Master of Science Program in Exercise Physiology
(International Program / Revised Program in 2023)

Name of Institution Mahidol University
Campus/Faculty/Department Faculty of Science, Department of Physiology

Section 1 General Information

1. Curriculum Name

Thai หลักสูตรวิทยาศาสตรมหาบัณฑิต สาขาวิชาสรีรวิทยาการออกกำลังกาย (หลักสูตรนานาชาติ)

English Master of Science Program in Exercise Physiology (International Program)

2. Name of Degree and Major

Full Title	Thai:	วิทยาศาสตรมหาบัณฑิต (สรีรวิทยาการออกกำลังกาย)
Abbreviation	Thai:	วท.ม. (สรีรวิทยาการออกกำลังกาย)
Full Title	English:	Master of Science (Exercise Physiology)
Abbreviation	English:	M.Sc. (Exercise Physiology)

3. Major Subjects (if any) -

4. Required Credits: not less than 36 credits

5. Curriculum Characteristics

5.1 **Curriculum type/model:** Master's degree
5.2 **Language:** English
5.3 **Recruitment:** Thai and international students
5.4 **Collaboration with Other Universities:** -
5.5 **Graduate Degrees Offered to the Graduates**: One degree

6. Curriculum Status and Curriculum Approval

6.1 Revised Program in 2023
6.2 Starting in semester 1, academic year 2023 onwards
6.3 Curriculum screening committee approved the program in its meeting 20/2021 August 16, 2021 and 46/2022 on October 17, 2022 and 6/2566 on April 12, 2023
6.4 The Mahidol University Council approved the program in its meeting 592 on May 24, 2023

7. Readiness to Implement/Promote the Curriculum

The curriculum from the program is readily implemented and promoted its quality and standard according to criteria set by Thai Qualification Framework for Higher Education 2022 in academic year 2025 (two years after implementation).

8. Career Opportunities of the Graduates

8.1 Exercise physiologist

8.2 Consultant in health and sport organizations

8.3 Researcher in exercise and sports-related fields

8.4 Fitness instructor and athletic trainer

9. Name, ID Number, Title and Degree of the Faculty in Charge of the Program

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
1.	x xxxx xxxxx xx x Assoc. Prof. Dr. Ratchakrit Srikuea	Ph.D. (Exercise Science) Mahidol University: 2010 M.Sc. (Sports Science) Mahidol University: 2004 B.Sc. (Sports Science) Mahidol University: 2000	Department of Physiology
2.	x xxxx xxxxx xx x Assoc. Prof. Dr. Vitoon Saengsirisuwan	Certified Exercise Physiologist, American College of Sports Medicine (ACSM): 2022 Ph.D. (Physiological Sciences) University of Arizona, USA: 2003 M.Sc. (Physiology of Exercise) Mahidol University: 1995 B.Sc. (Physical Therapy) Mahidol University: 1993	Department of Physiology
3.	xxxx xxxxx xx x Assoc. Prof. Dr. Tepmanas Bupha-Intr	Certified Strength and Conditioning Specialist, National Strength and Conditioning Association (NSCA): 2019	Department of Physiology

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
		Ph.D. (Physiology) Mahidol University: 2005 D.V.M. Chulalongkorn University: 1998	

10. Venue for Instruction

Department of Physiology, Faculty of Science, Mahidol University

11. External Factors to Be Considered in Curriculum Planning

11.1 Economic Situation/Development

According to National Plan of Economic and Social Development 12 (B.E. 2560 - 2564) and the Sustainable Development Goals (SDGs) that consists of inter-related areas (total 17 SDGs) to provide a framework for achieving the global impact. SDG3 is the main area that related to the impact on ensure healthy lives and promote well-being for all ages. To support this economic situation, exercise is a non-pharmaceutical intervention that helps improve health and quality of life. Effective exercise intervention requires specialist who is knowledgeable in exercise physiology to develop an exercise regimen in both non-clinical and clinical conditions. Therefore, developing of curriculum of Master's degree in Exercise Physiology will serve on this basis to apply exercise intervention to promote heath and well-being.

11.2 Social and Cultural Situation/Development

The current situation of Thailand and ASEAN countries changes from rural to urban society which affects lifestyle that led to an increase prevalence of non-communicable diseases, i.e., diabetes, hypertension, obesity, and etc. Moreover, Thai society are entering an aging society and there is a high probability that Thailand will have to bear an increasing cost of healthcare. Therefore, society should be aware of the benefits and methods of proper exercise in order to build a healthy Thai society.

12. The Effects Mentioned in No.11.1 and 11.2 on Curriculum Development and Relevance to the Missions of the University/Institution

12.1 Curriculum Development

Department of Physiology (Faculty of Science, Mahidol University) will develop the curriculum of Master's degree in Exercise Physiology by incorporate exercise physiology knowledge based on American College of Sports Medicine (ACSM) in order to develop the students to learn and work with international standard.

12.2 Relevance to the Missions of the University/Institution

This curriculum supports Mahidol university mission on exceling in health with integrity for the betterment of Thai society and the benefit of mankind.

13. Collaboration with Other Curricula of the University (if any)

13.1 Course(s) offered by other faculties/departments/ programs: None

13.2 Course(s) offered to other programs: None

13.3 Coordination: None

Section 2 Information of the Curriculum

1. Philosophy, Justification, and Objectives of the Curriculum

1.1 Philosophy and Justification of the Curriculum

To produce graduates (M.Sc.) who are knowledgeable in exercise physiology with international standard and make significant contribution to the development of the country in health and well-being.

1.2 Objectives of the Program

At the end of this Master's degree programme, graduates will achieve qualification in accordance with the Thai Qualifications Framework for Higher Education as follows:

1.2.1 Ability to demonstrate honesty, moral, and professional ethics

1.2.2 Ability to apply theoretical and practical aspects of exercise physiology

1.2.3 Ability to demonstrate responsibility, leadership and teamwork skills, and cooperate professionally with others

1.2.4 Ability to analyze, solve problem, synthesize new body of knowledge, and effectively communicate to the public

1.3 Program Learning Outcomes (PLOs)

1.3.1 Apply moral and professional ethics with work discipline and honesty on academic work and research integrity

1.3.2 Apply the concepts of exercise physiology to demonstrate how the body and organ systems respond to acute bout of exercise and exercise training

1.3.3 Demonstrate work responsibility, leadership, interpersonal relationship, and ability to work with others to implement physical fitness testing and classify exercise prescription with knowledge in exercise physiology

1.3.4 Execute physical fitness testing, design exercise prescription, and disseminate assignment or research work in exercise physiology for human health benefits to the public with effective communications

2. Plan for Development and Improvement

Plan for Development/Revision	Strategies	Evidence/Indexes
1. The curriculum is to be revised every five years based on the policy of Thai Commission of Higher Education	• Satisfaction of current/future students and stakeholder • Weak point analysis	1. Annually satisfactory evaluation report 2. Annually stakeholder survey report 3. Monthly program committees meeting report

Section 3 Educational Management System, Curriculum Implementation, and Structure

1. Educational Management System

1.1 System: Two semester credit system. One academic year consists of two regular semesters, each with not less than 15 weeks of study.

1.2 Summer Session Yes

1.3 Credit Equivalence to Semester System None

2. Curriculum Implementation

2.1 Teaching Schedule Weekdays

Semester 1 August – December

Semester 2 January – May

Summer Semester May – July

2.2 Qualifications of Prospective Students

2.2.1 Plan 1.2 Academic (Course work and research) Applicant

2.2.1.1 Holding a Bachelor's degree or equivalent in Sports Science, Physical Therapy, Medical Science, Public Health, Pharmacy, Nursing, Medical Technology, Veterinary Medicine, Nutrition, Biology, and Science-related degrees

2.2.1.2 Other requirements shall follow those that specified by the Faculty of Graduate Studies

2.2.1.3 Qualifications different from 2.2.1.2 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies.

2.2.2 Plan 2 Profession Applicant

2.2.2.1 Holding a Bachelor's degree or equivalent in Sports Science, Physical Therapy, Medical Science, Public Health, Pharmacy, Nursing, Medical Technology, Veterinary Medicine, Nutrition, Biology, and Science-related degrees

2.2.2.2 Have work experiences in health science/sports science at least 1 year in health/sports organization

2.2.2.3 Other requirements shall follow those that specified by the Faculty of Graduate Studies

2.2.2.4 Qualifications different from 2.2.2.3 may be considered by the Program Administrative Committee and the Dean of the Faculty of Graduate Studies.

2.3 Problems Encountered by New Students

2.3.1 Different academic backgrounds

2.3.2 English writing and communication skills

2.4 Strategies for Problem Solving/Limited Requirement in No. 2.3

Problems of New Students	Strategies for Problem Solving
1. Students enrolled in the program have bachelor's degree with different background levels 2. Students have English language issues for writing and communication.	1. Curriculum provides fundamental courses of Human Physiology (SCPS 689 Human Physiology 2(2-0-4)) during the first semester of first year study for student who had taken physiology course during Bachelor's degree less than 3 credits. 2. Students who have English language issues and not passed entry qualification of English proficiency by Faculty of Graduate Studies, they will take additional English training courses as appropriate if necessary.

2.5 Five-Year-Plan for Recruitment and Graduation of Students

Plan 1.2 Academic (Course work and research)

Academic Year	2023	2024	2025	2026	2027
1st	3	3	3	3	3
2nd	-	3	3	3	3
Cumulative numbers	3	6	6	6	6
Expected number of students graduated	-	3	3	3	3

Plan 2 Profession

Academic Year	2023	2024	2025	2026	2027
1st	2	2	2	2	2
2nd	-	2	2	2	2
Cumulative numbers	2	4	4	4	4
Expected number of students graduated	-	2	2	2	2

2.6 Budget based on the plan

Budget: The budget is from Master Program in Exercise Physiology, Faculty of Science, Mahidol University.

Plan 1.2 Academic (Course work and research)

Estimated income per student	**Baht**
Registration fee	
Tuition (24 Credits)	xx,xxx.xx
Thesis (12 Credits)	xx,xxx.xx
Field trip fee (SCPS 663)	xx,xxx.xx
Thesis research fee	xx,xxx.xx
Total income per student	xx,xxx.xx

Estimated expenses	
Variable expenses per student	
College/university allocation	xx,xxx.xx
Position allowance of thesis advisor and committee	xx,xxx.xx
Total variable expenses per student	xx,xxx.xx

Fixed expenses	
Program director payment	-
Program secretary payment	-
Staff salary	xx,xxx.xx
Teaching payment	xx,xxx.xx
Utility fee	xx,xxx.xx
Material fee	xx,xxx.xx
Equipment fee	xx,xxx.xx
Total fixed expenses	xx,xxx.xx

Number of students at break-even point	2.84	persons
Cost of students at break-even point	xx,xxx.xx	Baht
Expenses per student per academic year	xx,xxx.xx	Baht
(Study plan >2 Year)		
Expenses per student per academic year	106,453.33	Baht

Plan 2 Profession

Estimated income per student	**Baht**
Registration fee	

Tuition (30 Credits)	xx,xxx.xx
Independent Study (6 Credits)	xx,xxx.xx
Comprehensive examination fee	xx,xxx.xx
Field trip fee (SCPS 663, 664, 665)	xx,xxx.xx
Independent Study research fee	xx,xxx.xx
Total income per student	xx,xxx.xx

Estimated expenses

Variable expenses per student	
College/university allocation	xx,xxx.xx
Comprehensive examination fee	xx,xxx.xx
Position allowance of thesis advisor and committee	xx,xxx.xx
Total variable expenses per student	xx,xxx.xx

Fixed expenses

Program director payment	-
Program secretary payment	-
Staff salary	xx,xxx.xx
Teaching payment	xx,xxx.xx
Utility fee	xx,xxx.xx
Material fee	xx,xxx.xx
Equipment fee	xx,xxx.xx
Total fixed expenses	xx,xxx.xx

Number of students at break-even point	2.53	persons
Cost of students at break-even point	xx,xxx.xx	Baht
Expenses per student per academic year (Study plan >2 Year)	xx,xxx.xx	Baht
Expenses per student per academic year	103,783.33	Baht

2.7 Educational System: Classroom mode

2.8 Transfer of Credits, Courses and Cross University Registration (If any)

Credits transferring must be in compliance with Mahidol University's regulations on Graduate Studies.

3. Curriculum and Instructors

3.1 Curriculum

3.1.1 Number of credits (not less than) 36 credits

3.1.2 Fundamental course: Human Physiology (SCPS 689 Human Physiology 2(2-0-4)) Prerequiste course for student who had taken physiology course during Bachelor's degree less than 3 credits.

3.1.3 Curriculum Structure

The curriculum structure is set in compliance with The Announcement of The Commission on Higher Education Standard on the subject of Criteria and Standards of Graduate Studies B.E. 2565, Master's degree Plan 1.2 Academic (Course work and research) and Plan 2 Profession as below:

Plan 1.2 Academic (Course work and research)

1)	Required courses	16 credits
2)	Elective courses not less than	8 credits
3)	Thesis	12 credits
	Total not less than	36 credits

Plan 2 Profession

1)	Required courses	16 credits
2)	Elective courses not less than	14 credits
3)	Independent Study	6 credits
	Total not less than	36 credits

3.1.4 Courses in the curriculum

1) Required Courses 16 credits (For Plan 1.2 Academic (Course work and research) and Plan 2 Profession)

			Credits (lecture – practice – self-study)
SCPS	661	Physical Fitness Testing and Exercise Prescription	3(2-2-5)
วทสร	๖๖๑	การทดสอบสมรรถภาพร่างกายและการแนะนำการออกกำลังกาย	
SCPS	663	Practicum in Exercise for Health I	3(1-4-4)
วทสร	๖๖๓	การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๑	
SCPS	666	Neuromuscular Exercise Physiology	1(1-0-2)
วทสร	๖๖๖	สรีรวิทยาการออกกำลังกายของระบบประสาทและกล้ามเนื้อ	
SCPS	667	Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)
วทสร	๖๖๗	การตอบสนองของระบบหัวใจและระบบหายใจต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม	
SCPS	668	Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)
วทสร	๖๖๘	การตอบสนองทางเมแทบอลิซึมต่อการออกกำลังกายและความเครียด	

		จากสภาวะแวดล้อม	
SCPS	670	Professional Skills for Exercise Physiologist	2(2-0-4)
วทสร	๖๗๐	ทักษะทางวิชาชีพสำหรับนักสรีรวิทยาการออกกำลังกาย	
#SCPS	671	Foundations of Strength Training and Conditioning	1(0-2-1)
วทสร	๖๗๑	แนวทางและวิธีการฝึกซ้อมเพื่อเพิ่มความแข็งแรง	
SCPS	672	Seminar in Exercise Physiology	1(1-0-2)
วทสร	๖๗๒	สัมมนาทางสรีรวิทยาการออกกำลังกาย	
*SCPS	676	Physiology of Aging	1(1-0-2)
วทสร	๖๗๖	สรีรวิทยาการชราภาพ	
**SCPS	690	Biostatistics in Biomedical Science	2(2-0-4)
วทสร	๖๙๐	ชีวสถิติทางวิทยาศาสตร์ชีวการแพทย์	

Transfer from elective course

* Added courses

** New course

2) Elective Courses 8 credits (For Plan 1.2 Academic (Course work and research))

			Credits (lecture – practice – self-study)
SCPS	669	Clinical Exercise Physiology	2(2-0-4)
วทสร	๖๖๙	สรีรวิทยาการออกกำลังกายทางคลินิก	
**SCPS	684	Functional Anatomy and Kinesiology	2(2-0-4)
วทสร	๖๘๔	กายวิภาคศาสตร์และวิทยาศาสตร์การเคลื่อนไหว	
**SCPS	685	Nutrition for Health and Sport	2(2-0-4)
วทสร	๖๘๕	โภชนาการสำหรับสุขภาพและการกีฬา	
**SCPS	686	Exercise for Special Populations	2(2-0-4)
วทสร	๖๘๖	การออกกำลังกายสำหรับกลุ่มเฉพาะ	
**SCPS	687	Health Risk Appraisal in Fitness Facility	2(2-0-4)
วทสร	๖๘๗	การประเมินความเสี่ยงด้านสุขภาพในสถานที่ออกกำลังกาย	
**SCPS	688	Current Topics in Exercise Science	2(2-0-4)
วทสร	๖๘๘	หัวข้อปัจจุบันทางวิทยาศาสตร์การออกกำลังกาย	
**SCPS	689	Human Physiology	2(2-0-4)
วทสร	๖๘๙	สรีรวิทยาในมนุษย์	
**SCPS	801	Health Risks and Exercise Management in the Elderly	2(2-0-4)
วทสร	๘๐๑	ความเสี่ยงด้านสุขภาพและการจัดการการออกกำลังกายในผู้สูงอายุ	

**New courses

3) Elective Courses 14 credits (For Plan 2 Profession)

		Credits (lecture – practice – self-study)
**SCPS 664	Practicum in Exercise for Health II	2(0-4-2)
วทสร ๖๖๔	การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๒	
**SCPS 665	Practicum in Exercise for Health III	2(0-4-2)
วทสร ๖๖๕	การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๓	
SCPS 669	Clinical Exercise Physiology	2(2-0-4)
วทสร ๖๖๙	สรีรวิทยาการออกกำลังกายทางคลินิก	
**SCPS 684	Functional Anatomy and Kinesiology	2(2-0-4)
วทสร ๖๘๔	กายวิภาคศาสตร์และวิทยาศาสตร์การเคลื่อนไหว	
**SCPS 685	Nutrition for Health and Sport	2(2-0-4)
วทสร ๖๘๕	โภชนาการสำหรับสุขภาพและการกีฬา	
**SCPS 686	Exercise for Special Populations	2(2-0-4)
วทสร ๖๘๖	การออกกำลังกายสำหรับกลุ่มเฉพาะ	
**SCPS 687	Health Risk Appraisal in Fitness Facility	2(2-0-4)
วทสร ๖๘๗	การประเมินความเสี่ยงด้านสุขภาพในสถานที่ออกกำลังกาย	
**SCPS 688	Current Topics in Exercise Science	2(2-0-4)
วทสร ๖๘๘	หัวข้อปัจจุบันทางวิทยาศาสตร์การออกกำลังกาย	
**SCPS 689	Human Physiology	2(2-0-4)
วทสร ๖๘๙	สรีรวิทยาในมนุษย์	
**SCPS 801	Health Risks and Exercise Management in the Elderly	2(2-0-4)
วทสร ๘๐๑	ความเสี่ยงด้านสุขภาพและการจัดการการออกกำลังกายในผู้สูงอายุ	

**New courses

In addition to the elective courses mentioned above, a student may register other courses in international program offered by other faculties equivalent to Graduate studies, Mahidol University or the ones offered by other universities according to the student's interest with the approval of the curriculum committee or the advisor.

4) Thesis 12 credits (For Plan 1.2 Academic (Course work and research))

		Credits (lecture – practice – self-study)
SCPS 698	Thesis	12(0-36-0)
วทสร ๖๙๘	วิทยานิพนธ์	

5) Independent Study 6 credits (For Plan 2 Profession)

Credits (lecture – practice – self-study)

SCPS 696 Independent Study 6(0-18-0)

วทสร ๖๙๖ การค้นคว้าอิสระ

3.1.5 Research Project of the Program

Guidelines for conducting a research project are as follows:

(1) Exercise program design to promote health and well-being that alleviate non-communicable diseases, osteoporosis, sarcopenia, etc.

