

Syllabus

Cancer Biology

Course Name	Course type (credit/hours)	전선(3/3)		Course code		
	Target students Division/major/grade	생명과학과/6학년		Opening semester	2019년 2학기	
	Class time and classroom	월A(원243) 수A(원243)(원243)				
Reference to this course	Related basic courses					
	Recommended concurrent courses					
	Related advanced courses					
Instructor	Name (title/division)	빈범호 (조교수/생명과학과)				
	Office Room Number		Office phone Number	0312192618	e-mail	bhb@ajou.ac.kr
	Office hours		Homepage address			
Teaching Assistant	Name (title/division)					
	Office Room Number		Office phone Number		e-mail	

1. Introduction

This course, "Cancer biology", will provide a comprehensive overview of the biology and pathology of cancer, in order to cover current concepts and knowledge of cancer, including cancer basic and translational research. This course will explore the cellular and molecular mechanisms underlying cancer development with the aim of understanding how changes in the normal growth and division processes lead to the formation of tumors. Topics include the natural history of cancer, oncogenes, tumor suppressors, cancer-causing viruses, epidemiology, health care policy and current therapeutic approaches to cancer treatment.

2. Course Objectives

3. Class types and activities

4. Teaching Method

교과서 및 최근 연구 동향 및 방법에 대한 강의 위주
 관련 연구 수강생들의 발표 (수 5:30분-7시 강의, 강의 시간은 향후 변경 가능)
 영어(slide)와 동시에 우리말로 설명

The first half of the course will focus on the genetic and molecular basis of cancer. We will explore the role of mutations in cancer cells and how they lead to the deregulation of essential biological properties such as programmed cell death, cell proliferation, and differentiation. The second half of the course will focus on the interface of cancer and medicine. We will explore the challenges associated with diagnosing c
 Each topic could be followed by the Discussion session covering recent breakthrough paper, which will be informed 2 weeks in advance. I will appoint randomly one student for each discussion session who will introduce the main observation of each paper to the class (in Korean or in English, 우리말 또는 영어로).

5. Knowledge and ability required for taking this course

6. Method of Evaluation

Evaluation Item	The Number of Times	Evaluation Proportion	Remarks
Attendance			
midterm exam			
final exam			
quiz			
presentation			
discussion			
homework			
etc			

출석 50% 발표 0-10% 기말고사 1회 40-50%

The students of this course will be graded by attendance, presentation, and one exams. The final exam and attendance quiz could be used for your qualifying exams.

7. Textbooks

Main/Sub	Title	Writer	Publisher	Publication year
주교재	The Biology of Cancer	Weinberg, Robert A	Garland Science	200

8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
1	Overview of course	lecture	paper assignment 발표 주제 및 순서 결정
2	Overview of the hallmarks of cancer (The nature of cancer) (Chapter 1 (review) Chapter 2.1–2.5 Chapter 11.1–11.2)	lecture	
3	Carcinogenesis mechanisms and Tumor viruses (Chapter 2.6–2.11, Chapter 3)	lecture	
4	Cellular oncogenes and Mechanisms of oncogene activation (Chapter 4)	lecture	
5	Keep-up lecture (cell biology) or Paper Discussion 1 and 3		presentation and discussion
6	Role of growth factors and receptors in carcinogenesis (Chapter 5.1–5.7)	lecture	
7	Cytoplasmic signaling circuitry programs many of the traits of cancer (RAS signaling in cancer) (Chapter 6.1–6.7, 6.13)	lecture	
8	Tumor suppressor genes (Familial cancer syndromes and the discovery of tumor suppressors) (Chapter 7.1–7.9, 7.13)	lecture	
9	Keep-up lecture (Cell cycle review) or Paper Discussion 3–5		presentation and discussion
10	Cell cycle (Chapter 8, 9))	lecture	
11	Multi-step tumorigenesis (Chapter 11.3–11.15, 11.17–11.18)	lecture	
12	Cancer stemm cells (Chapter 11 and recent papers)	lecture	
13	Genomic instability I (DNA damage response and the evolution of cancer review)	lecture	
14	Maintenance of genomic integrity and the development of cancer (Chaper 12)	lecture	
15	Tumor microenviroment: Dialogue replaces monologue (Chaper 13 and recent paper)	lecture	

8. Lecture Schedule

Week	Lecture contents	Lesson type	Remark
16	final exam		

9. Others

수업시간은 조정가능

매 주제에 대한 관련 최신 논문 발표 및 토론에 앞서, 교수 강의가 최소한 1주 전에 선행됨

영어 슬라이드와 보충 우리말 설명으로 수업을 진행하여 언어문제로 인한 이해 부족을 보충하고함

자격고사와 관련한 강의