		수업자료	
9	05/04~05/08	학습주제	Carbohydrates and Glycolysis
		학습목표	Understand carbonydtares and metabolism of carbohydrates
		학습내용	◆ Carbohydrates (monosaccharides, disaccharides, polysaccharides) (on-line) ◆ Metabolism of carbohydrates, Glycolysis (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 4
10	05/11~05/15	학습주제	Fate of pyruvate, Glycogenesis, Glycogenolysis, Gluconeogenesis
		학습목표	Understand the fate of pyruvate and other metabolism of carbohydrates
		학습내용	◆ Fate of carbohydrates (on-line) ◆ Glycogenesis, Glycogenolysis, Gluconeogenesis (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 6
11	05/18~05/22	학습주제	TCA cycle, Electron transport, Oxidative phosphorylation
		학습목표	Understand TCA cycle, Electron transport, Oxidative phosphorylation
		학습내용	◆ TCA cycle, Electron transport, Oxidative phosphorylation (on-line) ◆ Q/A session for TCA cycle, Electron transport, Oxidative phosphorylation (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 11
12	05/25~05/29	학습주제	Biochemical energy production
		학습목표	Understand biochemical energy production
		학습내용	◆ Biochemical energy production (on-line) ◆ Q/A session for biochemical energy production (off-line)
		수업방법	Lecture and discussion
		수업자료	Chap 11

주	기간	분 류	내 용
13	06/01~06/05	학습주제	Nucleotides, Nucleic acids and protein synthesis
		학습목표	Undertand Nucleotides, Nucleic acids and protein synthesis
		학습내용	◆ Nucleotides and nucleic acids (on-line) ◆ Protein synthesis (off-line)
		수업방법	Lecture and discussion
		수업자료	Lecture note
14	06/08~06/12	학습주제	Water-soluble vitamins
		학습목표	Understand basic concepts of water-soluble vitamins
		학습내용	◆ Structures, metabolisms and functions of ascorbic acid, thiamin (on-line) ◆ Structures, metabolisms and functions of riboflavin, niacin, pyridoxine, cobalamin, folate (off-line)
		수업방법	Lecture and discussion
		수업자료	Lecture note
15	06/15~06/19	학습주제	Fat-soluble vitamins
		학습목표	Understand basic concept of fat-soluble vitamins
		학습내용	◆ Structures, metabolisms and functions of Vitamin A (on-line) ◆ Structures, metabolisms and functions of Vitamin D, E, & K (off-line)
		수업방법	Lecture & Discussion
		수업자료	Lecture notes
16	06/22~06/26	학습주제	Final Exam (35%)
		학습목표	June 15th, Monday, 11:00 am - 12:00 pm, noon
		학습내용	
		수업방법	
		수업자료	

강의과제	적용시기학년	과제명	제출방법
강의과제	학년	Bioenergetics	Poster

	구분	구분
수업규칙	예의	Nutritional Biochemistry is a Flipped learning course. In this flipped classroom students are encouraged to engage with lectures via on-line to prepare for an active learning experience in the classroon.
	기타	Students' performance evaluation - Attendance 15% - Homework 15% - Mid-term exam 35% - Final exam 35%