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

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Instructor</th>
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<tbody>
<tr>
<td>9 Feb</td>
<td>1.00-4.00</td>
<td>Course introduction and cosmetic procedures for rejuvenation (Botulinum toxin, filter and laser)</td>
<td>L1</td>
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<tr>
<td>16 Feb</td>
<td>1.00-4.00</td>
<td>Platelet-rich plasma (PRP) therapy</td>
<td>L2</td>
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<td>23 Feb</td>
<td>1.00-4.00</td>
<td>Sunscreen and supplementations</td>
<td>L3</td>
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<td>2 March</td>
<td>1.00-4.00</td>
<td>Basic photobiology in regenerative medicine</td>
<td>L4</td>
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<tr>
<td>9 March</td>
<td>1.00-4.00</td>
<td>Clinical investigation for cosmeceutical sciences (observe activities1)</td>
<td>L5</td>
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<td>14 March</td>
<td>1.00-4.00</td>
<td><strong>Midterm Examination L1-L5</strong></td>
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<tr>
<td>23 March</td>
<td>1.00-4.00</td>
<td>Biomaterials for regenerative medicine (observe activities 2)</td>
<td>L6</td>
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<tr>
<td>30 March</td>
<td>1.00-4.00</td>
<td>Applications of nanotechnology for regenerative medicine</td>
<td>L7</td>
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<td>20 April</td>
<td>1.00-4.00</td>
<td>Therapies for injured spinal cord and traumatic brain injury</td>
<td>L8</td>
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<td>27 April</td>
<td>1.00-4.00</td>
<td>Tissue engineering of skin</td>
<td>L9</td>
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<td>4 May</td>
<td>1.00-4.00</td>
<td>Biological scaffolds and hydro gel</td>
<td>L10</td>
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<tr>
<td>21 May</td>
<td>1.00-4.00</td>
<td><strong>Final Examination L6-L10</strong></td>
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### 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. In class activity/ quiz 40%
   (8 topics: L1-4, L6-8 and L10)
3. Written Examination (short answer)/ MCQ 40%
   (8 topics: L1-4, L6-8 and L10)
4. One-page report (2 topics: L5 and L9) 10%
5. Student Examination Grade = A, B+, B, C+, C, D+, D, F

References


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:

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