(2) Exercise-induced adaptation of tissue plasticity to improve physical fitness and recovery after injury

(3) Acute and chronic responses of exercise to environmental stress

3.1.6 Definition of Course Codes

Two main alphabets are defined as follows:

The first two alphabets are abbreviation of the faculty offering the course.

SC means Faculty of Science

The latter two alphabets are abbreviation of the department or the major offering the course.

PS means Department of Physiology

3 digits of number are 6XX indicate that the courses are in the graduate study level.

3.1.7 Study Plan

For Plan 1.2 Academic (Course work and research)

Year	Semester 1	Semester 2
	Summer SCPS 689 Human Physiology 2(2-0-4) **(Fundamental course) Total 2 credits**	
1	SCPS 661 Physical Fitness Testing and Exercise Prescription 3(2-2-5) SCPS 666 Neuromuscular Exercise Physiology 1(1-0-2) SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress 1(1-0-2) SCPS 668 Metabolic Responses to Exercise and Environmental Stress 1(1-0-2) SCPS 670 Professional Skills for Exercise Physiologist 2(2-0-4) Elective Course 4 Credits **Total 12 Credits**	SCPS 671 Foundations of Strength Training and Conditioning 1(0-2-1) SCPS 672 Seminar in Exercise Physiology 1(1-0-2) SCPS 676 Physiology of Aging 1(1-0-2) SCPS 690 Biostatistics in Biomedical Science 2(2-0-4) Elective Courses 4 Credits **Total 9 Credits**

	Summer SCPS 663 Practicum in Exercise for Health I 3(1-4-4) **Total 3 credits**	
2	SCPS 698 Thesis 6(0-18-0) **Total 6 Credits**	SCPS 698 Thesis 6(0-18-0) **Total 6 Credits**

For Plan 2 Profession

Year	Semester 1	Semester 2
	Summer SCPS 689 Human Physiology 2(2-0-4) **(Fundamental course) Total 2 credits**	
1	SCPS 661 Physical Fitness Testing and Exercise Prescription 3(2-2-5) SCPS 666 Neuromuscular Exercise Physiology 1(1-0-2) SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress 1(1-0-2) SCPS 668 Metabolic Responses to Exercise and Environmental Stress 1(1-0-2) SCPS 670 Professional Skills for Exercise Physiologist 2(2-0-4) Elective Course 4 Credits **Total 12 Credits**	SCPS 671 Foundations of Strength Training and Conditioning 1(0-2-1) SCPS 672 Seminar in Exercise Physiology 1(1-0-2) SCPS 676 Physiology of Aging 1(1-0-2) SCPS 690 Biostatistics in Biomedical Science 2(2-0-4) Elective Courses 4 Credits **Total 9 Credits**
	Summer SCPS 663 Practicum in Exercise for Health I 3(1-4-4) **Total 3 credits**	
2	SCPS 696 Independent Study 6(0-18-0) Elective Courses 6 Credits **Total 12 Credits**	-

3.1.8 Course Description

Please see Appendix A.

3.2 Name, I.D. Number, Title and Degree of Instructors

3.2.1 Full time instructors of the curriculum (Please see Appendix B)

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
1	x xxxx xxxxx xx x Prof. Dr. Jonggonnee Wattanapermpool	Ph.D. (Physiology and Biophysics) University of Illinois at Chicago, USA: 1994 M.Sc. (Physiology)	Department of Physiology

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
		Mahidol University: 1985 B.Sc. (Radiological Technology) Mahidol University: 1983	
2	x xxxx xxxxx xx x Prof. Dr. Narattaphol Charoenphandhu, MD.	M.D. (Medical) Mahidol University: 2004 Ph.D. (Physiology) Mahidol University: 2001 B.Sc. (Medical Science) Mahidol University: 1999	Department of Physiology
3	x xxxx xxxxx xx x Assoc. Prof. Dr. Arthit Chairoungdua	Ph.D. (Medial Science) Kyorin University School of Medicine, Japan: 2003 M.Sc. (Toxicology) Mahidol University: 1998 B.N.S. (Nursing Science) Khon Kaen University: 1993	Department of Physiology
4	x xxxx xxxxx xx x Assoc. Prof. Dr. Jittima Weerachayaphorn	Ph.D. (Cellular Physiology and Molecular Biophysics) University of Texas Medical Branch at Galveston, USA: 2007 M.Sc. (Physiology) Mahidol University: 2001 B.N.S. (Nursing Science) Mahidol University: 1995	Department of Physiology
5	x xxxx xxxxx xx x Assoc. Prof. Dr. Sunhapas Soodvilai	Ph.D. (Physiology) Mahidol University: 2005 B.Pharm (Pharmacy) Ubon Ratchathani University: 2000	Department of Physiology
6	x xxxx xxxxx xx x Assoc. Prof. Dr. Tepmanas Bupha-Intr	Certified Strength and Conditioning Specialist, National Strength and Conditioning Association (NSCA): 2019 Ph.D. (Physiology) Mahidol University: 2005 D.V.M.	Department of Physiology

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
		Chulalongkorn University: 1998	
7	x xxxx xxxxx xx x Assoc. Prof. Dr. Vitoon Saengsirisuwan	Certified Exercise Physiologist, American College of Sports Medicine (ACSM): 2022 Ph.D. (Physiological Sciences) University of Arizona, USA: 2003 M.Sc. (Exercise Physiology) Mahidol University: 1995 B.Sc. (Physical Therapy) Mahidol University: 1993	Department of Physiology
8	x xxxx xxxxx xx x Assoc. Prof. Dr. Ratchakrit Srikuea	Ph.D. (Exercise Science) Mahidol University: 2010 M.Sc. (Sports Science) Mahidol University: 2004 B.Sc. (Sports Science) Mahidol University: 2000	Department of Physiology
9	x xxxx xxxxx xx x Asst. Prof. Dr. Nattapon Panupinthu, M.D.	M.D. (Medical) Mahidol University: 2018 Ph.D. (Physiology) The University of Western Ontario, Canada: 2008 B.Sc. (Medical Science) Mahidol University: 2001	Department of Physiology
10	x xxxx xxxxx xx x Lect. Kanit Bhukhai, Ph.D.	Ph.D. (Biotherapies and Biotechnologies) Sorbonne Paris Cité University - Paris Diderot University (Paris 7): 2015 M.Sc. (Physiology) Mahidol University: 2011 B.Sc. (Public Health) Mahidol University: 2009	Department of Physiology
11	x xxxx xxxxx xx x Lect. Dr. Ioannis D. Papadimitriou	Ph.D. (Exercise Physiology) Victoria University, Australia: 2018 M.Sc. (Exercise and Health) Aristotle University, Greece: 2009 B.Sc. (Physical Education and Sports Science)	Department of Physiology

No.	Identification Card Number Academic position - Name – Surname	Degree (Field of Study) University: Year of graduate	Department
		Aristotle University, Greece: 2002	
12	x xxxx xxxxx xx x Lect. Dr. Nittaya Boonmuen	Ph.D. (Physiology) Mahidol University: 2016 B.Sc. (Physical Therapy) Chiang Mai University: 2010	Department of Physiology
13	x xxxx xxxxx xx x Lect. Dr. Ratchaneevan Aeimlapa	Ph.D. (Physiology) Mahidol University: 2018 M.Sc. (Physiology) Mahidol University: 2014 B.Sc. (Biology) Mahidol University: 2011	Department of Physiology
14	x xxxx xxxxx xx x Lect. Dr. Suwimol Tangtrongsup	Ph.D. (Clinical Sciences) Colorado State University, USA: 2017 M.Sc. (Physiology) Mahidol University: 2003 B.Sc. (Biology) Mahidol University: 2000	Department of Physiology

3.2.3 Part time instructors

Guest lecturers will be invited to teach for the specific course contents.

4. Details of Practicum (if any)

Students undergo internship under supervision of professional instructors in organization and corporates that relates with sports and exercise for health.

4.1 Program Learning Outcomes of Field Experience

4.1.1 Demonstrate client interview and history taking for pre-exercise screening to assess the readiness of physical exertion.

4.1.2 Develop skill for exercise physiologist by implementing physical fitness assessment, exercise prescription & consultation, health promotion and communication with client under supervision.

4.2 Time Frame

Summer Semester Year 1 (SCPS 663 for / Plan 1 Academic (Course work and research) & Plan 2 Profession) / Semester 1 Year 2 (SCPS 664 and SCPS 665 for Plan 2 Profession only)

4.3 Class Schedule

Four weeks of weekdays

5. Thesis and Independent Study Requirement

5.1 Short Description

Thesis and Independent Study must be relevant to knowledge of exercise physiology and related fields. It must be submitted in accordance with the format and duration specified by the curriculum plan.

5.2 Standard Learning Outcomes

Students can apply the knowledge about exercise physiology and related fields to create a research question and disseminate research results ethically along with academic principles to the public.

5.3 Time Frame

Semester 1 Academic Year 2

5.4 Number of credits Thesis (12 credits)/ Independent Study (6 credits)

5.5 Preparation

Students register the thesis/Independent Study following the curriculum plan. Students, in consultation with thesis/Independent Study advisor, ask for the approval for the establishment of proposal advisor via Online Thesis System of the Faculty of Graduate Studies. Students who develop a research project-based animals or humans need to submit the research protocol for approval before starting the thesis/Independent Study project.

5.6 Evaluation Process

For thesis/Independent Study progress evaluation, students will report the progress of thesis/Independent Study by presenting an oral research progress at the department's progress reports. For graduation processes, the final oral examination is systematically evaluated by the program committees appointed by Faculty of Graduate Studies, Mahidol University. Student’s thesis work or part(s) of the thesis must be published in academic journal at national or international levels that the quality of journals has been approved by Office of the Higher Education Commission on Academic Journal Consideration Criteria for Disseminating Academic Output.

Section 4 Learning Outcome, Teaching Strategies and Evaluation

1. Development of Student's Specific Qualifications

Special Characteristics	Teaching Strategies or Student Activities
1. Transformative Eduation project 2. Teamwork and Communication skills	1. Extracurricular activities organized by the Exercise Physiology program, i.e., MUSC Health Life project 2. Extracurricular activities organized by: 2.1 Department Special seminars, physiology research forums, and student competency development. 2.2 Faculty of Science, Mahidol University MU open house, National science and technology fair, and Science kids (national children's day)

2. Development of Learning Outcome in Each Objective

Expected Outcome	Teaching Strategies	Evaluation Strategies
1. Ethics 1) Perform professional morality and ethics in academic work and research 2) Be honest on conducting, writing, and presenting	1) Group/Individual assignment 2) Laboratory report/ Project assignment 3) Thesis/Independent Study	1) Assess behavior according to morality and ethics 2) Completion of assigned tasks on time without plagiarism /cheating 3) Assess responsibility, quality of research, organization, interpretation, and knowledge transfer
2. Knowledge 1) Understand knowledge in exercise physiology 2) Able to design exercise prescription for good health and well-being based on exercise physiology knowledge	1) Lecture 2) Laboratory 3) Case study 4) Seminar 5) Practicum	1) Written exam 2) Hand-on demonstration 3) Assess knowledge, class participation, and discussion 4) Assess quality of presentation, organization, interpretation, and question handling 5) Completion of assigned project and presentation

3. Skills 1) Be responsible for the assigned work as individual and team 2) Ability to work as a team with leadership and human relationship	1) Group participation 2) Group discussion 3) Group Assignment 4) Practicum	1) Behavioral observation 2) Assess knowledge and class participation 3) Assess responsibility, teamwork, leadership, and human relationship 4) Completion of assigned project and presentation
4. Character 1) Able to analyze and criticize the problem to reach the conclusion systematically 2) Demonstrate the knowledge in exercise physiology, synthesize new body of knowledge for people's health and well-being, and effectively communicate to the public	1) Case study 2) Seminar 3) Thesis/Independent Study	1) Assess knowledge, class participation, and discussion 2) Assess quality of presentation, organization, interpretation, and question handling 3) Assess responsibility, quality of research, organization, interpretation, and knowledge transfer

3. Curriculum Mapping

Please see Appendix C**.**

Section 5 Criteria for Student Evaluation

1. Grading System

Grading system and graduation shall be complied with the criteria stated in the regulations of Faculty of Graduate Studies, Mahidol University.

2. Evaluation Process for the Learning Outcome of Students

2.1 Provide an evaluating process from both students and curriculum committees toward each course based on the learning outcomes

2.2 Provide student's learning outcome from overall curriculum evaluation during Department of Physiology annual strategic planning

3. Graduation Requirement

3.1 Plan 1.2 Academic (Course work and research)

1) Students must complete their courses as stated in the curriculum with a minimum CUM-GPA of 3.00.

2) Propose thesis to the committee appointed by the Faculty of Graduate Studies and to the public and pass oral thesis examination as the final stage

3) The complete or part of the thesis has to be published as a review article, accepted as an innovation, acknowledged as a creative product, or accepted as an academic article that can be searched

4) Other requirements shall follow those that specified by the Faculty of Graduate Studie

3.2 Plan 2 Profession

1) Students must complete their courses as stated in the curriculum with a minimum CUM-GPA of 3.00.

2) Students must pass the Comprehensive Examination following Regulations of Mahidol University on Graduate Studies.

3) Students must present their Independent Study and pass the defense examination by following Regulations of Mahidol University on Faculty Graduate Studies.

4) Other requirements shall follow those that specified by the Faculty of Graduate Studies

Section 6 Faculty Development

1. The Orientation for New Faculty Members

1.1 New full-time faculty members are trained to acknowledge and understand the curriculum.

1.2 Program director explain the program information including objective of the program, program learning outcomes, and teaching/evaluation strategies to the new faculty members.

1.3 New faculty members are informed about the thesis advisory processes according to the regulations of Faculty of Graduate Studies, Mahidol University.

2. Skill and Knowledge Development for New Faculty Members

2.1 Skills Development in Teaching and Evaluation

2.1.1 Support on attending the activities organized by MU's class on teaching performance development.

2.1.2 Encourage on participation in teaching and learning development activities organized by both internal and external agencies.

2.2 Other Academic and Professional Skill Development

2.2.1 Support for developmental needs, i.e., attend professional knowledge training and seminar at national and international levels

2.2.2 Provide partial funding support for research work and presentation at academic conferences

2.2.3 Encourage on attend training to expand their knowledge and develop other skills such as writing research project for funding and publication

Section 7 Quality Assurance

1. Regulatory Standard

Courses in the curriculum are organized according to the Thai Qualification Framework for Higher Education. Course syllabus and lesson plans are provided for all courses along with evaluation after the end of the course to improve teaching and learning experiences of the students. In addition, there is a regular meeting to plan teaching and learning strategies for all courses prior to an opening of the semester.

2. Graduate Students

The graduate students of exercise physiology program are studied in the curriculum that assure to meet the high quality of education and international standard. The development of curriculum and courses are relied on both Thai Qualification Framework for Higher Education and the accredited international organization (American College of Sports Medicine, ACSM).

3. Students

Student admission, enrollment, and graduation are in accordance with the regulations of Faculty of Graduate Studies, Mahidol University (https://graduate.mahidol.ac.th/inter/).

4. Instructors

The qualifications of instructors are required to meet the criteria of Thai Qualification Framework for Higher Education 2022. In addition, instructor ability and competency in the curriculum must contribute and fulfill the curriculum planning and development. For course organization, the instructor is assigned to responsible for the course contents including course schedule, syllabus, and evaluation methods. Course progress is reported as a regular agenda in the department's meeting. Instructors who participate in the course organization providing opinions with the teaching and learning issues if presented to assure that the course meets the quality of higher education.

5. Program, Study, and Student Assessment

The qualifications of the curriculum meet the criteria of Thai Qualification Framework for Higher Education 2022. Student assessment during study in the program is aligned with Program Learning Outcomes (PLOs). Rubric assessment system is applied in the course contents related to discussion and presentation. Course and instructor evaluations by students are monitored by the course coordinator and program director to use for improvement of courses and teaching quality. Program director reports the ongoing activities and student progress in the curriculum on a monthly basis. Additionally, student satisfaction of the curriculum is evaluated annually during Department of Physiology Strategic Planning to use this information for the curriculum development.

6. Learning Support

The curriculum provides the laboratory instruments to support the learning outcomes of students related to exercise physiology knowledge and research. Additionally, the central library of Faculty of Science, Mahidol University (Stang Mongkolsuk Library) has an availability of the textbook and research publications that students can access to support their study and research.

7. Key Performance Indicators

The Exercise Physiology program, Department of Physiology divides key performance based on the curriculum that meets the standards of Thai Qualifications Framework following conditions: (1) the compulsory performance indicators (numbers 1-5) must pass beyond expectations and (2) the total number of performance indicators must reach their goal by no less than 80 percent each year. The Key Performance Indicators are as follows:

Key Performance Indicators	Academic Year				
	2023	2024	2025	2026	2027
1. At least 80% of all full-time instructors in each program have to participate in meetings that set up plans to evaluate and revise the curriculum.	✓	✓	✓	✓	✓
2. The program must have the details of the curriculum according to TQF2 which is associated with the Thai Qualifications Framework or the standards of the program (if any)	✓	✓	✓	✓	✓
3. The program must have course specifications and field experience specifications (if any) according to TQF3 and TQF4 before the beginning of each trimester	✓	✓	✓	✓	✓
4. Instructors must produce course reports and file experience reports (if any) according to TQF5 and TQF6 within 30 days after the end of the trimester.	✓	✓	✓	✓	✓
5. Instructors must produce program reports according to TQF7 within 60 days after the end of the academic year	✓	✓	✓	✓	✓
6. Instructors must revise the grading of students according to learning standards indicated in TQF3 and TQF4 (if any) for at least 25 percent of courses that are offered each academic year.	✓	✓	✓	✓	✓

Key Performance Indicators	Academic Year				
	2023	2024	2025	2026	2027
7. Instructors must assess the development and/or improvement of teaching methods, teaching techniques or the grading system from the evaluation results in TQF 7 of the previous year.	✓	✓	✓	✓	✓
8. Every new instructor (if any) has to participate in the orientation and receive adequate information on the college's teaching requirements.	✓	✓	✓	✓	✓
9. Full-time instructors must demonstrate academic and/ or profession improvement at least once a year.	✓	✓	✓	✓	✓
10. The number of supporting staff (if any) who demonstrate academic and/ or professional improvement by at least 50 percent each year.	✓	✓	✓	✓	✓
11. The level of satisfaction from the previous year's students and new graduates toward curriculum quality, with an average score of at least 3.5 out of 5	✓	✓	✓	✓	✓
12. The level of satisfaction from employers of new graduates with an average score of at least 3.5 out of 5	-	-	✓	✓	✓
13. Instructors have been evaluated by students after teaching at 100 percent.	✓	✓	✓	✓	✓
14. The number of accepted students in accordance with the program's plan.	-	-	-	✓	✓
15. Graduates who get a job with a starting rate salary not lower than the rate stated by the Office of the Civil Service Commission (OCSC).	-	-	✓	✓	✓
Total key performance indicators (items) for each year	**12**	**12**	**14**	**15**	**15**
Required performance indicators (items)	**5**	**5**	**5**	**5**	**5**
Performance indicators that need to pass expectations	**10**	**10**	**10**	**10**	**10**

Section 8 Evaluation and Improvement of the Curriculum Implementation

1. Evaluation on the Teaching Efficiency

1.1 Evaluation of Teaching Strategies

1.1.1 Analysis from student's evaluation towards courses and instructors

1.1.2 Analysis from the faculty meeting to exchange ideas or comments

1.1.3 Analysis from the annual department strategic planning

1.2 Evaluation of Instructor's Skills in Using Teaching Strategies

1.2.1 Analysis student's evaluation towards courses and instructors

1.2.2 Evaluation from senior instructors

2. Overall Evaluation of the Curriculum

2.1 Survey instructor's opinions toward students and vice versa

2.2 Curriculum evaluation from external expertise

3. Evaluation of Curriculum Implementation in Accordance with the Curriculum

Evaluation is made annually by the chairman and instructors according to the key performance indicators of section 7, item 7. The curriculum committee must comprise 3 persons: 1) Program director, 2) Curriculum committee, and 3) Curriculum secretariat. The criteria of curriculum revision are **Good**.

