Biological Experiment II

Course Name	Course type (credit/hours)	Required course(2/4)	Course code	G069
	Target students Division/major/grade	Biological Science/Sophomore	Opening semester	2020 2ND SEMESTER
	Class time and classroom	Wed 9(WH237) Wed 10(WH237) Wed 11(WH237) Wed 12(WH237)	English Grade	A(100%English)
Reference to this course	Prerequisite courses	Biology I and II		
	Related basic courses			
	Recommended concurrent courses	Biochemistry		
	Related advanced courses			

Instructor	Name (title/division)	Hye Sun Kim(Professor, Biological Science)				
	Office Room Number	원천관 204	Office phone Number	2622	e-mail	
	Office hours	M,W 5:00-6:00	Homepage address			
Teaching Assistant	Name (title/division)					
	Office Room Number	Wonchunkwan 131-2	Office phone Number	2624	e-mail	clearface@ajou.ac.kr

1. Introduction

Experiment in Biochemistry II deals with a number of experiments that are pivotal issues to understanding Biochemistry and Physiology.
It contains experiments such as cell culture and sample preparation, protein determination, western blotting and enzyme activity assay.

2. Course Objectives

The aims of the course is to let students have in-depth bench experience in protein chemistry and various aspects of physiology. At the same time, the course will enable students to taste the joy of discovery and research in biological sciences, which, in turn, might lead them to graduate schools.

3. Class types and activities

The class will be conducted by actual bench works. Each students will be given an explanation of the experiment, and they will conduct the experiments in their own schedule.
Students learn about the experimental topics and methods filmed in advance, and go to biweekly to conduct actual experiments.

4. Teaching Method

- [V] lecture
- [V] discussion and debate
- [V] team project(presentation and case studies)
- [V] experiments(role-playing,etc)
- [ ] designing and production
- [ ] on-site learning(on-site training)
- [ ] others

5. Support Systems in Use

- [V] AjouBb
- [V] automatic recording system
- [ ] web-based assignment
- [V] cyber lecture
- [V] online content
- [ ] class behavior analyazing system
- [ ] others

6. Teaching Tools

- [ ] PBL(Problem Based Learning)
- [ ] CBL(Case Based Learning)
- [ ] TBL(Team Based Learning)
- [ ] UR(Undergraduate Research)
- [V] FL(Flipped Learning)
- [ ] DSAL(Data Science Active Learning)
- [ ] others

7. Knowledge and ability required for taking this course

Simple calculation level calculus is needed to interpret some of the data obtained during the experiment.

8. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance	14	10%	
midterm exam			
final exam	1	20%	
quiz			
presentation			
discussion			
homework	10	60%	
etc		10%	수업태도, 성실성, 타인과의 협동심 등
study hours	주당 4-5시간		

9. Textbook and supplementary material

Main/Sub	Title (Web-site)	Writer	Publisher	Publication year
Main	생리학/생화학 실험서(자체 제작)	김혜선, 빈범호	자체제작	2020

10. Class system and Class shedule

Blochemistry-related experiments will be conducted first, followed by physiology experiments.

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
1	Introduction and grouping	E	Hye Sun Kim	녹화강의		
2	Cell culture	E	Hye Sun Kim	녹화강의		
3	Cell culture	E	Hye Sun Kim	등교수업		
4	Protein determination and sampling	E	Hye Sun Kim	녹화강의		
5	Protein determination and sampling	E	Hye Sun Kim	등교수업		

< Class Schedule >

* language : K-korean, E-English

Weeks	Topics	language	Instructor	Teaching Method	Evaluation Method	Matter to be prepared
6	Titration and buffer	E	Hye Sun Kim	녹화강의		
7	Titration and buffer	E	Hye Sun Kim	등교수업		
8	Midterm exam	E	Hye Sun Kim	중간고사		
9	SDS-PAGE and Western blotting	E	Hye Sun Kim	녹화강의		
10	SDS-PAGE and Western blotting	E	Hye Sun Kim	등교수업		
11	Protein purification	E	Hye Sun Kim	녹화강의		
12	Protein purification	E	Hye Sun Kim	등교수업		
13	DEAE ion exchange chromatography	E	Hye Sun Kim	녹화강의		
14	DEAE ion exchange chromatography	E	Hye Sun Kim	등교수업		
15	Back-up experiments	E	Hye Sun Kim	녹화강의		
16	Final exam	E	Hye Sun Kim	기말고사		

11. Other items of notification