

Fulltime and MAP-C

Course Syllabus

SIPS 535

Academic Year 2026

Department of Physiology

Faculty of Medicine Siriraj Hospital, Mahidol University

Course ID and name:	SIPS535: Medical Gastrointestinal and Urinary Tract Physiology
Course coordinator:	Assoc. Prof. Reawika Chaikomin, MD, PhD
Instructors:	Assoc. Prof. Reawika Chaikomin, MD, PhD Assist. Prof. Yodying Dangprapai, 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:	19 June, 2026

Course Description:

Functions of the gastrointestinal tract, gastric functions, bile and biliary tree, intestinal functions; functions of the urinary system, renal circulation, glomerular filtration, tubular transport, urine formation, functions of lower urinary tract, sodium and water balance, potassium and pH balance, oliguria and renal failure

Course-level Learning Outcomes (CLOs)

Upon completion of this course, students are able to:

1. Explain functions and regulation of gastrointestinal tract and biliary tree physiology.
2. Apply principle of gastrointestinal tract and biliary tree physiology in context of common disease.
3. Explain basic renal processes.
4. Apply principles of renal physiology to common fluid and electrolyte disturbances.
5. Demonstrate effective communication based on rubric for participation in discussion on gastrointestinal, biliary tree and renal pathophysiology in common diseases.

Constructive Alignment of CLOs and Program's ELOs

CLOs	ELO1	ELO2	ELO3	ELO4
1. Explain functions and regulation of gastrointestinal tract and biliary tree physiology	R			
2. Apply principle of gastrointestinal tract and biliary tree physiology in context of common disease	R	R		R
3. Explain basic renal processes.	R			
4. Apply principles of renal physiology to common fluid and electrolyte disturbances.	R			
5. Demonstrate effective communication based on rubric for participation in discussion on gastrointestinal, biliary tree and renal pathophysiology in common diseases.	R			R

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

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.	Topic	Hours			CLOs	Assessment (in-class)	Lecturers	ป.โท นอกเวลา
		Lecture	Laboratory	Self Study				Asynchronous (A)/ Synchronous (S)
0	Course Orientation	-	-	0.5	-	-	Dr.Reawika & Dr.Yodying	จ 2 พ.ย. 69 17-17.30 น.(S)
1	Functions and regulation of gastrointestinal tract	1	-	2	1	Formative feedback	Dr.Reawika	จ 2 พ.ย. 69 17.30-18.30 น.(S)
2	Oral cavity and esophagus	1	-	2	1, 2	Formative feedback	Dr.Reawika	พุธ 4 พ.ย. 69 17-18 น.(S)
3	Stomach	1	-	2	1, 2	Formative feedback	Dr.Reawika	ศ 6 พ.ย. 69 17-18 น. (S)
4	Small bowel & large intestine and pancreas	1.5	-	3	1, 2	Formative feedback	Dr.Reawika	จ 9 พ.ย. 69 17-18.30 น. (S)
5	Bile and biliary tree	2	-	4	1, 2	Formative feedback	Dr.Reawika	พ 11 พ.ย. 69 17-19 น. (S)
6	Movement of human's esophagus and rat's stomach & Gastrointestinal research	1	-	2	1, 2, 5	Participation and Posttest	Dr.Reawika	พ 18 พ.ย. 69 13-15 น. (S)
7	Overview of renal functions and non-excretory function	0.5	-	1	3	Formative feedback	Dr.Yodying	จ 16 พ.ย. 69 16-16.30 น. (S)
8	Glomerular filtration	1.5	-	2	3	Formative feedback	Dr.Yodying	พฤ 19 พ.ย. 69 16-17.30 น. (S)

9	Tubular transport	1	-	2	3	Formative feedback	Dr.Yodying	จ 23 พ.ย. 69 16-17 น. (S)
10	Physiology of lower urinary tract	0.5	-	1	4	Formative feedback	Dr.Yodying	อ 23 พ.ย. 69 17-17.30 น. (S)
11	Basic concepts of fluid & electrolyte balance	2	-	4	4, 5	Participation and Posttest	Dr.Yodying	พฤ 26 พ.ย. 69 16-18 น. (S)
12	Integrated renal physiology & Oliguria and renal failure (GA)	2	-	5	4, 5	Participation and Posttest	Dr.Yodying	จ 30 พ.ย. 69 16-18 น. (S)
13	Examination				1, 2, 3, 4	Summative (onsite)		พุธ 2 ธ.ค. 69 13.30-16 น. (onsite)
14	Reflection & Feedback	-	-	-	-	-	Dr.Reawika & Dr.Yodying	พุธ 23 ธ.ค. 69 เวลา 14-15 น. (onsite)
Total hours of the study		15		30				

Assessment Criteria

Assessment	Proportion of Evaluation (%)
1. Written exam (MCQ + Essay $\geq$ 60%)	60
2. Required Posttest or assignment	20
3. Participation in Discussion Classes $\geq$ 80%	20

Rubric for Participation in Discussion Classes (CLO5)

	4	3	2	1	0
How well does the student participate in class by presenting data/asking questions/offering ideas? (Frequency of contributions)	Frequently and voluntarily (*Does not prevent others from answering)	Voluntarily	Responses only after being questioned or named	Rarely, reluctantly	Never
How good is the quality of student's contributions? (Quality of contributions)	Demonstrates comprehensive knowledge and critical thinking skills	Mostly relevant, reflecting understanding of knowledge	Somewhat relevant, reflecting some levels of understanding of knowledge	Not relevant, reflecting insufficient understanding of knowledge	Lacks understanding of knowledge or infrequent contributions
How well does the student behave during presentation? (Behavior in class)	Actively and respectfully pays attention to peers/instructor; full engagement throughout the class	Pays attention to peers/instructor; engages most of the time in class	Listens to peers/instructor	Sometimes does not listen to peers/instructor; sometimes displays inappropriate behavior	Fails to pay attention; displays inappropriate behavior in class

Grading Criteria

GRADE SCALE	
A	80% to 100%, with all CLOs passed (minimum 50% each)
B+	65% to <80%, with al CLOs passed (minimum 50% each)
B	50% to <65%, with all CLOs passed (minimum 50% each)
F	< 50%
<u>Actions Based on CLO Status:</u>	
I-1	Retake the exam and/or complete the assigned work within one month after the exam results are announced, if at least one CLO (CLO1-3) is failed.
I-2	Complete the assigned work and undergo a new evaluation within the next semester if all CLOs are failed.
I-3	Repeat the course when it is next offered, if all CLOs are failed.