"Fair" means the program does not cover the first 10 Key Performance Indicators,

"Good" means the program shows all first 10 Key Performance Indicators,

"Excellent" means the program has all Key Performance Indicators.

4. Review of the Evaluation and Plans for Improvement

4.1 Collecting all information, advices, and evaluations of the newly graduates, stakeholders, and experts

4.2 Review and analyze the above information by the faculty member in-charge of the program

4.3 Presenting the improvement plan for the program

Appendix A
Course Description

Credits (lecture – practice – self-study)

1) Required Courses

SCPS 661 Physical Fitness Testing and Exercise Prescription 3(2-2-5)

วทสร ๖๖๑ การทดสอบสมรรถภาพร่างกายและการกำหนดการออกกำลังกาย

Principles and approaches for the measurement of physical fitness; the use of exercise physiology equipments; anthropometry and determination of body fat and muscle compositions; physical fitness testing using laboratory- and field-based tests; physical fitness of neuromuscular and cardiopulmonary functions; principles of exercise prescription to improve physical fitness components

หลักการและวิธีการทดสอบสมรรถภาพทางกาย การใช้เครื่องมือต่าง ๆ เกี่ยวกับสรีรวิทยาการออกกำลังกาย การวัดขนาดรูปร่างและการหาค่าองค์ประกอบของร่างกายส่วนที่เป็นไขมันและกล้ามเนื้อ การทดสอบสมรรถภาพทางกายด้วยวิธีการทางห้องปฏิบัติการและภาคสนาม สมรรถภาพของระบบประสาทและกล้ามเนื้อ ระบบไหลเวียนเลือดและระบบหายใจ การกำหนดรูปแบบการออกกำลังกายเพื่อพัฒนาสมรรถภาพของร่างกายในด้านต่าง ๆ

SCPS 663 Practicum in Exercise for Health I 3(1-4-4)

วทสร ๖๖๓ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๑

Internship under supervision in organization and corporates related with sports and exercise for health

การฝึกปฏิบัติภายใต้การควบคุมโดยอาจารย์พิเศษในองค์กรและสถานประกอบการที่เกี่ยวข้องกับการกีฬาและการออกกำลังกายเพื่อสุขภาพ

SCPS 666 Neuromuscular Exercise Physiology 1(1-0-2)

วทสร ๖๖๖ สรีรวิทยาการออกกำลังกายของระบบประสาทและกล้ามเนื้อ

The neural control of the body movement; mechanism of muscle contraction and its regulation; adaptations of skeletal muscle to weight training, disuse, aging and injury

การควบคุมการเคลื่อนไหวของร่างกายโดยระบบประสาท กลไกการหดตัวของกล้ามเนื้อและการควบคุมการปรับตัวของกล้ามเนื้อลายต่อการฝึกออกกำลังกายโดยใช้น้ำหนัก การไม่ใช้งาน สภาวะชราภาพ และการบาดเจ็บ

SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress 1(1-0-2)
วทสร ๖๖๗ การตอบสนองของระบบหัวใจและระบบหายใจต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม

Cardiovascular function during resting and exercise; respiratory function during resting and exercise; cellular respiration during resting and exercise; effect of exercise training on cardiovascular and respiratory functions; exercise in patients with cardiovascular and respiratory disorders

การทำงานของหัวใจและหลอดเลือดขณะพักและขณะออกกำลังกาย การทำงานของระบบหายใจขณะพักและขณะออกกำลังกาย การหายใจระดับเซลล์ขณะพักและขณะออกกำลังกาย ผลของการฝึกออกกำลังกายต่อการทำงานของหัวใจและหลอดเลือดและการหายใจ การออกกำลังกายในผู้ป่วยที่มีความผิดปกติของระบบหัวใจและหลอดเลือด และระบบหายใจ

SCPS 668 Metabolic Responses to Exercise and Environmental Stress 1(1-0-2)
วทสร ๖๖๘ การตอบสนองทางเมแทบอลิซึมต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม

Mechanisms underlying the metabolic and biochemical responses to acute exercise and adaptations with chronic exercise and environmental stress; regulation of body temperature and body fluid during exercise and environmental stress; body response to high altitude

กลไกการตอบสนองทางเมแทบอลิซึมและชีวเคมีต่อการออกกำลังกายแบบเฉียบพลันและการปรับตัวต่อการออกกำลังกายแบบต่อเนื่องและความเครียดจากสภาวะแวดล้อม การควบคุมอุณหภูมิและของเหลวในร่างกายขณะออกกำลังกายและขณะเผชิญความเครียดจากสภาวะแวดล้อม การตอบสนองของร่างกายต่อการเปลี่ยนระดับความสูงของสภาพแวดล้อม

SCPS 670 Professional Skills for Exercise Physiologist 2(2-0-4)
วทสร ๖๗๐ ทักษะทางวิชาชีพสำหรับนักสรีรวิทยาการออกกำลังกาย

Review and analyze scientific literatures regarding exercise physiology; moral and ethical of exercise physiologist; ethical regulation in human research; doping control in sport competition; exercise counseling and behavioral strategies; management of fitness facility

การสืบค้นและวิเคราะห์ข้อมูลทางด้านสรีรวิทยาการออกกำลังกาย คุณธรรมและจริยธรรมของนักสรีรวิทยาการออกกำลังกาย จริยธรรมของการวิจัยในมนุษย์ การควบคุมสารต้องห้ามในการแข่งขันกีฬา แนวทางการให้คำปรึกษาและดูแลพฤติกรรมการออกกำลังกาย การจัดการสถานออกกำลังกาย

SCPS 671 Foundations of Strength Training and Conditioning 1(0-2-1)
วทสร ๖๗๑ แนวทางและวิธีการฝึกซ้อมเพื่อเพิ่มความแข็งแรง

Resistance exercise training program; program design to improve strength, flexibility, balance, and agility

การกำหนดวิธีการออกกำลังกายแบบใช้แรงต้าน การออกแบบวิธีการออกกำลังกายเพื่อเพิ่มความแข็งแรง ความอ่อนตัว สมดุลการทรงตัว และความคล่องแคล่ว

SCPS 672 Seminar in Exercise Physiology 1(1-0-2)

วทสร ๖๗๒ สัมมนาทางสรีรวิทยาการออกกำลังกาย

Ethics and techniques in handling original research articles in exercise physiology: presenting the research rationale and experimental approach, analyzing, critiquing and presenting key findings; techniques in handling discussion and questions.

จริยธรรมและเทคนิคในการวิเคราะห์ วิจารณ์ และนำเสนอสาระสำคัญ ที่มาของประเด็นปัญหา วิธีการวิจัย ผลการวิจัย จากบทความวิจัยทางสรีรวิทยาการออกกำลังกาย เทคนิคการอภิปรายให้ข้อคิดเห็น และตอบข้อซักถาม

SCPS 676 Physiology of Aging 1(1-0-2)

วทสร ๖๗๖ สรีรวิทยาการชราภาพ

Biological principles and theories that underlie the phenomena of human aging; normal aging processes; aged-related health conditions; exercise training and prescription for elderly; exercise instrument and physical fitness testing in elderly

หลักการและทฤษฎีทางชีววิทยาที่เป็นพื้นฐานของการชราภาพในมนุษย์ กระบวนการการชราภาพทั่วไป การชราภาพกับสภาวะสุขภาพ ผลของการออกกำลังกายและแบบฝึกการออกกำลังกายในผู้สูงอายุ อุปกรณ์การออกกำลังกายและการวัดสมรรถภาพทางกายในผู้สูงอายุ

SCPS 690 Biostatistics in Biomedical Science 2(2-0-4)

วทสร ๖๙๐ ชีวสถิติทางวิทยาศาสตร์ชีวการแพทย์

Experimental design; hypothesis test; probability distribution; analysis of variance; regression and correlation; non-parametric statistic. SPSS statistic program; power analysis calculation

การออกแบบการทดลอง การทดสอบสมมติฐาน การกระจายของโอกาสความน่าจะเป็น การวิเคราะห์ความแปรปรวน การวิเคราะห์การถดถอยและการวิเคราะห์สหสัมพันธ์ สถิติแบบนอนพาราเมตริก โปรแกรมการวิเคราะห์ทางสถิติเอสพีเอสเอส การคำนวณจำนวนตัวอย่างในการทดสอบ

Credits (lecture – practice – self-study)

2) Elective Courses

SCPS 664 Practicum in Exercise for Health II 2(0-4-2)

วทสร ๖๖๔ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๒

Skill development for exercise physiologist in organization and corporates related with exercise for health; learning client interview and history taking, physical fitness assessment, exercise prescription & consultation, health promotion and communication with client under supervision

การพัฒนาทักษะของนักสรีรวิทยาการออกกำลังกายในองค์กรและสถานประกอบการที่เกี่ยวข้องกับการออกกำลังกายเพื่อสุขภาพ เรียนรู้วิธีการซักประวัติ การตรวจประเมินสมรรถภาพร่างกาย การให้คำแนะนำวิธีการออกกำลังกาย การส่งเสริมสุขภาพ การสร้างสัมพันธภาพกับผู้รับบริการ ภายใต้การควบคุมโดยอาจารย์พิเศษ

SCPS 665 Practicum in Exercise for Health III 2(0-4-2)

วทสร ๖๖๕ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๓

Skill development for exercise physiologist in organization and corporates related with sports; practice on client interview and history taking, physical fitness assessment, exercise prescription & consultation, health promotion and communication with client under supervision

การพัฒนาทักษะของนักสรีรวิทยาการออกกำลังกายในองค์กรและสถานประกอบการที่เกี่ยวข้องกับการกีฬา ฝึกฝนวิธีการซักประวัติ การตรวจประเมินสมรรถภาพร่างกาย การให้คำแนะนำวิธีการออกกำลังกาย การส่งเสริมสุขภาพ การสร้างสัมพันธภาพกับผู้รับบริการ ภายใต้การควบคุมโดยอาจารย์พิเศษ

SCPS 669 Clinical Exercise Physiology 2(2-0-4)

วทสร ๖๖๙ สรีรวิทยาการออกกำลังกายทางคลินิก

Pathophysiology, risk stratification, contraindications and exercise prescription guidelines for individuals with cardiovascular diseases, pulmonary diseases, obesity and metabolic syndrome, diabetes mellitus, non-communicable diseases, hypertension, musculoskeletal injuries, osteoporosis, and physiology of aging

พยาธิสรีรวิทยา ระดับความเสี่ยง ข้อควรระวัง และแนวทางการกำหนดวิธีการออกกำลังกายในกลุ่มผู้ป่วยโรคหัวใจและหลอดเลือด โรคปอด โรคอ้วนลงพุง เบาหวาน โรคไม่ติดต่อเรื้อรัง ความดันโลหิตสูง ภาวะบาดเจ็บของกล้ามเนื้อและกระดูก กระดูกพรุน และสรีรวิทยาของผู้สูงอายุ

SCPS 684 Functional Anatomy and Kinesiology 2(2-0-4)

วทสร ๖๘๔ กายวิภาคศาสตร์และวิทยาศาสตร์การเคลื่อนไหว

The relationship between structures of bones, ligaments, and joint capsules and dynamic functions of muscles; the muscle attachments, actions, and innervations; the lever system and body movement; the methods for creating movement of the neck and torso, upper and lower extremities

ความสัมพันธ์ระหว่างโครงสร้างของกระดูก เอ็นยึดระหว่างกระดูก ผนังหุ้มข้อต่อ และการทำงานของกล้ามเนื้อในการเคลื่อนไหว จุดเกาะของกล้ามเนื้อ เส้นประสาท ระบบคานและการเคลื่อนไหว ขั้นตอนการสร้างการเคลื่อนไหวของคอ ลำตัว รยางค์ส่วนบนและล่าง

SCPS 685 Nutrition for Health and Sport 2(2-0-4)

วทสร ๖๘๕ โภชนาการสำหรับสุขภาพและการกีฬา

Biochemistry of macronutrients and micronutrients; food absorption and metabolism; fuel food, water, healthy and sport drinks; nutrition in weight control; nutrition in muscle gain and strength; nutrition in endurance sport; nutrition ergonomic aids; nutrition for special population

ชีวเคมีของสารอาหารหลักและสารอาหารรอง การดูดซึมสารอาหารและกระบวนการเผาผลาญ อาหารให้พลังงาน น้ำ น้ำดื่มเพื่อสุขภาพและเพื่อการแข่งกีฬา โภชนาการกับการควบคุมน้ำหนัก โภชนาการกับการสร้างกล้ามเนื้อและความแข็งแรง โภชนาการกับกีฬาที่อาศัยความอดทน สารอาหารเพิ่มประสิทธิภาพในการออกกำลังกาย โภชนาการจำเพาะกลุ่มประชากร

SCPS 686 Exercise for Special Populations 2(2-0-4)

วทสร ๖๘๖ การออกกำลังกายสำหรับกลุ่มเฉพาะ

Normal maturational changes across the lifespan from children, adolescents to older adults; pathophysiology on an array of conditions, patients with cardiovascular, pulmonary, metabolic diseases, cancer, older adults and pregnant women; exercise prescriptions, the benefits and precautions associated with exercise training for special population with regard to strength and functional capacity

การเปลี่ยนแปลงโครงสร้างร่างกายขณะการเจริญเติบโตตลอดอายุขัยจากวัยเด็ก วัยรุ่น วัยผู้ใหญ่และวัยชรา พยาธิสรีรวิทยาของกลุ่มเฉพาะ ผู้ป่วยโรคหัวใจและหลอดเลือด โรคปอด โรคทางเมแทบอลิก ผู้ป่วยมะเร็ง ผู้สูงอายุและสตรีที่ตั้งครรภ์ การจัดโปรแกรมการออกกำลังกาย ประโยชน์และข้อควรระวังในการฝึกออกกำลังกายเพื่อเพิ่มความแข็งแรงและความสามารถในการทำกิจกรรม

SCPS 687 Health Risk Appraisal in Fitness Facility 2(2-0-4)

วทสร ๖๘๗ การประเมินความเสี่ยงด้านสุขภาพในสถานที่ออกกำลังกาย

Risk management guidelines for a fitness facility; emergency procedures in a fitness setting; initial management and first-aid procedures for exercise-related injuries; basic life support; cardiopulmonary resuscitation; automated external defibrillator techniques

แนวทางการบริหารความเสี่ยงสำหรับสถานที่ออกกำลังกาย แผนรองรับเหตุฉุกเฉิน การจัดการและปฐมพยาบาลเบื้องต้นเมื่อเกิดการบาดเจ็บจากการออกกำลังกาย การช่วยชีวิตขั้นพื้นฐาน การปั๊มหัวใจ วิธีการใช้เครื่องกระตุ้นไฟฟ้าหัวใจแบบอัตโนมัติ

SCPS 688 Current Topics in Exercise Science 2(2-0-4)

วทสร ๖๘๘ หัวข้อปัจจุบันทางวิทยาศาสตร์การออกกำลังกาย

Application and integration of exercise physiology knowledge with other disciplines; new technologies in exercise science and related fields

การประยุกต์และความเชื่อมโยงความรู้ทางสรีรวิทยาการออกกำลังกายกับศาสตร์อื่นๆ เทคโนโลยีใหม่ทางวิทยาศาสตร์การออกกำลังกายและศาสตร์ที่เกี่ยวข้อง

SCPS 689 Human Physiology 2(2-0-4)

วทสร ๖๘๙ สรีรวิทยาในมนุษย์

The functions of the nervous system, muscular system, cardiovascular system, respiratory system, renal system, gastrointestinal system, endocrine system, and reproductive system; coordination of these systems to maintain the homeostasis of internal environment in response to disturbances from the external environment

หน้าที่การทำงานของระบบประสาท ระบบกล้ามเนื้อ ระบบไหลเวียนโลหิต ระบบหายใจ ระบบไต ระบบย่อยอาหาร ระบบต่อมไร้ท่อ และระบบสืบพันธุ์ การทำงานที่สอดประสานกันของระบบต่าง ๆ เพื่อการทรงสภาพปกติของสภาวะแวดล้อมภายในร่างกายต่อการถูกรบกวนจากสภาวะแวดล้อมภายนอก

****SCPS801 Health Risks and Exercise Management in the Elderly 2(2-0-4)**

วทสร ๘๐๑ ความเสี่ยงด้านสุขภาพและการจัดการการออกกำลังกายในผู้สูงอายุ

Health risk in the elderly during exercise, risk assessment due to exercise in the elderly, exercise prescription for the elderly

ความเสี่ยงจากการออกกำลังกายในผู้สูงอายุ การจัดการความเสี่ยงจากการออกกำลังกายในผู้สูงอายุ รูปแบบการออกกำลังกายที่เหมาะสมสำหรับผู้สูงอายุ

Credits (lecture – practice – self-study)

3) Thesis/Independent Study

SCPS 698 Thesis 12(0-36-0)

วทสร ๖๙๘ วิทยานิพนธ์

Identifying research proposal; presenting research proposal; conducting research with concern of research ethics; data collection, analysis, interpretation and discussion of the results; Thesis writing; presenting and publishing research in standard journals or a conference's proceedings; publishing ethics

การกำหนดโครงการวิจัย การเสนอโครงร่างวิจัย การศึกษาวิจัยอย่างมีจริยธรรม การเก็บรวบรวมข้อมูล การวิเคราะห์ข้อมูล การสังเคราะห์และวิพากษ์ผลการวิจัย การเขียนวิทยานิพนธ์ การนำเสนอและการเผยแพร่วิทยานิพนธ์ผลงานวิจัยในวารสารหรือสิ่งพิมพ์ทางวิชาการ หรือเสนอต่อที่ประชุมวิชาการ จริยธรรมในการเผยแพร่ผลงานวิจัย

SCPS 696 Independent Study 6(0-18-0)

วทสร ๖๙๖ การค้นคว้าอิสระ

Identifying research proposal; presenting research proposal; conducting research with concern of research ethics; data collection, analysis, interpretation and discussion of the results; Thematic writing; presenting and publishing research into the public or a conference's proceedings; publishing ethics

การกำหนดโครงการวิจัย การเสนอโครงร่างวิจัย การศึกษาวิจัยอย่างมีจริยธรรม การเก็บรวบรวมข้อมูล การวิเคราะห์ข้อมูล การสังเคราะห์และวิพากษ์ผลการวิจัย การเขียนรายงานการค้นคว้าอิสระ การนำเสนอการค้นคว้าอิสระและการเผยแพร่ผลงานวิจัยสู่สาธารณะ หรือเสนอต่อที่ประชุมวิชาการ จริยธรรมในการเผยแพร่ผลงานวิจัย

Appendix B
Curriculum Vitae of the Faculty in Charge of the Program

Name: Prof. Jonggonnee Wattanapermpool, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Physiology & Biophysics	University of Illinois at Chicago, USA	1994
M.Sc.	Physiology	Mahidol University	1985
B.Sc.	Radiological Technology	Mahidol University	1983

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Role of sex hormones in cardiac function
2. Impact of regular exercise on cardiac function

