Department of Physiology, Faculty of Science, Mahidol University

SCPS 462: Trends in Translational Physiology 2(1-2-3)

Academic Year 2022 (1st semester)

August 15, 2022 – October 31, 2022

Course Title : Trends in Translational Physiology

Course code : SCPS 462

Total credit : 2(1-2-3)

Prerequisite : None

Course Description:

Current topics and directions in translational physiology; integrative physiology; application and integration of physiology knowledge with other disciplines; current topics in physiology; new technologies in physiological and related fields

Course Objectives:

After completing this course, students should be able to;

1. Explain how to translate the physiology knowledge for disease therapeutic and monitoring.
2. Explain how to translate the physiology knowledge for drug discovery.
3. Explain how to translate the physiology knowledge for development health product.
4. Explain how to translate the physiology knowledge for physical performance improvement.
5. Explain new technologies in physiology research.

Course overview

This course is designed to provide students with the applications of physiological knowledge. In addition, course also provides the advanced technologies for future physiology study and experiences on physiology research. For an assessment, students are tested through their ability to complete the assignments and their participation performance during lecture, group discussion sessions, and laboratory practice. Therefore, students are expected to actively participate in these activities both individually and team work.

Course Organization

The course was designed to use lecture and laboratory practice for learning process. Each lecturer will provide a transcript of his/her lecture. When appropriate, the lecturer will assign the students to read the suggested textbooks and original articles. In addition, students are assigned for laboratory practices.

Teaching Materials

1. Text-books
2. Print copies of power point presentation

Student Assessment

Assignments

- Reading assignment by instructors before the class
- Discussion topics, case study, original articles, review articles
- Writing assignment by instructors after the class

Assessment Criteria

Formative evaluation

- Feedback on writing assignment
- Feedback on group discussion and presentation

Summative evaluation

- Assignment 50%
- Attendance and Participation 50%

Student achievement will be graded according to the faculty and university standard using the symbols: A, B+, B, C+, C, D+, D, and F.

Course coordinator

Associate Professor Arthit Chairoungdua, Ph.D.
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Instructors

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Date	Time	Topics	Room	Instructors
Aug 15	1245-1300	Orientation	PR 401	Arthit
Aug 15	1300-1500	Genetic diseases and gene therapy	PR 401	Kanit
Aug 22	1300-1500	Liquid biopsy and cancer research	PR 401	Arthit
Aug 29	1300-1500	Animal models for advanced translational physiology	PR 401	Nattapon
Sep 5	1300-1500	Organ-on-chip technology: A micro physiological system	Zoom	Pimonrat
Sep 12	1300-1500	Physiology-based drug discovery	PR 401	Sunhapas
Sep 19	1300-1500	Physiology and athlete	PR 401	Ratchakrit
Sep 26	1300-1500	Translational physiology to market	PR 401	Narattaphol
Oct 10	1300-1500	Lab rotation-I (Cancer, stem cell, and neuroscience)-Gr. A	PR 415	SCAN
		Lab rotation-II (Bone and Calcium metabolism)-Gr. B	PR 405	COCAB
		Lab rotation-III (Drug Discovery)-Gr. C	PR 211	T-MED
Oct 17	1300-1500	Lab rotation-I (Cancer, stem cell, and neuroscience)-Gr. A	PR 211	T-MED
		Lab rotation-II (Bone and Calcium metabolism)-Gr. B	PR 415	SCAN
		Lab rotation-III (Drug Discovery)-Gr. C	PR 405	COCAB
Oct 31	1300-1500	Lab rotation-I (Cancer, stem cell, and neuroscience)-Gr. A	PR 405	COCAB
		Lab rotation-II (Bone and Calcium metabolism)-Gr. B	PR 211	T-MED
		Lab rotation-III (Drug Discovery)-Gr. C	PR 415	SCAN