Course Syllabus

SIPS 607

Academic Year 2023

Department of Physiology

Faculty of Medicine Siriraj Hospital, Mahidol University

Course ID and name:	SIPS607: Cellular Pathophysiology
Course coordinator:	Dr.Rujapope Sutiwisesak MD, PhD
Instructors:	Assoc. Prof. Dr.Sorachai Srisuma MD, PhD
	Assist. Prof. Dr.Sompol Tapechum MD, PhD
	Assoc. Prof. Dr.Wattana Watanapa MD, PhD
	Assoc. Prof. Dr.Chailerd Pichitpornchai MD, PhD
	Dr.Luecha Boontaveekul MD
	Assoc. Prof. Dr.Suwattanee Kooptiwut MD, PhD
	Assoc. Prof. Dr.Panapat Uawithya MD, PhD
	Assoc. Prof. Dr.Narawut Pakaprot MD, PhD
	Assoc. Prof. Dr.Reawika Chaikomin MD, PhD
	Assoc. Prof. Dr.Chantacha Sitticharoon MD, PhD
	Assist. Prof. Dr.Yodying Dangprapai MD, PhD
	Dr.Thaksaon Kittipassorn MD, PhD
	Dr.Rujapope Sutiwisesak MD, PhD
	Dr.Patamat Nitiwaranggoon MD, PhD
	Dr.Thanus Teeratitayang-gool MD
Credits:	2 (2-0-4) (lecture – laboratory – self-study)
Curriculum:	Doctor of Philosophy Program in Medical Physiology
Course type:	☐ Core ☐ Required ☑ Electives
Semester offering:	2
Prerequisite:	None
Date of Latest Revision:	11 November 2023

Course Description:

Cell injury, cell senescence, cell death; cellular mechanisms of atrophy; immune response, inflammation, angiogenesis; reaction of cells to oxidative stress, xenobiotic metabolism;

resolution biology, stem cell; cellular mechanisms of repair, remodeling, regeneration and fibrosis; controls of cellular differentiation and carcinogenesis; correlation of microscopically anatomical changes in cells to altered physiology as a basis of diseases in various body systems including techniques for determining such abnormalities

Course-level Learning Outcomes (CLOs)

Upon completion of this course, students are able to:

1. Explain main changes at cellular and/or molecular level, which correlate with pathophysiological alterations and clinical manifestations, in the interested pathological conditions
2. Criticize recent insights in cellular pathophysiology published in international peer-reviewed journals

Constructive Alignment of CLOs and Program's ELOs

CLOs	ELO1	ELO2	ELO3	ELO4
1. Explain main changes at cellular and/or molecular level, which correlate with pathophysiological alterations and clinical manifestations, in the interested pathological conditions	R			
2. Criticize recent insights in cellular pathophysiology published in international peer-reviewed journals			P	R

Remarks: Show the level of the course management with the symbols I, R, P, and M.

Program's Expected Learning Outcomes

1. Analyze the different concepts, theories, hypotheses related to medical physiological field of interest.
2. Conduct extensive and independent research in medical physiology that expands the frontiers of knowledge in the field of an area of interest.
3. Criticize the research work with a detailed and leading-edge knowledge of physiology in an area of interest.
4. Disseminate new insights of medical physiology to peers and the scientific community at international level.

Course Schedule and teaching/assessment plan

No.	Topic	Hours			CLOs	Teaching & learning strategy	Assessment (in-class)	Lecturers
		Lecture	Laboratory	Self Study				
1	Course introduction			1		VDO asynchronous	N/A	RS
2	Cellular responses to injury: adaptation and injury	2		4	1	VDO asynchronous		
3	Mechanisms of cell death	2		4	1	VDO asynchronous		
4	Cellular senescence & aging	2		4	1	VDO asynchronous		
5	Immune response & inflammation	3		6	1	VDO asynchronous		
6	Repair, fibrosis, resolution	3		6	1	VDO asynchronous		
7	Cell differentiation and carcinogenesis	3		6	1	VDO asynchronous		
8	Cellular pathophysiology of nervous system disease/disorder 1	1		2	1	VDO asynchronous		
9	Cellular pathophysiology of nervous system disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
10	Cellular pathophysiology of cardiovascular disease/disorder 1	1		2	1	VDO asynchronous		
11	Cellular pathophysiology of cardiovascular disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
12	Cellular pathophysiology of respiratory disease/disorder 1	1		2	1	VDO asynchronous		
13	Cellular pathophysiology of respiratory disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	

14	Cellular pathophysiology of gastrointestinal disease/disorder 1	1		2	1	VDO asynchronous		
15	Cellular pathophysiology of gastrointestinal disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
16	Cellular pathophysiology of membrane transport disease/disorder 1	1		2	1	VDO asynchronous		
17	Cellular pathophysiology of membrane transport disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
18	Cellular pathophysiology of endocrine disease/disorder 1	1		2	1	VDO asynchronous		
19	Cellular pathophysiology of endocrine disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
20	Cellular pathophysiology of reproductive disease/disorder 1	1		2	1	VDO asynchronous		
21	Cellular pathophysiology of reproductive disease/disorder 2	2		4	1,2	Hybrid Onsite and Online synchronous	Examination Discussion	
Total hours of the study		**30 (36)**		**61 (73)**				

* Students choose to attend (at least) 4 out of 7 system modules in No.9, 11, 13, 15, 17, 19 and 21. Those who attend more than 4 classes will be assessed based on 4 classes with highest score.

Course Assignments

- Presentation: cellular pathophysiology of the assigned system; 1 system
- Reflection report at the end of the course

Assessment Criteria

- In-class assessment 30% (pathophysiology of 4 systems; 7.5% each)
    - Examination (quiz, worksheet etc.)
    - Discussion
- Presentation 15% (students are required to present 1 topic)
- Examination 15% (from topic 2-6)
- Reflection report 40%

Appeal Procedure