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kampaengsri T, Ponpuak M, Wattanapermpool J, Bupha-Intr T*. Deficit of female sex hormones desensitizes rat cardiac mitophagy. Chin J Physiol 2021 Apr;64(2):72-9.	1/12	2021
	Phungphong S, Kijtawornrat A, Wattanapermpool J, Bupha-Intr T. Improvement in cardiac function of ovariectomized rats by antioxidant tempol. Free Radic Biol Med. 2020 Nov 20;160:239-245.	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Phungphong S, Kijtawornrat A, Kampaengsri T, Wattanapermpool J, Bupha-Intr T. Comparison of exercise training and estrogen supplementation on mast cell-mediated doxorubicin-induced cardiotoxicity. Am J Physiol Regul Integr Comp Physiol. 2020 May 1;318(5):R829-R842.	1/12	2020
	Rattanasopa C, Kirk JA, Bupha-Intr T, Papadaki M, de Tombe PP, Wattanapermpool J. Estrogen but not testosterone preserves myofilament function from doxorubicin-induced cardiotoxicity by reducing oxidative modifications. Am J Physiol Heart Circ Physiol. 2019 Feb 1;316(2):H360-H370.	1/12	2019
	Wadthaisong M, Witayavanitkul N, Bupha-Intr T, Wattanapermpool J, de Tombe PP*. Chronic high-dose testosterone treatment: impact on rat cardiac contractile biology. Physiol Rep. 2019 Jul;7(14):e14192.	1/12	2019

Current Teaching Load

1	SCID 500 Cell and Molecular Biology	3(3-0-6)
2	SCID 503 Systemic Bioscience	3(3-0-6)
3	SCID 518 Generic Skills in Science Research	1(1-0-2)
4	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
5	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
6	SCPS 101 Health and Wellness	2(2-0-0)
7	SCPS 202 Basic Physiology	3(2-3-5)
8	SCBM 261 Physiology for Medical Science I	2(2-0-4)
9	SCBM 262 Physiology for Medical Science II	2(2-0-4)
10	SCBM 263 Physiology for Medical Science III	3(3-0-6)
11	SCID 112 Introduction to Research	1(1-0-2)
12	SCID 221 Cardiovascular System I	3(2-2-5)
13	SCID 222 Cardiovascular System II	2(2-0-4)
14	SCID 223 Respiratory System	4(3-2-7)
15	SCID 224 Renal and Urinary System	3(3-0-6)
16	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)

17	SCID 313 Endocrine System	3(3-0-6)
18	SCPS 606 Seminar in Physiology I	1(1-0-2)
19	SCPS 607 Seminar in Physiology II	1(1-0-2)
20	SCPS 608 Seminar in Physiology III	1(1-0-2)
21	SCPS 623 Neurophysiology	2(2-0-4)
22	SCPS 630 Scientific Paper Analysis	1(0-2-1)
23	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
24	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	2(2-0-4)
25	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
26	SCPS 677 Seminar in Physiology IV	1(1-0-2)
27	SCPS 678 Scientific Writing and Communication	1(0-3-0)
28	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
29	SCSP 680 Systems Physiology 1	3(3-0-6)
30	SCSP 681 Systems Physiology 2	3(3-0-6)
31	SCPS 683 Professional Communication Skills	2(1-2-3)
32	SCPS 698 Thesis	12(0-36-0)
33	SCPS 699 Dissertation	36(0-108-0)
34	SCPS 799 Dissertation	48(0-144-0)
35	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)
2	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
3	SCPS 676 Physiology of Aging	1(1-0-2)
4	SCPS 689 Human Physiology	2(2-0-4)
5	SCPS 698 Thesis	12(0-36-0)
6	SCPS 696 Independent Study	6(0-18-0)

Name: Prof. Narattaphol Charoenphandhu, MD., Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
M.D.	M.D. (Medical)	Mahidol University	2004
Ph.D.	Ph.D. (Physiology)	Mahidol University	2001
B.Sc.	B.Sc. (Medical Science)	Mahidol University	1999

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Bone and calcium physiology
2. Development of calcium supplement product

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Charoenphandhu N, Sooksawanwit S, Aeimlapa R, Thonapan N, Upanan P, Adulyaritthikul P, Krungchanuchat S, Panupinthu N, Teerapornpuntakit J, Rojviriya C, Lertsuwan K, Svasti S, Wongdee K*. Mild-intensity physical activity prevents cardiac and osseous iron deposition without affecting bone mechanical property or porosity in thalassemic mice. Sci Rep 2022 Apr;12:5959.	1/12	2022
	Imerb N, Thonusin C, Pratchayasakul W, Arunsak B, Nawara W, Aeimlapa R, Charoenphandhu N, Chattipakorn N, Chattipakorn SC*. Hyperbaric oxygen therapy improves age induced bone dyshomeostasis in non-obese and obese conditions. Life Sci 2022 Apr;295:120406.	1/12	2022
	Chaimana R, Teerapornpuntakit J, Jantarajit W, Lertsuwan K, Krungchanuchat S, Panupinthu N,	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Krishnamra N, Charoenphandhu N*. CFTR-mediated anion secretion in parathyroid hormone-treated Caco-2 cells is associated with PKA and PI3K phosphorylation but not intracellular pH changes or Na+/K+-ATPase abundance. Biochem Biophys Rep 2021 Sep;27:101054.		
	Chanpaisaeng K, Teerapornpuntakit J, Wongdee K, Charoenphandhu N*. Emerging roles of calcium-sensing receptor in the local regulation of intestinal transport of ions and calcium. Am J Physiol Cell Physiol 2021 Mar;320(3):C270-C278.	1/12	2021
	Phoaubon S, Lertsuwan K*, Teerapornpuntakit J, Charoenphandhu N. Hepcidin induces intestinal calcium uptake while suppressing iron uptake in Caco-2 cells. PLoS One 2021 Oct;16(10):e0258433.	1/12	2021
	Wongdee K, Chanpaisaeng K, Teerapornpuntakit J, Charoenphandhu N*. Intestinal calcium absorption. Compr Physiol 2021 Jul;11(3):2047-2073.	1/12	2021
	Tiyasatkulkovit W, Aksornthong S, Adulyaritthikul P, Upanan P, Wongdee K, Aeimlapa R, Teerapornpuntakit J, Rojviriya C, Panupinthu N, Charoenphandhu N. Excessive salt consumption causes systemic calcium mishandling and worsens microarchitecture and strength of long bones in rats. Sci Rep. 2021 Jan;11:1850	1/12	2021
	Rodrat M, Jantarajit W, Ng DRS, Harvey BSJ, Liu J, Wilkinson WJ, Charoenphandhu N, Sheppard DN*. Carbon monoxide-releasing molecules inhibit the cystic fibrosis transmembrane conductance regulator Cl− channel. Am J Physiol Lung Cell Mol Physiol 2020 Dec;319(6):L997-L1009.	1/12	2020
	Namhong S, Wongdee K, Suntornsaratoon P, Teerapornpuntakit J, Hemstapat R, Charoenphandhu N. Knee osteoarthritis in young growing rats is	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	associated with widespread osteopenia and impaired bone mineralization. Sci Rep. 2020;10(1):15079		
	Rittidach T, Tithito T, Suntornsaratoon P, Charoenphandhu N, Thongbunchoo J, Krishnamra N, et al. Effect of zirconia-mullite incorporated biphasic calcium phosphate/biopolymer composite scaffolds for bone tissue engineering. Biomed Phys Eng Express. 2020;6(5):055004.	1/12	2020
	Lertsuwan K, Nammultriputtar K, Nanthawuttiphan S, Tannop N, Teerapornpuntakit J, Thongbunchoo J, Charoenphandhu N. Differential effects of Fe^{2+} and Fe^{3+} on osteoblasts and the effects of $1,25(OH)_2D_3$, deferiprone and extracellular calcium on osteoblast viability under iron-overloaded conditions. PLoS One. 2020;15(5):e0234009.	1/12	2020
	Srikuea R, Hirunsai M, Charoenphandhu N. Regulation of vitamin D system in skeletal muscle and resident myogenic stem cell during development, maturation, and ageing. Sci Rep. 2020;10(1):8239	1/12	2020
	Jantarajit W, Wongdee K, Lertsuwan K, Teerapornpuntakit J, Aeimlapa R, Thongbunchoo J, et al. Parathyroid hormone increases CFTR expression and function in Caco-2 intestinal epithelial cells. Biochem Biophys Res Commun. 2020;523(3):816-21.	1/12	2020
	Wongdee K, Lertsuwan K, Thonapan N, Teerapornpuntakit J, Charoenphandhu N. Differential expression of Sox9 protein and proteoglycans in the epiphyseal cartilage of bromocriptine-treated pregnant and lactating rats. Anat Sci Int. 2020;95(2):277-85.	1/12	2020
	Eaimworawuthikul S, Tunapong W, Chunchai T, Suntornsaratoon P, Charoenphandhu N, Thiennimitr P, et al. Altered gut microbiota ameliorates bone pathology in the mandible of obese-insulin-resistant rats. Eur J Nutr. 2020;59(4):1453-62.	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Charoenphandhu N, Aeimlapa R, Sooksawanwit S, Thongbunchoo J, Teerapornpuntakit J, Svasti S, Wongdee K. Responses of primary osteoblasts and osteoclasts from hemizygous ß-globin knockout thalassemic mice with elevated plasma glucose to 1,25-dihydroxyvitamin D_3. Sci Rep. 2019;9(1):13963.	1/12	2019
	Tiyasatkulkovit W, Promruk W, Rojviriya C, Pakawanit P, Chaimongkolnukul K, Kengkoom K, Teerapornpuntakit J, Panupinthu N, Charoenphandhu N. Impairment of bone microstructure and upregulation of osteoclastogenic markers in spontaneously hypertensive rats. Sci Rep. 2019;9(1):12293.	1/12	2019
	Aeimlapa R, Wongdee K, Tiyasatkulkovit W, Kengkoom K, Krishnamra N, Charoenphandhu N. Anomalous bone changes in ovariectomized type-2 diabetic rats: inappropriately low bone turnover with bone loss in an estrogen-deficient condition. Am J Physiol Endocrinol Metab. 2019;317(4):E646-E57.	1/12	2019
	Wongdee K, Rodrat M, Teerapornpuntakit J, Krishnamra N, Charoenphandhu N. Factors inhibiting intestinal calcium absorption: hormones and luminal factors that prevent excessive calcium uptake. J Physiol Sci. 2019;69(5):683-96.	1/12	2019
	Eaimworawuthikul S, Tunapong W, Chunchai T, Suntornsaratoon P, Charoenphandhu N, Thiennimitr P, Chattipakorn N, Chattipakorn S. *Lactobacillus paracasei* HII01, xylooligosaccharide and synbiotics improve tibial microarchitecture in obese-insulin resistant rats. J Funct Foods. 2019;59:371-9.	1/12	2019
	Khuituan P, K-da S, Bannob K, Hayeeawaema F, Peerakietkhajorn S, Tipbunjong C, Wichienchot S, Charoenphandhu N. Prebiotic oligosaccharides from dragon fruits alter gut motility in mice. Biomed Pharmacother. 2019;114.	1/12	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Eaimworawuthikul S, Tunapong W, Chunchai T, Yasom S, Wanchai K, Suntornsaratoon P, Charoenphandhu N, Thiennimitr P, Chattipakorn N, Chattipakorn S. Effects of probiotics, prebiotics or synbiotics on jawbone in obese-insulin resistant rats. Eur J Nutr. 2019;58(7):2801–2810.	1/12	2019
	Tithito T, Suntornsaratoon P, Charoenphandhu N, Thongbunchoo J, Krishnamra N, Tang IM, Pon-On W. Fabrication of biocomposite scaffolds made with modified hydroxyapatite inclusion of chitosan-grafted-poly(methyl methacrylate) for bone tissue engineering. Biomed Mater. 2019;14(2).	1/12	2019
	Thiengwittayaporn S, Phatwong S, Kangkano N, Charoenphandhu N. Efficacy of triamcinolone injection with or without oral meloxicam for treatment of anserine syndrome: a randomized, double-blind, placebo-controlled trial. Mltj-Muscle Ligament. 2019;9(1):138-44.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 261 Physiology for Medical Science I	2(2-0-4)
4	SCBM 262 Physiology for Medical Science II	2(2-0-4)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCID 112 Introduction to Research	1(1-0-2)
7	SCID 221 Cardiovascular System I	3(2-2-5)
8	SCID 222 Cardiovascular System II	2(2-0-4)
9	SCID 223 Respiratory System	4(3-2-7)
10	SCID 224 Renal and Urinary System	3(3-0-6)
11	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
12	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
13	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
14	SCID 313 Endocrine System	3(3-0-6)

15	SCPS 606 Seminar in Physiology I	1(1-0-2)
16	SCPS 607 Seminar in Physiology II	1(1-0-2)
17	SCPS 608 Seminar in Physiology III	1(1-0-2)
18	SCPS 623 Neurophysiology	2(2-0-4)
19	SCPS 630 Scientific Paper Analysis	1(0-2-1)
20	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
21	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
22	SCPS 677 Seminar in Physiology IV	1(1-0-2)
23	SCPS 678 Scientific Writing and Communication	1(0-3-0)
24	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
25	SCSP 680 Systems Physiology 1	3(3-0-6)
26	SCSP 681 Systems Physiology 2	3(3-0-6)
27	SCPS 683 Professional Communication Skills	2(1-2-3)
28	SCPS 698 Thesis	12(0-36-0)
29	SCPS 699 Dissertation	36(0-108-0)
30	SCPS 799 Dissertation	48(0-144-0)
31	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
2	SCPS 676 Physiology of Aging	1(1-0-2)
3	SCPS 689 Human Physiology	2(2-0-4)
4	SCPS 698 Thesis	12(0-36-0)
5	SCPS 696 Independent Study	6(0-18-0)

Name: Assoc. Prof. Arthit Chairoungdua, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Medial Science	Kyorin University School of Medicine, Japan	2003
M.Sc.	Toxicology	Mahidol University	1998
B.N.S.	Nursing Science	Khon Kaen University	1993

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Study on roles of extracellular vesicles as modulators of cell-to-cell communication in health and disease
2. Anticancer drug development from natural resources

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Hasan H, Sohal IS*, Soto-Vargas Z, Byappanhalli AM, Humphrey SE, Kubo H, Kitdumrongthum S, Copeland S, Tian F, Chairoungdua A, Kasinski AL. Extracellular vesicles released by non-small cell lung cancer cells drive invasion and permeability in non-tumorigenic lung epithelial cells. Sci Rep 2022 Jan;12:972	1/12	2022
	Maijaroen S, Klaynongsruang S, Reabroi S, Chairoungdua A, Roytrakul S, Daduang J, Taemaitree L, Jangpromma N*. Proteomic profiling reveals antitumor effects of RT2 peptide on a human colon carcinoma xenograft mouse model. Eur J Pharmacol 2022 Feb;917:174753.	1/12	2022
	Wongkaewkhiaw S, Wongrakpanich A, Krobthong S,	1/12	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Saengsawang W, Chairoungdua A, Boonmuen N*. Induction of apoptosis in human colorectal cancer cells by nanovesicles from fingerroot (Boesenbergia rotunda (L.) Mansf.). PLoS One 2022 Apr;17(4):e0266044.		
	Bunthawong R, Sirion U, Chairoungdua A, Suksen K, Piyachaturawat P, Suksamrarn A, Saeeng R*. Synthesis and cytotoxic activity of new 7-acetoxy-12-amino-14-deoxy andrographolide analogues. Bioorg Med Chem Lett. 2021 Feb;33:127741.	1/12	2021
	Chaidam S, Saehlim N, Suksen K, Chairoungdua A, Saeeng R*. Design, synthesis, evaluation and molecular docking studies of 1,6-bis-triazole-linked **α**-galactoside derivatives as potential anticancer agents. ChemistrySelect 2021 Aug;6(31):8052-7.	1/12	2021
	Janpipatkul K, Trachu N, Watcharenwong P, Panvongsa W, Worakitchanon W, Metheetrairut C, Oranratnachai S, Reungwetwattana T, Chairoungdua A*. Exosomal microRNAs as potential biomarkers for osimertinib resistance of non-small cell lung cancer patients. Cancer Biomark 2021 Jun;31(3):281-94.	1/12	2021
	Kansom T, Sajomsang W, Chairoungdua A, Kitcharoen N, Charoensuksai P, Patrojanasophon P, Opanasopit P*. Doxorubicin-loaded N-naphthyl-N,O-succinyl chitosan micelles for colon cancer treatment. Sci Eng Health Stud 2021 Apr;15:21050003.	1/12	2021
	Moe TS, Chaturonrutsamee S, Bunteang S, Kuhakarn C, Prabpai S, Surawatanawong P, Chairoungdua A, Suksen K, Akkarawongsapat R, Limthongkul J, Napaswad C, Nuntasaen N, Reutrakul V*. Boesenmaxane diterpenoids from Boesenbergia maxwellii. J Nat Prod 2021 Feb;84(2):518-26.	1/12	2021
	Panvongsa W, Siripoon T, Worakitchanon W, Arsa L, Trachu N, Jinawath N, Ngamphaiboon N*,	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Chairoungdua A*. Plasma extracellular vesicle microRNA-491-5p as diagnostic and prognostic marker for head and neck squamous cell carcinoma. Cancer Sci 2021 Oct;112(10):4257-69.		
	Silalai P, Pruksakorn D, Chairoungdua A, Suksen K, Saeeng R*. Synthesis of propargylamine mycophenolate analogues and their selective cytotoxic activity towards neuroblastoma SH-SY5Y cell line. Bioorg Med Chem Lett 2021 Aug;45:128135.	1/12	2021
	Sukbangnop W, Hosen A, Hongthong S, Kuhakarn C, Tuchinda P, Chaturonrutsamee S, Thanasansurapong S, Akkarawongsapat R, Limthongkul J, Napaswad C, Chairoungdua A, Suksen K, Nuntasaen N, Reutrakul V*. Bioactive tetrahydrofuran lignans from roots, stems, leaves and twigs of Anogeissus rivularis. Fitoterapia 2021 Jun;151:104885.	1/12	2021
	Suksen K, Janpipatkul K, Reabroi S, Anantachoke N, Reutrakul V, Chairoungdua A, Thongon N, Bhukhai K*. Gambogic acid inhibits Wnt/β-catenin signaling and induces ER stress-mediated apoptosis in human cholangiocarcinoma. Asian Pac J Cancer Preven 2021 Jun;22(6):1913-20.	1/12	2021
	Tanhuad N, Thongsa-ad U, Sutjarit N, Yoosabai P, Panvongsa W, Wongniam S, Suksamrarn A, Piyachaturawat P, Anurathapan U, Borwornpinyo S, Chairoungdua A, Hongeng S*, Bhukhai K*. Ex vivo expansion and functional activity preservation of adult hematopoietic stem cells by a diarylheptanoid from Curcuma comosa. Biomed Pharmacother 2021 Sep;143:112102.	1/12	2021
	Arsakhant P, Sirion U, Chairoungdua A, Suksen K, Piyachaturawat P, Suksamrarn A, Saeeng R*. Design and synthesis of C-12 dithiocarbamate andrographolide analogues as an anticancer	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	agent. Bioorg Med Chem Lett. 2020 Jul;30(14):127263.		
	Chatsirisupachai K, Kitdumrongthum S, Panvongsa W, Janpipatkul K, Worakitchanon W, Lertjintanakit S, Wongtrakoongate P, Chairoungdua A*. Expression and roles of system L amino acid transporters in human embryonal carcinoma cells. Andrology 2020 Nov;8(6):1844-1858.	1/12	2020
	Jaitheerapapkul S, Kuhakarn C, Hongthong S, Anantachoke N, Thanasansurapong S, Chairoungdua A, Suksen K, Nuntasaen N, Reutrakul V*. Lanostane derivatives from the leaves and twigs of *Garcinia wallichii*. Phytochem Lett. 2020 Aug;38:101-6.	1/12	2020
	Jearawuttanakul K, Khumkhrong P, Suksen K, Reabroi S, Munyoo B, Tuchinda P, Borwornpinyo S, Boonmuen N, Chairoungdua A*. Cleistanthin A induces apoptosis and suppresses motility of colorectal cancer cells. Eur J Pharmacol 2020 Dec;889:173604.	1/12	2020
	Kangboonruang K, Wongtrakoongate P, Lertsuwan K, Khachonkham S, Changkaew P, Tangboonduangjit P, Siripoon T, Ngamphaiboon N, Chairoungdua A*. *MALAT1* decreases the sensitivity of head and neck squamous cell carcinoma cells to radiation and cisplatin. Anticancer Res. 2020;40(5):2645-55.	1/12	2020
	Kitdumrongthum S, Reabroi S, Suksen K, Tuchinda P, Munyoo B, Mahalapbutr P, Rungrotmongkol T, Ounjai P, Chairoungdua A*. Inhibition of topoisomerase IIα and induction of DNA damage in cholangiocarcinoma cells by altholactone and its halogenated benzoate derivatives. Biomed Pharmacother. 2020 Jul;127:110149.	1/12	2020
	Silalai P, Sirion U, Piyachaturawat P, Chairoungdua A, Suksen K, Saeeng R*. Design, synthesis and evaluations of new 10-triazolyl-1-methoxygenipin analogues for their cytotoxicity to cancer cells. ChemistrySelect.	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	2020 Aug;5(30):9540-6.		
	Sonpho E, Wootthichairangsan C, Ishida M, Inoue T, Agata K, Maleehuan A, Charngkaew K, Chomanee N, Moonsom S, Wongtrakoongate P, Chairoungdua A, Ounjai P*. ECM-body: A cell-free 3D biomimetic scaffold derived from intact planarian body. Zool Sci. 2020 Aug;37(4):307-13.	1/12	2020
	Thanasansurapong S, Tuchinda P*, Reutrakul V, Pohmakotr M, Piyachaturawat P, Chairoungdua A, Suksen K, Akkarawongsapat R, Limthongkul J, Napaswad C, Nuntasaen N. Cytotoxic and anti-HIV-1 activities of triterpenoids and flavonoids isolated from leaves and twigs of *Gardenia sessiliflora*. Phytochem Lett. 2020 Feb;35:46-52.	1/12	2020
	Mazumder A, Assawapanumat W, Dwivedi A, Reabroi S, Chairoungdua A, Nasongkla N*. Glucose targeted therapy against liver hepatocellular carcinoma: *In vivo* study. J Drug Deliv Sci Technol. 2019 Feb;49:502-12.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
4	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
5	SCID 313 Endocrine System	3(3-0-6)
6	SCPS 606 Seminar in Physiology I	1(1-0-2)
7	SCPS 607 Seminar in Physiology II	1(1-0-2)
10	SCPS 608 Seminar in Physiology III	1(1-0-2)
11	SCPS 630 Scientific Paper Analysis	1(0-2-1)
12	SCPS 677 Seminar in Physiology IV	1(1-0-2)
13	SCPS 678 Scientific Writing and Communication	1(0-3-0)
14	SCPS 679 Advanced Topics in Physiology	3(1-4-4)

