

**SCBM 302**  
**Regenerative Neurobiology**

**Semester 2/2018**

**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:** 2<sup>nd</sup> semester, 3<sup>rd</sup> 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
Fri 15 Feb	13.00-16.00	Course introduction and cosmetic procedures for rejuvenation (Botulinum toxin, filler and laser)	L1	SN
Fri 1 Mar	13.00-16.00	Basic photobiology in regenerative medicine	L2	NC
Fri 8 Mar	13.00-16.00	Sunscreen and supplementations	L3	NC
Fri 15 Mar	13.00-16.00	Platelet-rich plasma (PRP) therapy	L4	SN
Fri 22 Mar	13.00-16.00	Clinical investigation for cosmeceutical sciences (DermScan Asia)	L5	SN
<b>Fri 29 Mar</b>	<b>13.00-16.00</b>	<b>Midterm Examination L1-4, Room : Pr118</b>		
Fri 5 Apr	13.00-16.00	Applications of nanotechnology for regenerative medicine	L6	KP
Fri 12 Apr	13.00-16.00	Therapies for injured spinal cord and traumatic brain injury	L7	PD
Fri 19 Apr	13.00-16.00	Biological scaffolds and hydro gel	L8	NC
Fri 26 Apr	13.00-16.00	Tissue engineering of skin	L9	WP
Fri 3 May	13.00-16.00	Biomaterials for regenerative medicine	L10	NC
<b>Fri 10 May</b>	<b>13.00-16.00</b>	<b>Final Examination L6-9, Room : Pr101</b>		
			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**

- |  |     |
|--|-----|
| 1. Class attendance                                      | 10% |
| 2. One page report (2 topics)                            | 10% |
| 3. MCQ (8 topics)  | 80% |
| 4. 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. 2<sup>nd</sup> ed. Academic Press, 2011.
2. David Stocum. Regenerative biology and medicine. 2<sup>nd</sup> 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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