

Course Syllabus
SIPS 525
Academic Year 2026
Department of Physiology
Faculty of Medicine Siriraj Hospital, Mahidol University

Course ID and name:	SIPS 525: Seminar in Medical Physiological Research
Course coordinator:	Instructor Thaksaon Kittipassorn, MD, PhD thaksaon.kit@mahidol.ac.th Ms. Kitchaya Pongwattanapakin, MSc kitchaya.pong@gmail.com
Instructors:	Assoc. Prof. Wattana Watanapa, MD, PhD Assoc. Prof. Chailerd Pichitpornchai, MD, PhD Instructor Luecha Boontaveekul, MD, MSc, Dip., Thai Board of Family Medicine Assoc. Prof. Suwattanee Kooptiwut, MD, PhD Assist. Prof. Sompol Tapechum, MD, PhD Assoc. Prof. Sorachai Srisuma, MD, PhD Assoc. Prof. Panapat Uawithya, MD, PhD Assoc. Prof. Reawika Chaikomin, MD, PhD Assoc. Prof. Narawut Pakaprot, MD, PhD Assoc. Prof. Chantacha Sitticharoon, MD, PhD Assist. Prof. Yodying Dangprapai, MD, PhD Instructor Katesirin Ruamyod, PhD Instructor Thaksaon Kittipassorn, MD, PhD Assist. Prof. Rujapope Sutiwisesak, MD, PhD Instructor Patamat Nitiwarangoon, MD, PhD Instructor Thanus Teeratitayang-gool, MD, Dip., Thai Board of Anesthesiology Instructor Kanat Chanthongdee, MD, PhD
Credits:	1 (1-0-2) (lecture – laboratory – self-study)
Curriculum:	Masters of Science Program in Medical Physiology
Course type:	☐ Core ☒ Required ☐ Electives
Semester offering:	2/2026
Prerequisite:	None
Date of Latest Revision:	14 July 2026

Course Description:

Analysis of recent research publications in medical physiology, scientific knowledge, research ethics, rationales, conceptual frameworks, experimental designs, data interpretation, prediction of potential problems and solutions, strength and opportunity for improvement, research planning in biomedicine and medical physiology

Course-level Learning Outcomes (CLOs)

Upon completion of this course, students are able to:

1. Conceptualize research problems, ideas, hypotheses and experimental designs into physiological/biomedical research framework.
2. Criticize and discuss the correctness and reliability of the information from research articles of interest.
3. Analyze the data acquired from research articles of interest.
4. Present the acquired data in a correct format.
5. Demonstrate responsibility for assigned tasks.

Constructive Alignment of CLOs and Program's ELOs

CLOs	ELO1	ELO2	ELO3	ELO4
1. Conceptualize research problems, ideas, hypotheses and experimental designs into physiological/biomedical research framework.	P	P	R	P
2. Criticize and discuss the correctness and reliability of the information from research articles of interest	P	P	R	P
3. Analyze the data acquired from research articles of interest.	P	P	R	P
4. Present the acquired data in a correct format	P	P		P
5. Demonstrate responsibility for assigned tasks.				P

Remarks: Show the level of the course management with the symbols I, R, P, and M.

I = PLO is Introduced and Assessed

P = PLO is Practiced and Assessed

R = PLO is Reinforced and Assessed

M = Level of Mastery is Assessed

Program's Expected Learning Outcomes

1. Demonstrate the current medical physiological knowledge for common clinical application.
2. Evaluate the scientific research and major research developments.
3. Perform medical physiology research with a technique in an ethical way to test an idea or hypothesis in an area of interest.
4. Communicate knowledge and ideas of medical physiological research clearly to peers and the scientific community at national level.