15	SCSP 680 Systems Physiology 1	3(3-0-6)
16	SCSP 681 Systems Physiology 2	3(3-0-6)
17	SCPS 683 Professional Communication Skills	2(1-2-3)
18	SCPS 698 Thesis	12(0-36-0)
19	SCPS 699 Dissertation	36(0-108-0)
20	SCPS 799 Dissertation	48(0-144-0)
21	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
2	SCPS 676 Physiology of Aging	1(1-0-2)
3	SCPS 689 Human Physiology	2(2-0-4)
4	SCPS 698 Thesis	12(0-36-0)
5	SCPS 696 Independent Study	6(0-18-0)

Name: Assoc. Prof. Jittima Weerachayaphorn, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Cellular Physiology and Molecular Biophysics	University of Texas Medical Branch at Galveston, USA	2007
M.Sc.	Physiology	Mahidol University	2001
B.Sc. (Hons.)	Nursing Science	Mahidol University	1995

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Pathophysiologic mechanisms underlying mechanisms of cholestasis
2. Mechanisms and effects of calcium signals in hepatocytes and cholangiocytes
3. Molecular regulation of cholestasis in cholangiocytes
4. Role of inositol 1,4,5-trisphosphate receptors in cholestatic liver disease and alcoholic hepatitis

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Chansela P, Potip B, Weerachayaphorn J, Kangwanrangsan N, Chukijrungroat N, Saengsirisuwan V*. Morphological alteration of the pancreatic islet in ovariectomized rats fed a high-fat high-fructose diet. Histochem Cell Biol 2022 Apr;157(4):427-42.	1/12	2022
	Takeuchi M, Vidigal PT, Guerra MT, Hundt MA, Robert ME, Olave-Martinez M, Aoki S, Khamphaya T, Kersten R, Kruglov E, Rodriguez RD, Banales JM, Nathanson MH*, Weerachayaphorn J*. Neutrophils interact with cholangiocytes to cause cholestatic changes in alcoholic hepatitis. Gut. 2021 Jan;70(2):342-56.	1/12	2021
	Sutjarit N, Thongon N, Weerachayaphorn J, Piyachaturawat P, Suksamrarn A, Suksen K,	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Papachristou DJ, Blair HC*. Inhibition of Adipogenic Differentiation of Human Bone Marrow-Derived Mesenchymal Stem Cells by a Phytoestrogen Diarylheptanoid from *Curcuma comosa*. J Agric Food Chem. 2020 Sep 16;68(37):9993-10002.		
	Buniam J, Chukijrungroat N, Rattanavichit Y, Surapongchai J, Weerachayaphorn J, Bupha-Intr T, Saengsirisuwan V*. 20-hydroxyecdysone ameliorates metabolic and cardiovascular dysfunction in high-fathigh-fructose-fed ovariectomized rats. BMC Compl Med Therapies. 2020 May;20(1):140.	1/12	2020
	Ueasilamongkol P, Khamphaya T, Guerra MT, Rodrigues MA, Gomes DA, Kong Y, et al. Type 3 Inositol 1,4,5-Trisphosphate Receptor Is Increased and Enhances Malignant Properties in Cholangiocarcinoma. Hepatology. 2020;71(2):583-99.	1/12	2020
	Buniam J, Chukijrungroat N, Khamphaya T, Weerachayaphorn J, Saengsirisuwan V*. Estrogen and voluntary exercise attenuate cardiometabolic syndrome and hepatic steatosis in ovariectomized rats fed a high-fat high-fructose diet. Am J Physiol Endocrinol Metab. 2019 May;316(5):E908-E921.	1/12	2019
	Franca A, Carlos Melo Lima Filho A, Guerra MT, Weerachayaphorn J, Loiola dos Santos M, Njei B, Robert M, Xavier Lima C, Vieira Teixeira Vidigal P, Banales JM, Ananthanarayanam M, Fatima Leite M, Nathanson MH. Effects of endotoxin on type 3 inositol 1,4,5-trisphosphate receptor in human cholangiocytes. Hepatology. 2019 Feb;69(2):817-30.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 261 Physiology for Medical Science I	2(2-0-4)
4	SCBM 262 Physiology for Medical Science II	2(2-0-4)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCID 112 Introduction to Research	1(1-0-2)
7	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
8	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
9	SCID 221 Cardiovascular System I	3(2-2-5)
10	SCID 222 Cardiovascular System II	2(2-0-4)
11	SCID 223 Respiratory System	4(3-2-7)
12	SCID 224 Renal and Urinary System	3(3-0-6)
13	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
14	SCID 313 Endocrine System	3(3-0-6)
15	SCPS 606 Seminar in Physiology I	1(1-0-2)
16	SCPS 607 Seminar in Physiology II	1(1-0-2)
17	SCPS 608 Seminar in Physiology III	1(1-0-2)
18	SCPS 623 Neurophysiology	2(2-0-4)
19	SCPS 630 Scientific Paper Analysis	1(0-2-1)
20	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
21	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	2(2-0-4)
22	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
23	SCPS 677 Seminar in Physiology IV	1(1-0-2)
24	SCPS 678 Scientific Writing and Communication	1(0-3-0)
25	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
26	SCSP 680 Systems Physiology 1	3(3-0-6)
27	SCSP 681 Systems Physiology 2	3(3-0-6)
28	SCPS 683 Professional Communication Skills	2(1-2-3)
29	SCPS 698 Thesis	12(0-36-0)
30	SCPS 699 Dissertation	36(0-108-0)
31	SCPS 799 Dissertation	48(0-144-0)
32	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)
2	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)

3	SCPS 676 Physiology of Aging	1(1-0-2)
4	SCPS 689 Human Physiology	2(2-0-4)
5	SCPS 698 Thesis	12(0-36-0)
6	SCPS 696 Independent Study	6(0-18-0)

Name: Assoc. Prof. Sunhapas Soodvilai, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Physiology	Mahidol University	2005
B.Pharm	Pharmacy	Ubon Ratchathani University	2000

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Renal Physiology
2. Regulation of drug transporters and Ion channels
3. Drug-induced nephrotoxicity
4. Role of nuclear receptors in cancer development

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Tonum K, Chabang N, Fongsupa S, Chantawarin S, Jiarpinitnun C, Tuchinda P, Soodvilai S*. Pinostrobin inhibits renal CFTR-mediated Cl− secretion and retards cyst growth in cell-derived cyst and polycystic kidney disease rats. J Pharmacol Sci 2022 Apr;148(4):369-76.	1/12	2022
	Tonum K, Srimai N, Chabang N, Fongsupa S, Tuchinda P, Torres JA, Weimbs T, Soodvilai S*. Pharmacological effects of panduratin A on renal cyst development in in vitro and in vivo models of polycystic kidney disease. Int J Mol Sci 2022 Apr;23(8):4328.	1/12	2022
	Worakajit N, Thipboonchoo N, Chaturongakul S, Jutabha P, Soontornniyomkij V, Tuchinda P, Soodvilai S*. Nephroprotective potential of Panduratin A against colistin-induced renal injury via attenuating mitochondrial dysfunction and cell apoptosis. Biomed	1/12	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Pharmacother 2022 Apr;148:112732.		
	Pasachan T, Duangjai A, Ontawong A, Amornlerdpison D, Jinakote M, Phatsara M, Soodvilai S, Srimaroeng C*. Tiliacora triandra (Colebr.) Diels leaf aqueous extract inhibits hepatic glucose production in HepG2 cells and type 2 diabetic rats. Molecules. 2021 Feb;26(5):1239.	1/12	2021
	Chabang N, Soodvilai S, Munyoo B, Tuchinda P, Soodvilai S*. Modified cycloartanes with improved inhibitory effect on SGLT-mediated glucose uptake in human renal proximal tubular cells. ScienceAsia 2021 Apr;47(2):170-7.	1/12	2021
	Ontawong A, Pasachan T, Trisuwan K, Soodvilai S, Duangjai A, Pongchaidecha A, Amornlerdpison D, Srimaroeng C*. Coffea arabica pulp aqueous extract attenuates oxidative stress and hepatic lipid accumulation in HepG2 cells. J Herb Med 2021 Oct;29:100465	1/12	2021
	Thadtapong N, Chaturongakul S, Soodvilai S, Dubbs P*. Colistin and carbapenem-resistant Acinetobacter baumannii Aci46 in Thailand: Genome analysis and antibiotic resistance profiling. Antibiotics 2021 Sep;10(9):1054.	1/12	2021
	Thongnuanjan P, Soodvilai S, Fongsupa S, Chabang N, Vivithanaporn P, Tuchinda P, Soodvilai S*. Protective effect of panduratin A on cisplatin-induced apoptosis of human renal proximal tubular cells and acute kidney injury in mice. Biol Pharm Bull 2021 Jun;44(6):830-837.	1/12	2021
	Thongnuanjan P, Soodvilai S, Fongsupa S, Thipboonchoo N, Chabang N, Munyoo B, Tuchinda P, Soodvilai S*. Panduratin a derivative protects against cisplatin-induced apoptosis of renal proximal tubular cells and kidney injury in mice. Molecules 2021 Nov;26(21):6642.	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Worakajit N, Thongnuanjan P, Chabang N, Soodvilai S, Tuchinda P, Soodvilai S*. Pinostrobin attenuates colistin-induced apoptosis of human renal proximal tubular cells. Pharm Sci Asia 2021 Nov-Dec;48(6):549-56.	1/12	2021
	Chabang N, Soodvilai S, Munyoo B, Tuchinda P, Soodvilai S*. Modified cycloartanes with improved inhibitory effect on SGLT-mediated glucose uptake in human renal proximal tubular cells. ScienceAsia 2021 Apr;47(2):170-7.	1/12	2021
	Jinakote M, Ontawong A, Soodvilai S, Pimta J, Pasachan T, Chatsudthipong V, Srimaroeng C*. High affinity of 4-(4-(dimethylamino)styryl)-*N*-methylpyridinium transport for assessing organic cation drugs in hepatocellular carcinoma cells. Fundam Clin Pharmacol. 2020 Jun;34(3):365-79.	1/12	2020
	Pathomthongtaweechai N, Soodvilai S, Pichyangkura R, Muanprasat C*. Novel potential application of chitosan oligosaccharide for attenuation of renal cyst growth in the treatment of polycystic kidney disease. Molecules 2020 Nov;25(23):E5589.	1/12	2020
	Soodvilai S*, Meetam P, Siangjong L, Chokchaisiri R, Suksamrarn A, Soodvilai S. Germacrone reduces cisplatin-induced toxicity of renal proximal tubular cells via inhibition of organic cation transporter. Biol Pharm Bull 2020 Nov;43(11):1693-1698.	1/12	2020
	Wang F*, Luo R*, Peng K, Liu X, Xu C, Lu X, Soodvilai S, Yang T. Soluble (pro)renin receptor regulation of ENaC involved in aldosterone signaling in cultured collecting duct cells. Am J Physiol Renal Physiol. 2020 Mar;318(3):F817-F25.	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Wongwan T, Chatsudthipong V, Soodvilai S. Farnesoid X Receptor Activation Stimulates Organic Cations Transport in Human Renal Proximal Tubular Cells. Int J Mol Sci. 2020 Aug 24;21(17):6078.	1/12	2020
	Benchamana A, Mori H, MacDougald OA, Soodvilai S*. Regulation of adipocyte differentiation and metabolism by lansoprazole. Life Sci. 2019 Dec;239:116897.	1/12	2019
	Soodvilai S, Tipparos W, Rangsimawong W, Patrojanasophon P, Soodvilai S, Sajomsang W, Opanasopit P*. Effects of silymarin-loaded amphiphilic chitosan polymeric micelles on the renal toxicity and anticancer activity of cisplatin. Pharm Dev Technol. 2019 Jun;24(8):927-34.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 261 Physiology for Medical Science I	2(2-0-4)
4	SCBM 262 Physiology for Medical Science II	2(2-0-4)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCID 112 Introduction to Research	1(1-0-2)
7	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
8	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
9	SCID 221 Cardiovascular System I	3(2-2-5)
10	SCID 222 Cardiovascular System II	2(2-0-4)
11	SCID 223 Respiratory System	4(3-2-7)
12	SCID 224 Renal and Urinary System	3(3-0-6)
13	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
14	SCID 313 Endocrine System	3(3-0-6)
15	SCPS 606 Seminar in Physiology I	1(1-0-2)
16	SCPS 607 Seminar in Physiology II	1(1-0-2)
17	SCPS 608 Seminar in Physiology III	1(1-0-2)
18	SCPS 623 Neurophysiology	2(2-0-4)

19	SCPS 630 Scientific Paper Analysis	1(0-2-1)
20	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
21	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	2(2-0-4)
22	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
23	SCPS 677 Seminar in Physiology IV	1(1-0-2)
24	SCPS 678 Scientific Writing and Communication	1(0-3-0)
25	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
26	SCSP 680 Systems Physiology 1	3(3-0-6)
27	SCSP 681 Systems Physiology 2	3(3-0-6)
28	SCPS 683 Professional Communication Skills	2(1-2-3)
29	SCPS 698 Thesis	12(0-36-0)
30	SCPS 699 Dissertation	36(0-108-0)
31	SCPS 799 Dissertation	48(0-144-0)
32	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)
2	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
3	SCPS 676 Physiology of Aging	1(1-0-2)
4	SCPS 689 Human Physiology	2(2-0-4)
5	SCPS 698 Thesis	12(0-36-0)

Name: Assoc. Prof. Tepmanas Bupha-Intr, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Cer.	Certified Strength and Conditioning Specialist	National Strength and Conditioning Association (NSCA)	2019
Ph.D.	Physiology	Mahidol University	2005
D.V.M.	Veterinary Medicine	Chulalongkorn University	1998

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Cardiac muscle physiology and sex hormones
2. Role of antioxidant in the heart
3. Cardiac inflammation
4. Cardiac autonomic function in sport and exercise

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Kampaengsri T, Ponpuak M, Wattanapermpool J, Bupha-Intr T*. Deficit of female sex hormones desensitizes rat cardiac mitophagy. Chin J Physiol 2021 Apr;64(2):72-9.	1/12	2021
	Buniam J, Chukijrungroat N, Rattanavichit Y, Surapongchai J, Weerachayaphorn J, Bupha-Intr T, Saengsirisuwan V*. 20-hydroxyecdysone ameliorates metabolic and cardiovascular dysfunction in high-fathigh-fructose-fed ovariectomized rats. BMC Compl Med Therapies. 2020 May;20(1):140.	1/12	2020
	Phungphong S, Kijtawornrat A, Kampaengsri T, Wattanapermpool J, Bupha-Intr T*. Comparison of	1/12	2020

