

SCBM 344
Cellular and Molecular Pathology

Semester 2/2018

Department of Pathobiology
Faculty of Science
Mahidol University

Course Syllabus

(Lecture-Lab-Self study)

SCBM 344 Cellular and Molecular Pathology

2(2-0-4)

Course description

Biochemical, molecular and cellular changes leading to the development and progression of human diseases, such as those from pathogenic microorganism infection, toxic chemical and physical agents, ischemia, hypoxia, free radical-mediated oxidative stress and other types of stress.

Prerequisite: SCBM 341 General Pathology

Type of course: Required course

Session: 2nd semester, 3rd year student

Course Condition class size: None

Course objectives

By the end of this course the students are able to;

1. Explain how the cells response to stress and injurious stimuli
2. Describe general mechanisms of cell injury
3. Explain cellular and molecular changes leading to the development and progression of human diseases

Course outline

Date	Time	Topic		Lecturer
Fri 18 Jan	13.00-15.00	Introduction to cellular and molecular pathology	L1	ANJ
Fri 1 Feb	13.00-15.00	Mechanisms of cell injury: Loss of calcium homeostasis	L2	ANJ
Fri 8 Feb	13.00-15.00	Mechanisms of cell injury: Oxidative stress	L3	PS
Fri 15 Feb	13.00-15.00	Mechanisms of cell injury: Mitochondrial damage	L4	PC
Fri 1 Mar	13.00-15.00	Mechanisms of cell injury: ATP depletion and hypoxia	L5	PC
Fri 8 Mar	13.00-15.00	Cellular and molecular pathology from chemical and physical injuries	L6	WJ
Fri 15 Mar	13.00-15.00	Q&A session	L7	Staff
Fri 22 Mar	13.00-16.00	Midterm Examination (L1-L6)		
Fri 29 Mar	13.00-16.00	Cellular and molecular pathology of neurodegenerative disorders	L8	YN
Fri 5 Apr	13.00-15.00	Cellular and molecular pathology of Immunological disorders	L9	WP
Fri 12 Apr	13.00-15.00	Cellular and molecular pathology of fungal infection	L10	SN
Fri 19 Mar	13.00-15.00	Cellular and molecular pathology of bacterial infection	L11	YN
Fri 26 Apr	13.00-15.00	Cellular and molecular pathology of parasitic infection	L13	NK
Fri 3 May	13.00-15.00	Cellular and molecular pathology of viral infection	L12	PC
Fri 10 May	13.00-15.00	Cellular and molecular pathology of cancer	L14	PS
Fri 17 May	13.00-15.00	Q&A session	L15	Staff
Fri 24 May	13.00-16.00	Final Examination (L8-L14)		
			30 hr	

Teaching Method

In-class lectures and group discussion

Teaching Media

Powerpoint presentation, Handout

Measurement and Evaluation of Students Achievement

- | | |
|------------------------------------|-----|
| 1. Class attendance | 10% |
| 2. Examination (Short answer/ MCQ) | 90% |

Course Evaluation

1. Students gain knowledge according to the course objectives.
2. Students participate in class \geq 80% of total hours.
3. Grading will be A, B+, B, C+, C, D+, D or F

References

1. Kumar V, Abbas A, and Aster J. Robbins Basic Pathology. 10th Edition. Elsevier, 2017
2. Coleman WB and Tsongalis GJ. Molecular pathology: the molecular basis of human disease. Academic Press, 2009.

Instructors

1. ANJ = Assistant Professor Amornrat Naranuntarat Jensen, Ph.D
2. NC = Nisamanee Charoenchon, Ph.D
3. NK = Niwat Kangwanrangsang, Ph.D
4. PC = Assistant Professor Pornthip Chaichompoo, Ph.D
5. PS = Associate Professor Prasit Suwannalert, Ph.D
6. SN = Somphong Narkpinit, M.D.
7. WJ = Associate Professor Wanee Jiraungkoorskul, Ph.D
8. WP = Witchuda Payuhakrit, Ph.D

Course Coordinator:

Assistant Professor Amornrat N. Jensen, Ph.D

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Requesting an appeal:

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