2020학년도 1학기 강의계획서

교 과 목 명	분자발생학				과목번호	8676		
구분(학점)	3시간(3)학점				수강대상	3학년		
강의실(시간)								
인재상	합리적소통인		전문적통섭인		창의적실천인		선도적세계인	
8대 핵심역량	인성역량	의사소통역량	종합적사고력	지식탐구역량	창의역량	정보활용역량	글로컬역량	리더십역량
			20%	80%				
전공역량	바이오식의약기초및응용기술개발역량							
담당교수	성명	김찬길		소속				
	e-mail			연락처				
	상 담 시 간			상담장소				

1. 교과목 개요(Course Overview)

강의방법	강의식	토의(토론)	실험/실습	현장학습	이러닝	B러닝	플립러닝
	80%	20%					

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

강 의 개 요	강의 개요 - 발생학 개론 - 발생 해부학 - 발생에서 세포통신 - 무척추동물의 초기발생 - 수정 - 초파리의 형태형성
선수학습내용	선수학습 내용 - 일반생물학 - 분자생물학 개론 - 생화학 개론
강 의 목 표	The goal of this course is to introduce you to the very broad field of developmental biology. A particular emphasis is the intimate connection between developmental biology and evolution, which will be a theme throughout the course. Additional emphasis is on the connection between mechanisms of normal developement and disease etiology. The course will cover general principles of development and current important issues. Relevant ethical issues will be discussed. Both invertebrate and vertebrate model systems will be covered including Drosophila C. elegans, chick, frog, zebrafish, mice and human
교재 및 참고문헌	1. 전상학 등. (2020). 발생생물학 11판. 라이프사이언스. 2. Gilbert. (). Developmental Biology. Sinauer.
장애학생 지원사항	- 강의 내용을 PPT로 서비스함

2. 주차별 수업계획(Course Schedule)

주	기간	분 류	내 용
1	03/09~03/13	학습주제	Introduction to developmental biology : the anatomical tradition
		학습목표	
		학습내용	1. The question of developmental biology 2. Approaches to developmental biology 3. The anatomical approach 4. Evolutionary embryology 5. Medical embryology and teratology
		수업방법	
		수업자료	3
2	03/16~03/20	학습주제	2. Life cycle and the evolution of developmental patterns
		학습목표	
		학습내용	1. The circle of life : the stages of animal development 2. The frog life cycle 3. The evolution of developmental patterns in unicellular protists 4. Multicellularity : The evolution of differentiation
		수업방법	
		수업자료	25
3	03/23~03/27	학습주제	3. Principles of experimental embryology
		학습목표	
		학습내용	1. Environmental developmental biology 2. The developmental dynamics of cell specification 3. Morphogenesis and cell adhesion
		수업방법	
		수업자료	51
4	03/30~04/03	학습주제	4. The genetic core of development
		학습목표	
		학습내용	1. The embryological of origins of the gene theory 2. Evidence of genomic equivalence 2-1. Amphibian cloning 2-2. Cloning mammals 3. Differentail gene expression 4. Determination of the function of genes during development
		수업방법	
		수업자료	81
5	04/06~04/10	학습주제	5. The paradism of differential of gene expression
		학습목표	
		학습내용	1. Differential gene transcription 2. Methylation pattern and the control of transcription 3. Differential RNA processing 4. Control of gene expression at the level of translation
		수업방법	
		수업자료	107

주	기간	분 류	내 용
6	04/13~04/17	학습주제	6. Cell-cell communication in development
		학습목표	
		학습내용	1. Induction and competence 2. Paracrine factors 3. Cell surface receptors and their signal transduction 4. Cell death pathways
		수업방법	
		수업자료	143
7	04/20~04/24	학습주제	7. Fertilization
		학습목표	
		학습내용	1. Structure of the gametes 2. Recognition of egg and sperm 3. Gamete fusion and the prevention of polyspermy 4. The activation of egg metabolism 5. Fusion of the genetic materials 6. Rearrangement of cytoplasmic materials
		수업방법	
		수업자료	183
8	04/27~05/01	학습주제	Mid-term test
		학습목표	
		학습내용	I am going to give you some documents and materials to prepare the mid-term test on the website.
		수업방법	
		수업자료	
9	05/04~05/08	학습주제	9. Early development in selected invertebrates
		학습목표	
		학습내용	1. In introduction to early developmental process 1-1. Cleavage 1-2. gastrulation 1-3. Cell specification and axis formation 2. The early development of sea urchins 3. The early development of snails
		수업방법	
		수업자료	221
10	05/11~05/15	학습주제	10. Early development in selected invertebrates
		학습목표	
		학습내용	1. Early development in tunicates 2. Early development of the nematode C elegans 2-1. Why C. elegans? 2-2. Cleavage and axis formation in C elegans 2-3. Gastrulation in C. elegans
		수업방법	
		수업자료	246

주	기간	분 류	내 용
11	05/18~05/22	학습주제	11. The genetic axis of specification in Drosophila
		학습목표	
		학습내용	1. Early Drosophila development 1-1. Cleavage 1-2. Gastrulation 2. The origin of anterior-posterior polarity 2-1. The maternal effectof genes 2-2. The segmentalion of genes 2-3. The Homeiotic selector genes
		수업방법	
		수업자료	263
12	05/25~05/29	학습주제	12. The genetic axis of specification in Drosophila
		학습목표	
		학습내용	3. The generation of dorsal-ventral polarity 3-1. Dorsal : the morphogenetic agent for dorsal-ventral polarity 3-2. Axes and organ primordia : the Cartesian coordinate model 3-3. coda
		수업방법	
		수업자료	290
13	06/01~06/05	학습주제	13. Early development and axis formation in amphibians
		학습목표	
		학습내용	1. Cleavage in amphibians 2. Amphibian gastrulation 2-1. The Xenopus fate map 2-2. Cell movement during amphibian gastrulation 2-3. ... Invagination and involution 2-4. The convergent extension of the dorsal mesoderm 2-5. Epiboly of the ectoderm
		수업방법	
		수업자료	305
14	06/08~06/12	학습주제	14. Sex determination
		학습목표	
		학습내용	1. Chromosomal sex determination in mammals 2. Primary and secondary sex determination in mammals 3. The developing gonads 4. The mechanisms of mammalian primary sex determination 5. Secondary sex determination : Hormonal regulation of the sexual phenotype
		수업방법	
		수업자료	547

주	기간	분 류	내 용
15	06/15~06/19	학습주제	15. The nature and use of stem cells
		학습목표	
		학습내용	Stem cells have two important characteristics that distinguish them from other types of cells. First, they are unspecialized cells that renew themselves for long periods through cell divisions.? The second is that under certain physiological or experimental conditions, they can be induced to become cells with special functions such as beating cells of the heart muscle or the insulin-producing cells of the pancreas.
		수업방법	
		수업자료	The materials are on the website
16	06/22~06/26	학습주제	Final test
		학습목표	
		학습내용	I am going to give you some documents and materials to prepare the final test on the website
		수업방법	
		수업자료	

강의과제	적용시기학년	과제명	제출방법
강의과제	학년	Students have to summarize all the lecturs, then submit the note.	
강의과제	학년	presentation	

수업규칙	구분	구분
	예의	
	기타	