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	exercise training and estrogen supplementation on mast cell-mediated doxorubicin-induced cardiotoxicity. Am J Physiol Regul Integr Comp Physiol. 2020 May;318(5):R829-R42.		
	Phungphong S, Kijtawornrat A, Wattanapermpool J, Bupha-Intr T*. Improvement in cardiac function of ovariectomized rats by antioxidant tempol. Free Radic Biol Med. 2020 Nov;160:239-45.	1/12	2020
	Thabsuwan M, Chawrai T, Boonsri C, Bupha-Intr T*. Age-related change in heart rate variability at resting in Thai professional athletes. Asian J Sports Med 2020 Sep;11(3):e102409.	1/12	2020
	Wadthaisong M, Wattanapermpool J, de Tombe PP, Bupha-Intr T*. Suppression of myofilament cross-bridge kinetic in the heart of orchidectomized rats. Life Sci. 2020 Nov;261:118342.	1/12	2020
	Jitmana R, Raksapharm S, Kijtawornrat A, Saengsirisuwan V, Bupha-Intr T*. Role of cardiac mast cells in exercise training-mediated cardiac remodeling in angiotensin II-infused ovariectomized rats. Life Sci. 2019 Feb;219:209-18.	1/12	2019
	Rattanasopa C, Kirk JA, Bupha-Intr T, Papadaki M, de Tombe PP, Wattanapermpool J*. Estrogen but not testosterone preserves myofilament function from doxorubicin-induced cardiotoxicity by reducing oxidative modifications. Am J Physiol Heart Circ Physiol. 2019 Feb;316(2):H360-H70.	1/12	2019
	Wadthaisong M, Witayavanitkul N, Bupha-Intr T, Wattanapermpool J, de Tombe PP*. Chronic high-dose testosterone treatment: impact on rat cardiac contractile biology. Physiol Rep. 2019 Jul;7(14):e14192.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 262 Physiology for Medical Science II	2(2-0-4)
4	SCID 112 Introduction to Research	1(1-0-2)
5	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
6	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
7	SCID 221 Cardiovascular System I	3(2-2-5)
8	SCID 222 Cardiovascular System II	2(2-0-4)
9	SCID 223 Respiratory System	4(3-2-7)
10	SCID 224 Renal and Urinary System	3(3-0-6)
11	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
12	SCID 313 Endocrine System	3(3-0-6)
13	SCPS 606 Seminar in Physiology I	1(1-0-2)
14	SCPS 607 Seminar in Physiology II	1(1-0-2)
15	SCPS 608 Seminar in Physiology III	1(1-0-2)
16	SCPS 630 Scientific Paper Analysis	1(0-2-1)
17	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
18	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
19	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	2(2-0-4)
20	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	2(2-0-4)
21	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
22	SCPS 671 Foundations of Strength Training and Conditioning	1(0-2-1)
23	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
24	SCPS 677 Seminar in Physiology IV	1(1-0-2)
25	SCPS 678 Scientific Writing and Communication	1(0-3-0)
26	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
27	SCSP 680 Systems Physiology 1	3(3-0-6)
28	SCSP 681 Systems Physiology 2	3(3-0-6)
29	SCPS 698 Thesis	12(0-36-0)
30	SCPS 699 Dissertation	36(0-108-0)
31	SCPS 799 Dissertation	48(0-144-0)
32	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
2	SCPS 665 Practicum in Exercise for Health III	2(0-4-2)

3	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)
4	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)
5	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
6	SCPS 671 Foundations of Strength Training and Conditioning	1(0-2-1)
7	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
8	SCPS 676 Physiology of Aging	1(1-0-2)
9	SCPS 684 Functional Anatomy and Kinesiology	2(2-0-4)
10	SCPS 685 Nutrition for Health and Sport	2(2-0-4)
11	SCPS 686 Exercise for Special Populations	2(2-0-4)
12	SCPS 687 Health Risk Appraisal in Fitness Facility	2(2-0-4)
13	SCPS 688 Current Topics in Exercise Science	2(2-0-4)
14	SCPS 689 Human Physiology	2(2-0-4)
15	SCPS 690 Biostatistics in Biomedical Science	2(2-0-4)
16	SCPS 698 Thesis	12(0-36-0)
17	SCPS 696 Independent Study	6(0-18-0)
18	SCPS 801 Health Risks and Exercise Management in the Elderly	2(2-0-4)

Name: Assoc. Prof. Vitoon Saengsirisuwan, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Cer.	Certified Exercise Physiologist	American College of Sports Medicine (ACSM)	2022
Ph.D.	Physiological Sciences	University of Arizona, USA	2003
M.Sc.	Physiology of Exercise	Mahidol University	1995
B.Sc.	Physical Therapy	Mahidol University	1993

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Role of exercise in cardiometabolic syndrome
2. Study of sex difference in the development of metabolic dysfunction
3. Study of neuromuscular control in human body movement

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Chansela P, Potip B, Weerachayaphorn J, Kangwanrangsan N, Chukijrungroat N, Saengsirisuwan V*. Morphological alteration of the pancreatic islet in ovariectomized rats fed a high-fat high-fructose diet. Histochem Cell Biol 2022 Apr;157(4):427-42.	1/12	2022
	Moe TH, Wongveerakul P, Saengsirisuwan V, Charoenpanich N, Papadimitriou I*. Investigating the influence of ACTN3 R577X polymorphism on performance and angular kinematics using motion capture technology. Open Sports Sci J 2022 Mar;15(1):e1875399X2201030.	1/12	2022
	Winairuk T, Chaikeeree N, Sirisup S, Saengsirisuwan V,	1/12	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Boonsinsukh R*. Classification of limb and mobility impairments in persons with stroke using the STREAM. J Neurol Phys Ther 2022 Apr;46(2):96-102.		
	Surapongchai J*, Saengsirisuwan V, Rollo I, Randell RK, Nithitsuttibuta K, Sainiyom P, Leow CHW, Lee JKW. Hydration status, fluid intake, sweat rate, and sweat sodium concentration in recreational tropical native runners. Nutrients 2021 Apr;13(4):1374.	1/12	2021
	Buniam J, Chukijrungroat N, Rattanavichit Y, Surapongchai J, Weerachayaphorn J, Bupha-Intr T, Saengsirisuwan V*. 20-hydroxyecdysone ameliorates metabolic and cardiovascular dysfunction in high-fathigh-fructose-fed ovariectomized rats. BMC Compl Med Therapies. 2020 May;20(1):140.	1/12	2020
	Pumpho A, Chaikeeree N, Saengsirisuwan V, Boonsinsukh R*. Selection of the better dual-timed up and go cognitive task to be used in patients with stroke characterized by subtraction operation difficulties. Front Neurol. 2020 Apr;11:262.	1/12	2020
	Boonsinsukh R, Khumnonchai B, Saengsirisuwan V, Chaikeeree N*. The effect of the type of foam pad used in the modified Clinical Test of Sensory Interaction and Balance (mCTSIB) on the accuracy in identifying older adults with fall history. Hong Kong Physiother J 2020 Dec;40(2):133-143.	1/12	2020
	Buniam J, Chukijrungroat N, Khamphaya T, Weerachayaphorn J, Saengsirisuwan V*. Estrogen and voluntary exercise attenuate cardiometabolic syndrome and hepatic steatosis in ovariectomized rats fed a high-fat high-fructose diet. Am J Physiol Endocrinol Metab. 2019 May;316(5):E908-E921.	1/12	2019
	Jitmana R, Raksapharm S, Kijtawornrat A, Saengsirisuwan V, Bupha-Intr T*. Role of cardiac mast cells in exercise training-mediated cardiac remodeling	1/12	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	in angiotensin II-infused ovariectomized rats. Life Sci. 2019 Feb;219:209-18.		
	Prasannarong M*, Saengsirisuwan V, Surapongchai J, Buniam J, Chukijrungroat N, Rattanavichit Y. Rosmarinic acid improves hypertension and skeletal muscle glucose transport in angiotensin II-treated rats. BMC Complement Altern Med. 2019 Jul 8;19(1):165.	1/12	2019
	Winairuk T, Pang MYC, Saengsirisuwan V, Horak FB, Boonsinsukh R*. Comparison of measurement properties of three shortened versions of the balance evaluation system test (BESTest) in people with subacute stroke. J Rehabil Med. 2019 Sep;51(9):683-91.	1/12	2019

Current Teaching Load

1	SCPS 202 Basic Physiology	3(2-3-5)
2	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
3	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
4	SCID 221 Cardiovascular System I	3(2-2-5)
5	SCID 222 Cardiovascular System II	2(2-0-4)
6	SCID 223 Respiratory System	4(3-2-7)
7	SCID 224 Renal and Urinary System	3(3-0-6)
8	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
9	SCID 313 Endocrine System	3(3-0-6)
10	SCPS 606 Seminar in Physiology I	1(1-0-2)
11	SCPS 607 Seminar in Physiology II	1(1-0-2)
12	SCPS 608 Seminar in Physiology III	1(1-0-2)
13	SCPS 630 Scientific Paper Analysis	1(0-2-1)
14	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
15	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	2(2-0-4)
16	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	2(2-0-4)
17	SCPS 669 Clinical Exercise Physiology	2(2-0-4)
18	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
19	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)

20	SCPS 677 Seminar in Physiology IV	1(1-0-2)
21	SCPS 678 Scientific Writing and Communication	1(0-3-0)
22	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
23	SCSP 680 Systems Physiology 1	3(3-0-6)
24	SCPS 698 Thesis	12(0-36-0)
25	SCPS 699 Dissertation	36(0-108-0)
26	SCPS 799 Dissertation	48(0-144-0)
27	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
2	SCPS 664 Practicum in Exercise for Health II	2(0-4-2)
3	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)
4	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)
5	SCPS 669 Clinical Exercise Physiology	2(2-0-4)
6	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
7	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
8	SCPS 676 Physiology of Aging	1(1-0-2)
9	SCPS 684 Functional Anatomy and Kinesiology	2(2-0-4)
10	SCPS 685 Nutrition for Health and Sport	2(2-0-4)
11	SCPS 686 Exercise for Special Populations	2(2-0-4)
12	SCPS 687 Health Risk Appraisal in Fitness Facility	2(2-0-4)
13	SCPS 688 Current Topics in Exercise Science	2(2-0-4)
14	SCPS 689 Human Physiology	2(2-0-4)
15	SCPS 698 Thesis	12(0-36-0)
16	SCPS 696 Independent Study	6(0-18-0)
17	SCPS 801 Health Risks and Exercise Management in the Elderly	2(2-0-4)

Name: Assoc. Prof. Ratchakrit Srikuea, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Exercise Science	Mahidol University	2010
M.Sc.	Sports Science	Mahidol University	2004
B.Sc. (Hons.)	Sports Science	Mahidol University	2000

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Skeletal Muscle Physiology
2. Exercise Physiology

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Puangthong C, Sukhong P, Saengnual P, Srikuea R*, Chanda M*. A single bout of high-intensity exercise modulates the expression of vitamin D receptor and vitamin D-metabolising enzymes in horse skeletal muscle. Equine Vet J 2021 Jul;53(4):796-805.	1/12	2021
	Hirunsai M*, Srikuea R. Autophagy-lysosomal signaling responses to heat stress in tenotomy-induced rat skeletal muscle atrophy. Life Sci 2021 Jun;275:119352.	1/12	2021
	Srikuea R*, Hirunsai M, Charoenphandhu N. Regulation of vitamin D system in skeletal muscle and resident myogenic stem cell during development, maturation, and ageing. Sci Rep. 2020 May;10(1):8239.	1/12	2020
	Hirunsai M*, Srikuea R. Heat stress ameliorates tenotomy-induced inflammation in muscle-specific response via regulation of macrophage subtypes. J Appl Physiol. 2020 Mar;128(3):612-26.	1/12	2020

Current Teaching Load

1	SCPS 202 Basic Physiology	3(2-3-5)
2	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
3	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
4	SCID 221 Cardiovascular System I	3(2-2-5)
5	SCID 222 Cardiovascular System II	2(2-0-4)
6	SCID 223 Respiratory System	4(3-2-7)
7	SCID 224 Renal and Urinary System	3(3-0-6)
8	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
9	SCID 313 Endocrine System	3(3-0-6)
10	SCPS 606 Seminar in Physiology I	1(1-0-2)
11	SCPS 607 Seminar in Physiology II	1(1-0-2)
12	SCPS 608 Seminar in Physiology III	1(1-0-2)
13	SCPS 630 Scientific Paper Analysis	1(0-2-1)
14	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
15	SCPS 663 Practicum in Exercise for Health I	3(1-4-4)
16	SCPS 666 Neuromuscular Exercise Physiology	2(2-0-4)
17	SCPS 669 Clinical Exercise Physiology	2(2-0-4)
18	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
19	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
20	SCPS 673 Seminar in Advanced Exercise Physiology I	1(1-0-2)
21	SCPS 674 Seminar in Advanced Exercise Physiology II	1(1-0-2)
22	SCPS 677 Seminar in Physiology IV	1(1-0-2)
23	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
24	SCPS 680 Systems Physiology 1	3(3-0-6)
25	SCPS 698 Thesis	12(0-36-0)
26	SCPS 699 Dissertation	36(0-108-0)
27	SCPS 799 Dissertation	48(0-144-0)
28	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
2	SCPS 663 Practicum in Exercise for Health I	3(1-4-4)
3	SCPS 666 Neuromuscular Exercise Physiology	1(1-0-2)
4	SCPS 669 Clinical Exercise Physiology	2(2-0-4)
5	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
6	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)

7	SCPS 676 Physiology of Aging	1(1-0-2)
8	SCPS 684 Functional Anatomy and Kinesiology	2(2-0-4)
9	SCPS 685 Nutrition for Health and Sport	2(2-0-4)
10	SCPS 686 Exercise for Special Populations	2(2-0-4)
11	SCPS 687 Health Risk Appraisal in Fitness Facility	2(2-0-4))
12	SCPS 688 Current Topics in Exercise Science	2(2-0-4)
13	SCPS 689 Human Physiology	2(2-0-4)
14	SCPS 698 Thesis	12(0-36-0)
15	SCPS 696 Independent Study	6(0-18-0)
16	SCPS 801 Health Risks and Exercise Management in the Elderly	2(2-0-4)

Name: Asst. Prof. Nattapon Panupinthu, M.D., Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
M.D.	Medical	Mahidol University	2018
Ph.D.	Physiology	The University of Western Ontario, Canada	2008
B.Sc.	Medical Science	Mahidol University	2001

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Basic and translational research of calcium and bone metabolism
2. Mechanobiology of the musculoskeletal system
3. Preclinical imaging modalities for small animals in biomedical research

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Charoenphandhu N, Sooksawanwit S, Aeimlapa R, Thonapan N, Upanan P, Adulyaritthikul P, Krungchanuchat S, Panupinthu N, Teerapornpuntakit J, Rojviriya C, Lertsuwan K, Svasti S, Wongdee K*. Mild-intensity physical activity prevents cardiac and osseous iron deposition without affecting bone mechanical property or porosity in thalassemic mice. Sci Rep 2022 Apr;12:5959.	1/12	2022
	Chaimana R, Teerapornpuntakit J, Jantarajit W, Lertsuwan K, Krungchanuchat S, Panupinthu N, Krishnamra N, Charoenphandhu N*. CFTR-mediated anion secretion in parathyroid hormone-treated Caco-2 cells is associated with PKA and PI3K phosphorylation but not intracellular pH changes or	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Na+/K+-ATPase abundance. Biochem Biophys Rep 2021 Sep;27:101054.		
	Tiyasatkulkovit W, Aksornthong S, Adulyaritthikul P, Upanan P, Wongdee K, Aeimlapa R, et al. Excessive salt consumption causes systemic calcium mishandling and worsens microarchitecture and strength of long bones in rats. Sci Rep. 2021;11(1):1850.	1/12	2021
	Tiyasatkulkovit W, Promruk W, Rojviriya C, Pakawanit P, Chaimongkolnukul K, Kengkoom K, Teerapornpuntakit J, Panupinthu N, Charoenphandhu N*. Impairment of bone microstructure and upregulation of osteoclastogenic markers in spontaneously hypertensive rats. Sci Rep. 2019 Aug;9:12293.	1/12	2019

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 261 Physiology for Medical Science I	2(2-0-4)
4	SCBM 262 Physiology for Medical Science II	2(2-0-4)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCID 112 Introduction to Research	1(1-0-2)
7	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
8	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
9	SCID 221 Cardiovascular System I	3(2-2-5)
10	SCID 222 Cardiovascular System II	2(2-0-4)
11	SCID 223 Respiratory System	4(3-2-7)
12	SCID 224 Renal and Urinary System	3(3-0-6)
13	SCID 311 Gastrointestinal and Hepatobiliary System	3(2-2-5)
14	SCID 313 Endocrine System	3(3-0-6)
15	SCPS 606 Seminar in Physiology I	1(1-0-2)
16	SCPS 607 Seminar in Physiology II	1(1-0-2)
17	SCPS 608 Seminar in Physiology III	1(1-0-2)

18	SCPS 623 Neurophysiology	2(2-0-4)
19	SCPS 630 Scientific Paper Analysis	1(0-2-1)
20	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
21	SCPS 666 Neuromuscular Exercise Physiology	2(2-0-4)
22	SCPS 668 Metabolic Responses to Exercise and Environmental Stress	2(2-0-4)
23	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
24	SCPS 677 Seminar in Physiology IV	1(1-0-2)
25	SCPS 678 Scientific Writing and Communication	1(0-3-0)
26	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
27	SCSP 680 Systems Physiology 1	3(3-0-6)
28	SCSP 681 Systems Physiology 2	3(3-0-6)
29	SCPS 683 Professional Communication Skills	2(1-2-3)
30	SCPS 698 Thesis	12(0-36-0)
31	SCPS 699 Dissertation	36(0-108-0)
32	SCPS 799 Dissertation	48(0-144-0)
33	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 666 Neuromuscular Exercise Physiology	1(1-0-2)
2	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
3	SCPS 676 Physiology of Aging	1(1-0-2)
4	SCPS 689 Human Physiology	2(2-0-4)
5	SCPS 690 Biostatistics in Biomedical Science	2(2-0-4)
6	SCPS 698 Thesis	12(0-36-0)
7	SCPS 696 Independent Study	6(0-18-0)

Name: Lect. Kanit Bhukhai, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Biotherapies and Biotechnologies	Sorbonne Paris Cité University - Paris Diderot University (Paris 7)	2015
M.Sc.	Physiology	Mahidol University	2011
B.Sc.	Public Health	Mahidol University	2009

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Hematopoietic stem cells gene therapy
2. Vector development for gene therapy application
3. Signaling pathways involved in the regulation of erythropoiesis
4. Drug discovery: medicinal plants and hematopoiesis

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Cohen C, Coulon S, Bhukhai K, Neuraz A, Dussiot M, Fouquet G, Stang MBL, Flamant M, Vrtovsnik F, Hummel A, Knebelmann B, Mesnard L, Rondeau E, Maciel TT, Favale F, Casadevall N, Nguyen-Khoa T, Moutereau S, Legendre C, Benhamou M, Monteiro RC, Hermine O*, El Karoui K*, Moura IC. Erythrocytosis associated with IgA nephropathy. eBioMedicine 2022 Jan;75:103785.	1/12	2022
	Pornsukjantra T, Kangboonruang K, Tong-Ngam P, Tim-Aroon T, Wattanasirichaigoon D, Anurathapan U, Hongeng S, Tubsuwan A, Bhukhai K, Asavapanumas N*. A generation of human induced pluripotent stem cell line (MUi031-A) from a type-3 Gaucher disease patient carrying homozygous mutation on GBA1 gene. Stem Cell Res 2022 Apr;60:102698.	1/12	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Fouquet G, Thongsa-ad U, Lefevre C, Rousseau A, Tanhuad N, Khongkla E, Saengsawang W, Anurathapan U, Hongeng S, Maciel TT, Hermine O, Bhukhai K*. Iron-loaded transferrin potentiates erythropoietin effects on erythroblast proliferation and survival: a novel role through transferrin receptors. Exp Hematol 2021 Jul;99:12-20.e3	1/12	2021
	Nii T, Konno K, Matsumoto M, Bhukhai K, Borwornpinyo S, Sakai K, Hongeng S, Sugiyama D*. The bioactive peptide SL-13R expands human umbilical cord blood hematopoietic stem and progenitor cells in vitro. Molecules 2021 Apr;26(7):1995.	1/12	2021
	Rattananon P, Anurathapan U, Bhukhai K*, Hongeng S. The future of gene therapy for transfusion-dependent beta-thalassemia: The power of the lentiviral vector for genetically modified hematopoietic stem cells. Front Pharmacol 2021 Oct;12:.	1/12	2021
	Seephetdee C, Buasri N, Bhukhai K, Srisanga K, Manopwisedjaroen S, Lertjintanakit S, Phueakphud N, Pakiranay C, Kangwanrangsan N, Srichatrapimuk S, Kirdlarp S, Sungkanuparph S, Chutipongtanate S, Thitithanyanont A, Hongeng S, Wongtrakoongate P*. Mice immunized with the vaccine candidate hexapro spike produce neutralizing antibodies against SARS-CoV-2. Vaccines 2021 May;9(5):498.	1/12	2021
	Suksen K, Janpipatkul K, Reabroi S, Anantachoke N, Reutrakul V, Chairoungdua A, Thongon N, Bhukhai K*. Gambogic acid inhibits Wnt/β-catenin signaling and induces ER stress-mediated apoptosis in human cholangiocarcinoma. Asian Pac J Cancer Preven 2021 Jun;22(6):1913-20.	1/12	2021
	Tanhuad N, Thongsa-ad U, Sutjarit N, Yoosabai P, Panvongsa W, Wongniam S, Suksamrarn A, Piyachaturawat P, Anurathapan U, Borwornpinyo S, Chairoungdua A, Hongeng S*, Bhukhai K*. Ex vivo expansion and functional activity preservation of adult	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	hematopoietic stem cells by a diarylheptanoid from Curcuma comosa. Biomed Pharmacother 2021 Sep;143:112102.		