Course Schedule and teaching/assessment plan

No .	Date	Topic	Hours			CLOs	Teaching & learning strategy	Assessment (in-class)	Lecturers
	Time		Lecture	Laboratory	Self Study				
1	Wed, 15 July 2026 1.00 – 2.00 p.m.	Orientation and overview	1	-	2	4,5	Onsite lecture	Reflection / Question	Dr. Sorachai /Dr. Thaksaon
2	3 Aug – 31 Dec 2026	Scientific article selection 1	0.5	-	1	2,5	Consultation with the advisor to select a scientific article of interest	Reflection / Question	Advisor
3	3 Aug – 31 Dec 2026	Scientific article discussion 1	1	-	2	1,2,3,5	Analysis and discussion of the selected scientific article and the critical appraisal matrix sheet. <i>(Students must submit the completed matrix sheet to their advisor and the course coordinators at least three working days before the scheduled discussion.)</i>	Reflection / Question	Advisor
4	3 Aug – 31 Dec 2026	Review of slide outline and draft slides 1	1	-	2	1,2,3,4,5	Consultation with the advisor on slide outline and draft slides	Reflection / Question	Advisor
5	3 Aug – 31 Dec 2026	First rehearsal 1	1	-	2	1,2,3,4,5	Presentation of a full draft to the advisor or lab group.	Reflection / Question	Advisor
6	3 Aug – 31 Dec 2026	Second rehearsal 1	1	-	2	1,2,3,4,5	Refinement and polishing of the presentation, focusing on transitions, timing, and readiness for Q&A.	Reflection / Question, Preparation evaluation	Advisor
7	3 Aug – 31 Dec 2026	Scientific article presentation 1	1	-	2	1,2,3,4,5	Delivery of the presentation	Presentation evaluation	Faculty

8	1 Jan – 30 Apr 2027	Scientific article selection 2	0.5	-	1	2,5	Consultation with the advisor to select a scientific article of interest	Reflection / Question	Advisor
9	1 Jan – 30 Apr 2027	Scientific article discussion 2	1	-	2	1,2,3,5	Analysis and discussion of the selected scientific article and the critical appraisal matrix sheet. <i>(Students must submit the completed matrix sheet to their advisor and the course coordinators at least three working days before the scheduled discussion.)</i>	Reflection / Question	Advisor
10	1 Jan – 30 Apr 2027	Review of slide outline and draft slides 2	1	-	2	1,2,3,4,5	Consultation with the advisor on slide outline and draft slides	Reflection / Question	Advisor
11	1 Jan – 30 Apr 2027	First rehearsal 2	1	-	2	1,2,3,4,5	Presentation of a full draft to the advisor or lab group.	Reflection / Question	Advisor
12	1 Jan – 30 Apr 2027	Second rehearsal 2	1	-	2	1,2,3,4,5	Refinement and polishing of the presentation, focusing on transitions, timing, and readiness for Q&A.	Reflection / Question, Preparation evaluation	Advisor
13	1 Jan – 30 Apr 2027	Scientific article presentation 2	1	-	2	1,2,3,4,5	Delivery of the presentation	Presentation evaluation	Faculty
14	3 Aug 2026 – 30 Apr 2027	Peer presentation attendance and question/appraisal contribution 1	1	-	2	1,2,3,5	Attendance at a peer's presentation and contribution by asking questions or providing appraisals of the research article presented	Question/ appraisal evaluation	Faculty
15	3 Aug 2026 – 30 Apr 2027	Peer presentation attendance and question/appraisal contribution 2	1	-	2	1,2,3,5	Attendance at a peer's presentation and contribution by asking questions or providing appraisals of the research article presented	Question/ appraisal evaluation	Faculty

16	3 Aug 2026 – 30 Apr 2027	Peer presentation attendance and question/appraisal contribution 3	1	-	2	1,2,3,5	Attendance at a peer's presentation and contribution by asking questions or providing appraisals of the research article presented	Question/ appraisal evaluation	Faculty
		Total hours of the study	15	0	30				

