

SCBM 302
Regenerative Neurobiology

Semester 2/2017

Department of Pathobiology
Faculty of Science
Mahidol University

Course Syllabus

(Lecture-Lab-Self-study)

SCBM 302 Regenerative Neurobiology

2(2-0-4)

Course description

Regenerative neurobiology is a branch of cellular mechanisms underlying injury and repair in the nervous system. The topic will include anatomy, physiology and pathology of neuron systems. Advance regenerative neurobiology will explain about conditions those destroy or impair neuron systems and current standard medical treatment options and advance medical sciences which can be improved neuron tissue functions. The end of topics will review about update research and technologies in regenerative biology.

Prerequisite: SCBM 304 Biological science of aging
SCBM 215 Medical Neuroscience

Type of course: required course

Session: 2nd semester, 3rd year student

Course class size: none

Course objectives

By the end of this course the students are able to demonstrate cellular Mechanisms underlying injury and repair in the nervous system including anatomy, physiology and pathology of neuron systems and conditions those destroy or impair neuron systems and current standard medical treatment options and advance medical sciences which can be improved neuron tissue functions.

Course Outline

Date	Time	Topic		Instructor
9 Feb	1.00-4.00	Course introduction and cosmetic procedures for rejuvenation (Botulinum toxin, filler and laser)	L1	SN
16 Feb	1.00-4.00	Platelet-rich plasma (PRP) therapy	L2	SN
23 Feb	1.00-4.00	Sunscreen and supplementations	L3	NC
2 March	1.00-4.00	Basic photobiology in regenerative medicine	L4	NC
9 March	1.00-4.00	Clinical investigation for cosmeceutical sciences (observe activities1)	L5	SN (Dermscan)
14 March	1.00-4.00	Midterm Examination L1-L5		
23 March	1.00-4.00	Biomaterials for regenerative medicine (observe activities 2)	L6	NC (Mtec, NSTDA)
30 March	1.00-4.00	Applications of nanotechnology for regenerative medicine	L7	KP
20 April	1.00-4.00	Therapies for injured spinal cord and traumatic brain injury	L8	PD
27 April	1.00-4.00	Tissue engineering of skin	L9	NC
4 May	1.00-4.00	Biological scaffolds and hydro gel	L10	WP
21 May	1.00-4.00	Final Examination L6-L10		
			30 hr	

Teaching Method

Lectures in class 30 hours

Teaching Media

1. Class handouts/ powerpoint presentation/ short video clips
2. Textbooks/ papers from journals

Measurement and Evaluation of Students Achievement

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| 1. Class attendance | 10% |
| 2. In class activity/ quiz
(8 topics: L1-4, L6-8 and L10) | 40% |
| 3. Written Examination (short answer)/ MCQ
(8 topics: L1-4, L6-8 and L10) | 40% |
| 4. One-page report (2 topics: L5 and L9) | 10% |
| 5. Student Examination Grade = A, B+, B, C+, C, D+, D, F | |

References

1. Atala A, Lanza R, Thomson JA, Nerem R. Principles of regenerative medicine. 2nd ed. Academic Press, 2011.
2. David Stocum. Regenerative biology and medicine. 2nd ed. Elsevier/Academic Press, 2012.

Instructors

1. KP = Kanlaya Prapainop Ph.D
2. NC = Nisamanee Charoenchon, Ph.D
3. PD = Associate Professor Permphan Dharmasaroja, Ph.D
4. SN = Somphong Narkpinit, M.D.
5. WP = Witchuda Payuhakrit, Ph.D

Course Coordinator:

Nisamanee Charoenchon, Ph.D

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Requesting an appeal:

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