Current Teaching Load

1	SCID 313 Learning Techniques	1(1-0-2)
2	SCID 313 Endocrine System	3(3-0-6)
3	SCID 502 Cell Science	2(2-0-4)
4	SCBM 102 Learning Techniques	1(1-0-2)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCBM 498 Seminar in Biomedical Sciences	1(1-0-2)
7	SCBM 499 Senior Project	6 (0-12-6)
8	SCPS 101 Health and wellness	2(2-0-0)
9	SCPS 202 Basic Physiology	3(2-3-5)
10	SCPS 361 Physiology of Aging	2(2-0-4)
11	SCPS 363 Seminar in Translational Physiology	2(2-0-4)
12	SCPS 606 Physiology Seminar I	1(1-0-2)
13	SCPS 607 Physiology Seminar II	1(1-0-2)
14	SCPS 608 Physiology Seminar III	1(1-0-2)
15	SCPS 630 Scientific Paper Analysis	1(0-2-1)
16	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
17	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
18	SCPS 677 Seminar in Physiology IV	1(1-0-2)
19	SCPS 678 Scientific writing and communication	1(0-3-0)
20	SCPS 679 Advanced Topics in Physiology	3(3-0-6)
21	SCSP 681 Systems Physiology II	3(3-0-6)
22	SCPS 682 Professional communication skills	1(1-0-2)
23	SCPS 698 Thesis	12(0-36-0)
24	SCPS 799 Dissertation	48(0-144-0)
25	SCTX 629 Systemic Toxicology	2(2-0-4)
26	SCTX 693 Seminar in Principles of Toxicology	1(1-0-2)
27	SCTX 694 Seminar on Special Topics in Toxicology	1(1-0-2)
28	SCBC 618 Stem Cell and Cancer Bioscience	3(3-0-6)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)

2	SCPS 698 Thesis	12(0-36-0)
3	SCPS 696 Independent Study	6(0-18-0)

Name: Lect. Ioannis D. Papadimitriou, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Exercise Physiology	Victoria University, Australia	2018
M.Sc.	Exercise and Health	Aristotle University, Greece	2009
B.Sc.	Physical Education and Sports Science	Aristotle University, Greece	2002

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Sport Genetics
2. Exercise Physiology
3. The influence of genetics on force production and response to endurance exercise

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Moe TH, Wongveerakul P, Saengsirisuwan V, Charoenpanich N, Papadimitriou I*. Investigating the influence of ACTN3 R577X polymorphism on performance and angular kinematics using motion capture technology. Open Sports Sci J 2022 Mar;15(1):e1875399X2201030.	1/12	2022
	Harvey NR, Voisin S, Lea RA, Yan X, Benton MC, Papadimitriou ID, Jacques M, Haupt LM, Ashton KJ, Eynon N, Griffiths LR. Investigating the influence of mtDNA and nuclear encoded mitochondrial variants on high intensity interval training outcomes. Sci Rep. 2020 Jul 6;10(1):11089.	1/12	2022
	Papadimitriou ID, Eynon N, Yan X, Munson F, Jacques M, Kuang J, Voisin S, North KN, Bishop DJ*. A "human knockout" model to investigate the influence of the	1/12	2019

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	α-actinin-3 protein on exercise-induced mitochondrial adaptations. Sci Rep. 2019 Sep;9(1):12688.		
	Williams CJ, Gurd BJ, Bonafiglia JT, Voisin S, Li Z, Harvey N, Croci I, Taylor JL, Gajanand T, Ramos JS, Fassett RG, Little JP, Francois ME, Hearon CM Jr, Sarma S, Janssen SLJE, Van Craenenbroeck EM, Beckers P, Cornelissen VA, Pattyn N, Howden EJ, Keating SE, Bye A, Stensvold D, Wisloff U, Papadimitriou I, Yan X, Bishop DJ, Eynon N, Coombes JS. A Multi-Center Comparison of O2peak Trainability Between Interval Training and Moderate Intensity Continuous Training. Front Physiol. 2019 Feb 5;10:19.	1/12	2019
	Hiam D, Voisin S, Yan X, Landen S, Jacques M, Papadimitriou ID, et al. The association between bone mineral density gene variants and osteocalcin at baseline, and in response to exercise: The Gene SMART study. Bone. 2019;123:23-7.	1/12	2019

Current Teaching Load

1	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
2	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
3	SCPS 101 Health and Wellness	2(2-0-0)
4	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
5	SCPS 666 Neuromuscular Exercise Physiology	2(2-0-4)
6	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	2(2-0-4)
7	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
8	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
9	SCPS 677 Seminar in Physiology IV	1(1-0-2)
10	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
11	SCPS 698 Thesis	12(0-36-0)
12	SCPS 699 Dissertation	36(0-108-0)
13	SCPS 799 Dissertation	48(0-144-0)
14	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 661 Physical Fitness Testing and Exercise Prescription	3(2-2-5)
2	SCPS 666 Neuromuscular Exercise Physiology	1(1-0-2)
3	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)
4	SCPS 670 Professional Skills for Exercise Physiologist	2(2-0-4)
5	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
6	SCPS 676 Physiology of Aging	1(1-0-2)
7	SCPS 684 Functional Anatomy and Kinesiology	2(2-0-4)
8	SCPS 685 Nutrition for Health and Sport	2(2-0-4)
9	SCPS 686 Exercise for Special Populations	2(2-0-4)
10	SCPS 687 Health Risk Appraisal in Fitness Facility	2(2-0-4)
11	SCPS 688 Current Topics in Exercise Science	2(2-0-4)
12	SCPS 689 Human Physiology	2(2-0-4)
13	SCPS 698 Thesis	12(0-36-0)
14	SCPS 696 Independent Study	6(0-18-0)
15	SCPS 801 Health Risks and Exercise Management in the Elderly	2(2-0-4)

Name: Lect. Nittaya Boonmuen, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Physiology	Mahidol University	2016
B.Sc.	Physical Therapy	Chiang Mai University	2010

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Study of extracellular vesicle from natural products/ functional food
2. Theragnostic potential of extracellular vesicles in cancer and aged-related diseases
3. Discovery and development of new drugs from natural resources for cancers and aged related disease, i.e., Metabolic diseases

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Wongkaewkhiaw S, Wongrakpanich A, Krobthong S, Saengsawang W, Chairoungdua A, Boonmuen N*. Induction of apoptosis in human colorectal cancer cells by nanovesicles from fingerroot (Boesenbergia rotunda (L.) Mansf.). PLoS One 2022 Apr;17(4):e0266044.	1/12	2022
	Kaewkittikhun M, Boonmuen N, Kheolamai P, Manochantr S, Tantrawatpan C, Sutjarit N, Tantikanlayaporn D*. Andrographolide reduces lipid droplet accumulation in adipocytes derived from human bone marrow mesenchymal stem cells by suppressing regulators of adipogenesis. J Agric Food Chem 2021 Aug;69(32):9259-69.	1/12	2021
	Kaewkittikhun M, Boonmuen N, Kheolamai P, Manochantr S, Tantrawatpan C, Sutjarit N, Tantikanlayaporn D*. Andrographolide reduces lipid	1/12	2021

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	droplet accumulation in adipocytes derived from human bone marrow mesenchymal stem cells by suppressing regulators of adipogenesis. J Agric Food Chem 2021 Aug;69(32):9259-69.		
	Jearawuttanakul K, Khumkhrong P, Suksen K, Reabroi S, Munyoo B, Tuchinda P, et al. Cleistanthin A induces apoptosis and suppresses motility of colorectal cancer cells. Eur J Pharmacol. 2020;889:173604.	1/12	2020

Current Teaching Load

1	SCPS 101 Health and Wellness	2(2-0-0)
2	SCPS 202 Basic Physiology	3(2-3-5)
3	SCBM 261 Physiology for Medical Science I	2(2-0-4)
4	SCBM 262 Physiology for Medical Science II	2(2-0-4)
5	SCBM 263 Physiology for Medical Science III	3(3-0-6)
6	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
7	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
8	SCPS 606 Seminar in Physiology I	1(1-0-2)
9	SCPS 607 Seminar in Physiology II	1(1-0-2)
10	SCPS 608 Seminar in Physiology III	1(1-0-2)
11	SCPS 630 Scientific Paper Analysis	1(0-2-1)
12	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
13	SCPS 677 Seminar in Physiology IV	1(1-0-2)
14	SCPS 678 Scientific Writing and Communication	1(0-3-0)
15	SCPS 679 Advanced Topics in Physiology	3(1-4-4)
16	SCSP 681 Systems Physiology 2	3(3-0-6)
17	SCPS 698 Thesis	12(0-36-0)
18	SCPS 699 Dissertation	36(0-108-0)
19	SCPS 799 Dissertation	48(0-144-0)
20	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
2	SCPS 676 Physiology of Aging	1(1-0-2)
3	SCPS 689 Human Physiology	2(2-0-4)

4	SCPS 698 Thesis	12(0-36-0)
5	SCPS 696 Independent Study	6(0-18-0)

Name: Lect. Ratchaneevan Aeimlapa, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Physiology	Mahidol University	2018
M.Sc.	Physiology	Mahidol University	2014
B.Sc.	Biology	Mahidol University	2011

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Calcium and bone metabolism in type 2 diabetes mellitus
2. Thalassemic osteopathy
3. Microstructural analysis of bone

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Charoenphandhu N, Sooksawanwit S, Aeimlapa R, Thonapan N, Upanan P, Adulyaritthikul P, Krungchanuchat S, Panupinthu N, Teerapornpuntakit J, Rojviriya C, Lertsuwan K, Svasti S, Wongdee K*. Mild-intensity physical activity prevents cardiac and osseous iron deposition without affecting bone mechanical property or porosity in thalassemic mice. Sci Rep 2022 Apr;12:5959.	1/12	2022
	Imerb N, Thonusin C, Pratchayasakul W, Arunsak B, Nawara W, Aeimlapa R, Charoenphandhu N, Chattipakorn N, Chattipakorn SC*. Hyperbaric oxygen therapy improves age induced bone dyshomeostasis in non-obese and obese conditions. Life Sci 2022	1/12	2022

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
	Apr;295:120406.		
	Tiyasatkulkovit W, Aksornthong S, Adulyaritthikul P, Upanan P, Wongdee K, Aeimlapa R, et al. Excessive salt consumption causes systemic calcium mishandling and worsens microarchitecture and strength of long bones in rats. Sci Rep. 2021;11(1):1850.	1/12	2021
	Jantarajit W, Wongdee K, Lertsuwan K, Teerapornpuntakit J, Aeimlapa R, Thongbunchoo J, et al. Parathyroid hormone increases CFTR expression and function in Caco-2 intestinal epithelial cells. Biochem Biophys Res Commun. 2020;523(3):816-21.	1/12	2020
	Charoenphandhu N, Aeimlapa R, Sooksawanwit S, Thongbunchoo J, Teerapornpuntakit J, Svasti S, et al. Responses of primary osteoblasts and osteoclasts from hemizygous beta-globin knockout thalassemic mice with elevated plasma glucose to 1,25-dihydroxyvitamin D3. Sci Rep. 2019;9(1):13963.	1/12	2019

Current Teaching Load

1	SCPS 202 Basic Physiology	3(2-3-5)
2	SCBM 261 Physiology for Medical Science I	2(2-0-4)
3	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
4	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
5	SCPS 606 Seminar in Physiology I	1(1-0-2)
6	SCPS 607 Seminar in Physiology II	1(1-0-2)
7	SCPS 608 Seminar in Physiology III	1(1-0-2)
8	SCPS 630 Scientific Paper Analysis	1(0-2-1)
11	SCPS 639 Laboratory Teaching in Physiology	1(0-3-1)
12	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
13	SCPS 677 Seminar in Physiology IV	1(1-0-2)
14	SCPS 678 Scientific Writing and Communication	1(0-3-0)

15	SCSP 680 Systems Physiology 1	3(3-0-6)
16	SCPS 698 Thesis	12(0-36-0)
17	SCPS 699 Dissertation	36(0-108-0)
18	SCPS 799 Dissertation	48(0-144-0)
19	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
2	SCPS 676 Physiology of Aging	1(1-0-2)
3	SCPS 689 Human Physiology	2(2-0-4)
4	SCPS 690 Biostatistics in Biomedical Science	2(2-0-4)
5	SCPS 698 Thesis	12(0-36-0)
6	SCPS 696 Independent Study	6(0-18-0)

Name: Lect. Suwimol Tangtrongsup, Ph.D.

Education

Degree	Degree Name	Institute	Year of Graduation
Ph.D.	Clinical Sciences	Colorado State University, USA	2017
M.Sc.	Physiology	Mahidol University	2003
B.Sc.	Biology	Mahidol University	2000

Faculty/Institute/College

Department of Physiology, Faculty of Science, Mahidol University

Interesting Research Topics or Specialties

1. Studies of mesenchymal stem cell chondrogenic and osteogenic differentiation
2. Effect of hypertension on bone and mesenchymal stem cell differentiation
3. Effect of exercise on bone and mesenchymal stem cell differentiation

Academic work as not part of the study for degree certificate and published and disseminated in accordance with the stipulated criteria regarding academic rank appointment in five retrospective years

Types of Academic Work	Title	Standard Criteria and Weights	Year of Publication
Published research work	Chupia V, Tangtrongsup S, Saedan A, Ounnunkad J, Pikulkaew S, Suriyasathaporn W, Chaisri W*. Impact of storage conditions and mold types on aflatoxin B1 concentration in corn residue used as dairy feed in small holder dairy farms, Thailand. Biocontrol Sci 2022;27(2):99-105.	1/12	2022
	Kisiday JD, Schwartz JA, Tangtrongsup S, Goodrich LR, Grande DA. Culture Conditions that Support Expansion and Chondrogenesis of Middle-Aged Rat Mesenchymal Stem Cells. Cartilage. 2020;11(3):364-73.	1/12	2020
	Kisiday JD, Colbath AC, Tangtrongsup S. Effect of culture duration on chondrogenic preconditioning of equine bone marrow mesenchymal stem cells in self-assembling peptide hydrogel. J Orthop Res. 2019;37(6):1368-75.	1/12	2019

Current Teaching Load

1	SCID 216 Nervous System and Muscle Physiology	4(4-0-8)
2	SCID 217 Lab in Nervous System and Muscle Physiology	1(0-2-1)
3	SCPS 606 Seminar in Physiology I	1(1-0-2)
4	SCPS 607 Seminar in Physiology II	1(1-0-2)
5	SCPS 608 Seminar in Physiology III	1(1-0-2)
6	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
7	SCPS 677 Seminar in Physiology IV	1(1-0-2)
8	SCSP 680 Systems Physiology 1	3(3-0-6)
9	SCSP 681 Systems Physiology 2	3(3-0-6)
10	SCPS 698 Thesis	12(0-36-0)
11	SCPS 699 Dissertation	36(0-108-0)
12	SCPS 799 Dissertation	48(0-144-0)
13	SCPS 898 Dissertation	36(0-108-0)

Assigned Teaching Load for the Proposed Program

1	SCPS 672 Seminar in Exercise Physiology	1(1-0-2)
2	SCPS 676 Physiology of Aging	1(1-0-2)
3	SCPS 689 Human Physiology	2(2-0-4)
4	SCPS 698 Thesis	12(0-36-0)
5	SCPS 696 Independent Study	6(0-18-0)

Appendix C

Curriculum Mapping

● Major responsibility ○ Minor responsibility

Subjects	Ethics		Knowledge		Skills		Character	
	1	2	1	2	1	2	1	2
1. Required courses								
SCPS 661 Physical Fitness Testing and Exercise Prescription	●	●	●	●	●	●	●	●
SCPS 663 Practicum in Exercise for Health I	●	●	●	●	●	●	●	●
SCPS 666 Neuromuscular Exercise Physiology	●	●	●	●	●	○	●	●
SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress	●	●	●	●	●	○	●	●
SCPS 668 Metabolic Responses to Exercise and Environmental Stress	●	●	●	●	●	○	●	●
SCPS 671 Foundations of Strength Training and Conditioning	●	●	●	●	●	●	●	●
SCPS 670 Professional Skills for Exercise Physiologist	●	●	●	○	●	●	●	●
SCPS 672 Seminar in Exercise Physiology	●	●	●	○	●	●	●	●
SCPS 676 Physiology of Aging	●	●	●	●	●	●	●	○
SCPS 690 Biostatistics in Biomedical Science	●	●		○	○		○	
2. Elective courses								
SCPS 664 Practicum in Exercise for Health II	●	●	●	●	●	●	●	●
SCPS 665 Practicum in Exercise for Health III	●	●	●	●	●	●	●	●
SCPS 669 Clinical Exercise Physiology	●	●	●	●	●	●	●	●
SCPS 684 Functional Anatomy and Kinesiology	●	●	○	○	●	●	○	○
SCPS 685 Nutrition for Health and Sport	●	●	●	●	●	○	○	○

Subjects	Ethics		Knowledge		Skills		Character	
	1	2	1	2	1	2	1	2
SCPS 686 Exercise for Special Populations	●	●	●	●	●	●	●	●
SCPS 687 Health Risk Appraisal in Fitness Facility	●	●	○	●	○	●	●	○
SCPS 688 Current Topics in Exercise Science	●	●	●	○	●	●	○	●
SCPS 689 Human Physiology	●	●	○		○	○	○	○
SCPS 801 Health Risks and Exercise Management in the Elderly	●	●	●	●	●	●	●	●
3. Thesis/Independent Study								
SCPS 698 Thesis	●	●	●	●	●	●	●	●
SCPS 696 Independent Study	●	●	●	●	●	●	●	●

Table of Relationship between Learning Outcomes of the Program and Core Value of Mahidol University

Learning Outcomes (as stated in Section 4, item no. 2)	Core value of Mahidol University
1. Ethics	
1.1 Perform professional morality and ethics in academic work and research	Integrity
1.2 Be honest on conducting, writing, and presenting	Integrity
2. Knowledge	
2.1 Understand knowledge in exercise physiology	Mastery
2.2 Able to design exercise prescription for good health and well-being based on exercise physiology knowledge	Mastery, Altruism
3. Skills	
3.1 Be responsible for the assigned work as individual and team	Determination, Harmony
3.2 Ability to work as a team with leadership and human relationship	Harmony, Leadership
4. Character	
4.1 Able to analyze and criticize the problem to reach the conclusion systematically	Mastery
4.2 Demonstrate the knowledge in exercise physiology, synthesize new body of knowledge for people's health and well-being, and effectively communicate to the public	Originality