Course Assignments

- Two presentations of research articles (a different article for each presentation; 35 minutes each)
 - Pre-presentation submission
 - For each presentation, students are required to submit the following materials:
 1. the full-text version of the selected scientific article;
 2. the conceptual framework; and
 3. the citation information for the article, including the article title and journal name.
 - The complete set of materials must be submitted to Ms. Soontaree Meechamnan at soontaree.mee@mahidol.ac.th no later than seven calendar days before the scheduled presentation.
- Attendance and question/appraisal contribution in at least three peer-presentation sessions by 30 April 2027. For each session to be counted, the student must attend the session and contribute at least one question or appraisal of the research article presented.
 - In each peer-presentation session, students may ask more than one question and/or provide more than one appraisal. However, only the highest-scoring contribution from that session will be recorded.
 - Students may attend and contribute a question/appraisal in more than three peer-presentation sessions. However, only the three highest-scoring sessions will be used for assessment.

CLO5 will be considered automatically failed if a student:

- attends fewer than three peer-presentation sessions by 30 April 2027, **OR**
- fails to provide at least one question or appraisal in any of the three required sessions

Assessment Criteria

GRADE DISTRIBUTION

- **5%** **Preparation 1** evaluated by the advisor after the second rehearsal using the preparation evaluation rubric
- **40%** **Presentation 1** evaluated by the faculty, including the advisor, using the presentation evaluation rubric
- **5%** **Preparation 2** evaluated by the advisor after the second rehearsal using the preparation evaluation rubric
- **40%** **Presentation 2** evaluated by the faculty, including the advisor, using the presentation evaluation rubric
- **10%** **Quality of the student's question or appraisal** during three peer-presentation sessions, evaluated by the faculty using the question/appraisal evaluation rubric

PREPARATION EVALUATION RUBRIC

Criterion	4	3	2	1	Weight	CLO addressed
Appointment & punctuality	Excellence	Good	Fair	Poor	x1	CLO5
Preparation	Student is completely prepared and has obviously rehearsed.	Student seems pretty prepared but might have needed a couple more rehearsals.	Student is somewhat prepared, but it is clear that rehearsal was lacking.	Student does not seem to have done anything.	x1	CLO5
Development across rehearsals	Excellence	Good	Fair	Poor	x1	CLO4

PRESENTATION EVALUATION RUBRIC

Criterion	5 – Outstanding	4 – Admirable	3 – Shortcoming	2 – Failure	Weight	CLO addressed
Background	Sufficient for understanding and well-presented	Sufficient for understanding or well-presented	Too brief/too detailed for understanding or not well-presented	Not related to the content or dominating the presentation	x1	CLO1
Methods	Sufficient for understanding with rational explanation and well-presented	Sufficient for understanding or well-presented	Too brief/too detailed for understanding or not well-presented	Not mentioned	x1	CLO1
Results & Discussion	Well explained in accordance with the findings and other articles	Explained with some discussion and most figures are related	Too brief/too detailed for understanding or not well-presented	Poorly described or difficult to understand	x1	CLO3
Conceptual Framework	Sufficient for understanding with rational explanation and well-presented	Sufficient for understanding or well-presented	Too brief/too detailed for understanding or not well-presented	Not mentioned	x1	CLO1

Organization	Easy to follow, all information presented in logical sequence	Able to follow, most information presented in acceptable sequence	Hard to follow, some information presented in acceptable sequence	Unable to follow, loss of organization	x1	CLO1
Text, Diagrams & Graphics	Professional diagrams/graphics and proper text size; easy to read	Good supporting diagrams/graphics; mostly proper text size	Rare supporting diagrams/graphics; some improper text size	Unhelpful graphics and improper text size or excessive text	x1	CLO4
Text Spelling & Grammatical Errors	< 3 errors	3–5 errors	6–10 errors	>10 errors	x0.5	CLO4
Note/Screen Reading	Virtually no screen reading, speaking from understanding	Only occasionally reading the note/screen	Mostly reading the note/screen	Entirely reading the note/screen	x0.5	CLO4
Voice & Pronunciation	Clear audible proper voice with good English	Understandable English, but pronouncing some words incorrectly or soft voice	Low voice or hardly understandable English, pronouncing many words incorrectly	Mumbling or difficult to understand or using broken English	x0.5	CLO4
Time Allocation	± two minutes	± five minutes	± six to ten minutes	± >ten minutes	x0.5	CLO4
Appraisal & Assessment of Research Quality	Exceptionally discussing strength and limitation and demonstrating some application	Able to present most strength and limitation with rationale	Somewhat presented, mostly with inappropriate rationale	Not mentioned or unable to demonstrate critical thinking	x1	CLO2
Response to Questions	Able to answer all questions well and the contents of all answers were correct/ appropriate	Able to answer > two questions and those answers were correct/ appropriate	Able to answer one to two questions and some of the answers were incorrect	Unable to answer any questions or most of the answers were incorrect	x1	CLO1

QUESTION/APPRaisal EVALUATION RUBRIC

In each peer-presentation session, students may ask more than one question and/or provide more than one appraisal. However, only the highest-scoring contribution from that session will be recorded.

Criterion (choose one)	5	4	3	0	Weight	CLO addressed
Question	Leading to more experiments	Analyze/Evaluate	Recall/Clarify	Irrelevant	x1	CLO3
Appraisal	Critical	Practical	Superficial		x1	CLO3

CLO ASSESSMENT

- Scores for each CLO are calculated based on the points a student receives for the criteria mapped to that CLO in the preparation evaluation, presentation evaluation, and question/appraisal evaluation rubrics in each relevant session.
- CLO1, CLO2, CLO3, and CLO4 are considered passed if the student receives equal to or more than 50% of the CLO score.
- CLO5 is considered passed if the student:
 - receives equal to or more than 50% of the CLO score, **AND**
 - attends at least three peer-presentation sessions by 30 April 2027, providing at least one question or appraisal in each of those sessions.
- CLO5 will be considered **automatically failed** if either of the above conditions is not met—that is, if a student:
 - attends fewer than three peer-presentation sessions by 30 April 2027, or
 - fails to provide at least one question or appraisal in any of the three required sessions.

GRADE SCALE

The final numerical course grade is calculated from the scores obtained from the two presentation evaluations, two preparation evaluations, and three question/appraisal evaluations, weighted according to the grade distribution specified above. The resulting score is reported on a 4.0 scale and converted to a letter grade as follows:

A-B	Passing grade
A	3.51–4.00, with all CLOs passed according to the criteria specified above
B+	3.26–3.50, with all CLOs passed according to the criteria specified above
B	3.00–3.25, with all CLOs passed according to the criteria specified above
C+ to F	2.99 or below; non-passing grade
I	
I-2	A student who receives a numerical course grade of 3.00 or above but fails one to four CLOs must complete the assigned remedial work described below within the next semester: ● Failure of CLO1, CLO2, or CLO4: The student must prepare and deliver a presentation on a new research article. ● Failure of CLO3: The student must prepare and deliver a presentation on a new research article and attend three additional academic presentation sessions presented by others. In each of the three session, the student must contribute at least one question or appraisal. ● Failure of CLO5 due to a CLO score below 50%: The student must prepare and deliver a presentation on a new research article. ● Failure of CLO5 due to attendance at fewer than three peer-presentation sessions by 30 April 2027, or failure to provide at least one question or appraisal in any of the three required sessions: The student must attend three additional academic presentation sessions presented by others and contribute at least one question or appraisal in each session.
I-3	A student who receives a numerical course grade of 2.99 or below, or who fails all five CLOs must repeat the course when it is next offered.

Students who receive an I-2 or I-3 and do not complete the work or assignments described above within the specified timeframe will receive a failing grade for the course.

Appeal Procedure

- An appeal can be made by a student to the course coordinator or the graduate program director.