Appendix D
Program Learning Outcomes

Table 1: Comparison between before and after revised objective of the program

Objective of the Program BE. 2017	Revised Objective of the Program BE. 2022
Be professional morals and ethics in academic and profession	Ability to demonstrate honesty, moral, and professional ethics
Have knowledge of exercise physiology principles in both theory and practice	Ability to apply theoretical and practical aspects of exercise physiology
Have ability to perform searching, design the experiment to analyze and synthesize the knowledge in exercise physiology	Ability to demonstrate responsibility, leadership and teamwork skills, and cooperate professionally with others
Be responsible and able to work with the others	Ability to analyze, solve problem, synthesize new body of knowledge, and effectively communicate to the public
Have ability to analyze and use information technology to search, collect, communicate, transfer, and disseminate the knowledge to society effectively	

Table 2: Relationship between objective of the program and program learning outcome

Objective of the Program	Program Learning Outcome*			
	PLO1	PLO2	PLO3	PLO4
Ability to demonstrate honesty, moral, and professional ethics	✓		✓	✓
Ability to apply theoretical and practical aspects of exercise physiology		✓	✓	✓
Ability to demonstrate responsibility, leadership and teamwork skills, and cooperate professionally with others	✓		✓	✓
Ability to analyze, solve problem, synthesize new body of knowledge, and effectively communicate to the public	✓	✓	✓	✓

PLO1: Apply moral and professional ethics with work discipline and honesty on academic work and research integrity

PLO2: Apply the concepts of exercise physiology to demonstrate how the body and organ systems respond to acute bout of exercise and exercise training

PLO3: Demonstrate work responsibility, leadership, interpersonal relationship, and ability to work with others to implement physical fitness testing and classify exercise prescription with knowledge in exercise physiology

PLO4: Execute physical fitness testing, design exercise prescription, and disseminate assignment or research work in exercise physiology for human health benefits to the public with effective communications

Table 3: Standard domains of learning outcome and Program Learning Outcomes

Domains	Standard Learning Outcomes (TQF)	Program Learning Outcomes			
		PLO1	PLO2	PLO3	PLO4
Ethics	1.1 Perform professional morality and ethics in academic work and research	✓		✓	✓
	1.2 Be honest on conducting, writing, and presenting	✓		✓	✓
Knowledge	2.1 Understand knowledge in exercise physiology		✓	✓	✓
	2.2 Able to design exercise prescription for good health and well-being based on exercise physiology knowledge		✓	✓	✓
Skills	3.1 Be responsible for the assigned work as individual and team	✓		✓	✓
	3.2 Ability to work as a team with leadership and human relationship	✓		✓	✓
Character	4.1 Able to analyze and criticize the problem to reach the conclusion systematically		✓	✓	✓
	4.2 Demonstrate the knowledge in exercise physiology, synthesize new body of knowledge for people's health and well-being, and effectively communicate to the public	✓	✓	✓	✓

Table 4: Learning and Assessment Strategies for Program Learning Outcomes Evaluation

PLOs	Learning Method	Assessment
PLO1 Apply moral and professional ethics with work discipline and honesty on academic work and research integrity	1) Group/Individual assignment 2) Laboratory report 3) Case study 4) Seminar 5) Practicum 6) Thesis/Independent Study	1) Assess behavior according to morality and ethics 2) Completion of assigned tasks on time without plagiarism/cheating 3) Assess knowledge, class participation, and discussion 4) Assess quality of presentation, organization, interpretation, and question handling 5) Completion of assigned project and presentation 6) Assess responsibility, quality of research, organization, interpretation, and knowledge transfer
PLO2 Apply the concepts of exercise physiology to demonstrate how the body and organ systems respond to acute bout of exercise and exercise training	1) Lecture 2) Laboratory 3) Case study 4) Seminar 5) Practicum 6) Thesis/Independent Study	1) Written exam 2) Hand-on demonstration 3) Assess knowledge, class participation, and discussion 4) Assess quality of presentation, organization, interpretation, and question handling 5) Completion of assigned project and presentation 6) Assess responsibility, quality of research, organization, interpretation, and knowledge transfer

PLOs	Learning Method	Assessment
PLO3 Demonstrate work responsibility, leadership, interpersonal relationship, and ability to work with others to implement physical fitness testing and classify exercise prescription with knowledge in exercise physiology	1) Lecture 2) Laboratory 3) Case study 4) Practicum	1) Written exam 2) Hand-on demonstration 3) Assess knowledge, class participation, and discussion 4) Completion of assigned project and presentation
PLO4 Execute physical fitness testing, design exercise prescription, and disseminate assignment or research work in exercise physiology for human health benefits to the public with effective communications	1) Group/Individual assignment 2) Laboratory report 3) Practicum 4) Thesis/Independent Study	1) Assess behavior according to morality and ethics 2) Completion of assigned tasks on time without plagiarism/cheating 3) Completion of assigned project and presentation 4) Assess responsibility, quality of research, organization, interpretation, and knowledge transfer

Table 5: Relationship between Courses of the Program and Program Learning Outcomes

Code	Name	Credits	PLOs			
			1	2	3	4
1) Required Courses						
SCPS 661	Physical Fitness Testing and Exercise Prescription	3(2-2-5)	R	R	P	P
SCPS 663	Practicum in Exercise for Health I	3(1-4-4)	P	P	P	P
SCPS 666	Neuromuscular Exercise Physiology	1(1-0-2)	R	I	I	
SCPS 667	Cardiorespiratory Responses to Exercise and Environmental Stress	1(1-0-2)	R	I	I	
SCPS 668	Metabolic Responses to Exercise and Environmental Stress	1(1-0-2)	R	I	I	
SCPS 670	Professional Skills for Exercise Physiologist	2(2-0-4)	R	R		P
SCPS 671	Foundations of Strength Training and Conditioning	1(0-2-1)	R	R	P	P
SCPS 672	Seminar in Exercise Physiology	1(1-0-2)	R	P		P
SCPS 676	Physiology of Aging	1(1-0-2)	R	R		
SCPS 690	Biostatistics in Biomedical Science	2(2-0-4)	R	I		
2) Elective Courses						
SCPS 664	Practicum in Exercise for Health II	2(0-4-2)	P	P	P	P
SCPS 665	Practicum in Exercise for Health III	2(0-4-2)	P	P	P	P
SCPS 669	Clinical Exercise Physiology	2(2-0-4)	R	R	P	P
SCPS 685	Nutrition for Health and Sport	2(2-0-4)	R	R	R	
SCPS 686	Exercise for Special Populations	2(2-0-4)	R	R	R	P
SCPS 687	Health Risk Appraisal in Fitness Facility	2(2-0-4)	R	I		
SCPS 688	Current Topics in Exercise Science	2(2-0-4)	R	R		P
SCPS 689	Human Physiology	2(2-0-4)	R	I		
SCPS 801	Health Risks and Exercise Management in the Elderly	2(2-0-4)	R	R	P	P
3) Thesis/Independent Study						
SCPS 698	Thesis	12(0-36-0)	M	M	M	M
SCPS 696	Independent Study	6(0-18-0)	M	M	M	M

I = ELO is introduced & assessed R = ELO is reinforced & assessed

P = ELO is practiced & assessed M = Level of mastery is assessed

Table 6: The expectation of learning outcomes at the end of the academic year
For Plan 1.2 Academic (Course work and research)

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
1st	1. Students should be able to apply the concepts of exercise physiology for good health and well-being of the communities with moral and professional ethics	PLO1, PLO2
	2. Students should be able to demonstrate work responsibility, leadership, interpersonal relationship, and ability to work with others to implement physical fitness testing and classify exercise prescription with knowledge in exercise physiology	PLO3
2nd	1. Students should be able to disseminate assignment or research work based on exercise physiology or related fields using research skills, analytical skills, and critical thinking	PLO4
	2. Students should demonstrate communication and information technology skills for disseminate the key findings of thesis to public	PLO4

For Plan B

Year of study	Knowledge, skills, and any other expected learning outcomes	PLO
1st	1. Students should be able to apply the concepts of exercise physiology for good health and well-being of the communities with moral and professional ethics	PLO1, PLO2
	2. Students should be able to demonstrate work responsibility, leadership, interpersonal relationship, and ability to work with others to implement physical fitness testing and classify exercise prescription with knowledge in exercise physiology	PLO3
2nd	1. Students should be able to disseminate assignment or research work based on exercise physiology or related fields using research skills, analytical skills, and critical thinking	PLO4
	2. Students should demonstrate communication and information technology skills for disseminate the key findings of Independent Study to public	PLO4

Appendix E

(For only Revised Curriculum)
The Revision of Master's Degree Program
in Exercise Physiology Volume 2017
Faculty of Science
and Faculty of Graduate Studies, Mahidol University

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1. **The Curriculum was approved by the Office of the Higher Education Commission on .....**

2. **The Mahidol University Council approved the program in its meeting 592 on May 24, 2023**

3. **The revised curriculum will be effective with student class 2017 from the 1st semester of the Academic Year 2017 onwards.**

4. **Rationale of revision**

4.1 The curriculum is revised to be in accordance with Thai Qualification Framework for Higher Education 2022

4.2 The curriculum is revised to update the courseworks, academic staff, and change from regular to special program.

5. **The details of the revision**

5.1 Request for offering the new study plan, teaching schedule, courses**,** and updated academic staff of the program

Staff of the Current Program	Staff of the Revised Program
Prof. Dr. Jonggonnee Wattanapermpool	Prof. Dr. Jonggonnee Wattanapermpool
Prof. Dr. Narattaphol Charoenphandhu, MD.	Prof. Dr. Narattaphol Charoenphandhu, MD.
Assoc. Prof. Dr. Arthit Chairoungdua	Assoc. Prof. Dr. Arthit Chairoungdua
Assoc. Prof. Dr. Jittima Weerachayaphorn	Assoc. Prof. Dr. Jittima Weerachayaphorn
Assoc. Prof. Dr. Sunhapas Soodvilai	Assoc. Prof. Dr. Sunhapas Soodvilai
Assoc. Prof. Dr. Tepmanas Bupha-Intr	Assoc. Prof. Dr. Tepmanas Bupha-Intr
Assoc. Prof. Dr. Vitoon Saengsirisuwan	Assoc. Prof. Dr. Vitoon Saengsirisuwan
Asst. Prof. Dr. Ratchakrit Srikuea	Assoc. Prof. Dr. Ratchakrit Srikuea
Asst. Prof. Dr. Nattapon Panupinthu, MD.	Asst. Prof. Dr. Nattapon Panupinthu, MD.

Staff of the Current Program	Staff of the Revised Program
Lect. Dr. Kanit Bhukhai	Lect. Dr. Kanit Bhukhai
Lect. Dr. Ioannis D. Papadimitriou	Lect. Dr. Ioannis D. Papadimitriou
Prof. Dr. Chatchai Muanprasat, MD.	-
Asst. Prof. Dr. Witchuda Saengsawang	-
-	Lect. Dr. Nittaya Boonmuen
-	Lect. Dr. Ratchaneevan Aeimlapa
-	Lect. Dr. Suwimol Tangtrongsup

The Comparison Table of Courses between the Current Program and Revised Program

Courses of the Current Program	Courses of the Revised Program	Remark
Core Courses (18 credits)	**Core Courses (16 credits)**	
GRID 603 Biostatistics 3(3-0-6) บฑคร ๖๐๓ ชีวสถิติ	-	Cancelled
SCPS 661 Physical Fitness Testing and Exercise Prescription 3(2-2-5) วทสร ๖๖๑ การทดสอบสมรรถภาพร่างกายและการแนะนำการออกกำลังกาย	SCPS 661 Physical Fitness Testing and Exercise Prescription 3(2-2-5) วทสร ๖๖๑ การทดสอบสมรรถภาพร่างกายและการแนะนำการออกกำลังกาย	Changed Description
SCPS 663 Practicum in Exercise for Health I 3(1-4-4) วทสร ๖๖๓ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ	SCPS 663 Practicum in Exercise for Health I 3(1-4-4) วทสร ๖๖๓ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๑	Changed title
SCPS 666 Neuromuscular Exercise Physiology 2(2-0-4) วทสร ๖๖๖ สรีรวิทยาการออกกำลังกายของระบบประสาทและกล้ามเนื้อ	SCPS 666 Neuromuscular Exercise Physiology 1(1-0-2) วทสร ๖๖๖ สรีรวิทยาการออกกำลังกายของระบบประสาทและกล้ามเนื้อ	Changed credit
SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress 2(2-0-4) วทสร ๖๖๗ การตอบสนองของระบบหัวใจและระบบหายใจต่อการออกกำลังกายและสภาวะแวดล้อม	SCPS 667 Cardiorespiratory Responses to Exercise and Environmental Stress 1(1-0-2) วทสร ๖๖๗ การตอบสนองของระบบหัวใจและระบบหายใจต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม	Changed credit and description
SCPS 668 Metabolic Responses to Exercise and Environmental Stress 2(2-0-4) วทสร ๖๖๘ การตอบสนองทางเมแทบอลิซึมต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม	SCPS 668 Metabolic Responses to Exercise and Environmental Stress 1(1-0-2) วทสร ๖๖๘ การตอบสนองทางเมแทบอลิซึมต่อการออกกำลังกายและความเครียดจากสภาวะแวดล้อม	Changed credit and description
SCPS 670 Professional Skills for Exercise Physiologist 2(2-0-4) วทสร ๖๗๐ ทักษะทางวิชาชีพสำหรับนักสรีรวิทยาการออกกำลังกาย	SCPS 670 Professional Skills for Exercise Physiologist 2(2-0-4) วทสร ๖๗๐ ทักษะทางวิชาชีพสำหรับนักสรีรวิทยาการออกกำลังกาย	Unchanged
-	SCPS 671 Foundations of Strength Training and Conditioning 1(0-2-1) วทสร ๖๗๑ แนวทางและวิธีการฝึกซ้อมเพื่อเพิ่ม	Transfer from elective course and change

Courses of the Current Program	Courses of the Revised Program	Remark
	ความแข็งแรง	credit
SCPS 672 Seminar in Exercise Physiology 1(1-0-2) วทสร ๖๗๒ สัมมนาทางสรีรวิทยาการออกกำลังกาย	SCPS 672 Seminar in Exercise Physiology 1(1-0-2) วทสร ๖๗๒ สัมมนาทางสรีรวิทยาการออกกำลังกาย	Unchanged
-	SCPS 676 Physiology of Aging 1(1-0-2) วทสร ๖๗๖ สรีรวิทยาการชราภาพ	Added and Changed credit
-		2(2-0-4)
	SCPS 690 Biostatistics in Biomedical Science 2(2-0-4) วทสร ๖๙๐ ชีวสถิติทางวิทยาศาสตร์ชีวการแพทย์	New
Elective Courses (6 credits)	**Elective Courses (8 credits)**	
SCID 500 Cell and Molecular Biology 3(3-0-6) วทคร ๕๐๐ ชีววิทยาระดับเซลล์และโมเลกุล	-	Cancelled
SCID 507 Microscopic Technique 1(0-2-1) วทคร ๕๐๗ เทคนิคการใช้กล้องจุลทรรศน์	-	Cancelled
SCID 508 Biomolecular and Spectroscopy Techniques 1(0-2-1) วทคร ๕๐๘ เทคนิคด้านชีวโมเลกุลและด้านสเปกโทรสโกปี	-	Cancelled
SCID 509 Separation Techniques 1(0-2-1) วทคร ๕๐๙ เทคนิคการแยกสาร	-	Cancelled
SCID 513 Animal Cell Culture Techniques 1(0-2-1) วทคร ๕๑๓ เทคนิคการเพาะเลี้ยงเซลล์สัตว์	-	Cancelled
SCID 518 Generic Skills in Science Research 1(1-0-2) วทคร ๕๑๘ ทักษะทั่วไปในการวิจัยทางวิทยาศาสตร์	-	Cancelled
SCPS 630 Scientific Paper Analysis 1(0-3-1) วทสร ๖๓๐ การวิเคราะห์บทความทางวิทยาศาสตร์	-	Cancelled

Courses of the Current Program	Courses of the Revised Program	Remark
SCPS 639 Laboratory Methods in Physiology 1(0-3-1)	-	Cancelled
-	SCPS 664 Practicum in Exercise for Health II 2(0-4-2) วทสร ๖๖๔ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๒	New
-	SCPS 665 Practicum in Exercise for Health III 2(0-4-2) วทสร ๖๖๕ การฝึกปฏิบัติการออกกำลังกายเพื่อสุขภาพ ๓	New
SCPS 669 Clinical Exercise Physiology 2(2-0-4) วทสร ๖๖๙ สรีรวิทยาการออกกำลังกายทางคลินิก	SCPS 669 Clinical Exercise Physiology 2(2-0-4) วทสร ๖๖๙ สรีรวิทยาการออกกำลังกายทางคลินิก	Unchanged
-	SCPS 684 Functional Anatomy and Kinesiology 2(2-0-4) วทสร ๖๘๔ กายวิภาคศาสตร์และวิทยาศาสตร์การเคลื่อนไหว	New
-	SCPS 685 Nutrition for Health and Sport 2(2-0-4) วทสร ๖๘๕ โภชนาการสำหรับสุขภาพและการกีฬา	New
-	SCPS 686 Exercise for Special Populations 2(2-0-4) วทสร ๖๘๖ การออกกำลังกายสำหรับกลุ่มเฉพาะ	New
-	SCPS 687 Health Risk Appraisal in Fitness Facility 2(2-0-4) วทสร ๖๘๗ การประเมินความเสี่ยงด้านสุขภาพในสถานที่ออกกำลังกาย	New
-	SCPS 688 Current Topics in Exercise Science 2(2-0-4) วทสร ๖๘๘ หัวข้อปัจจุบันทางวิทยาศาสตร์การออกกำลังกาย	New
-	SCPS 689 Human Physiology 2(2-0-4) วทสร ๖๘๙ สรีรวิทยาในมนุษย์	New

Courses of the Current Program	Courses of the Revised Program	Remark
-	SCPS 801 Health Risks and Exercise Management in the Elderly 2(2-0-4) วทสร ๘๐๑ ความเสี่ยงด้านสุขภาพและการจัดการการออกกำลังกายในผู้สูงอายุ	New
Thesis (12 credits) SCPS 698 Thesis 12(0-36-0) วทสร ๖๙๘ วิทยานิพนธ์	**Thesis (12 credits)** SCPS 698 Thesis 12(0-36-0) วทสร ๖๙๘ วิทยานิพนธ์	Changed Description
-	**Independent Study (6 credits)** SCPS 696 Independent Study 6(0-18-0) วทสร ๖๙๖ การค้นคว้าอิสระ	New

6. The Comparison Table of the Curriculum Structure between the Current Program and Revised Program Based on Thai Qualification Framework for Higher Education 2022 (set by Ministry of Education)

For Plan 1.2 Academic (Course work and research)

Course Category	Credits		
	Thai Qualification Framework for Higher Education 2022	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Required courses	12 Credits	18	16
2. Elective courses		6	8
3. Thesis	≥ 12 Credits	12	12
Total credits (not less than)	36	36	36

For Plan 2 Profession

Course Category	Credits		
	Thai Qualification Framework for Higher Education 2022	Curriculum Structure of the Current Program	Curriculum Structure of the Revised Program
1. Required courses	12 Credits	-	16
2. Elective courses		-	14
3. Independent Study	3-6 Credits	-	6
Total credits (not less than)	36	-	36