Course specification

Faculty School of Nursing **Department** Fundamental Nursing

Curriculum Bachelor of Nursing Science Program, New Program in Year 2022

Section 1 General Information

BNE 201	วิทยาศาสตร์สุขภาพสำหรับพยาบาล 3 (Health Science for Nursing III)	2 (2-0-4)
Co-requisite course	-	
Prerequisite course	-	
Semester	1/2025	
Section	01	
Course type	O General education course ∅ Professional foundation course O Professional course O Free elective course	
Course coordinators	1) Asst.Prof.Dr.Suphangphim Rattasumpun 2) Aj.Dr.Nuttapol Yuwanich	☑ Former instructor ☑ Former instructor
Course instructors	1) Assoc.Prof.Orapin Sikaow 2) Asst.Prof.Dr.Suphangphim Rattasumpun 3) Aj.Dr.Nuttapol Yuwanich	☑ Former ☐ Invited ☑ Former ☐ Invited ☑ Former ☐ Invited
Study place	**Room 3-509, School of Nursing**	☑ In-site ☐ Out-site
Latest update	5 August 2025	

Section 2 Course Objectives and Components

1. Course objectives:

1) Explain the functional response in the normal stage to maintain homeostasis and responses of the neurological system, musculoskeletal system, gastrointestinal system, haematological system, endocrine system, and reproductive system.

2) Identify the cause/predisposing factors, pathophysiology, the signs and symptoms, clinical manifestations, complications, and the treatments of the alterations in neurological system, musculoskeletal system, gastrointestinal system, haematological system, endocrine system, and reproductive system.

2. Course description

Functional responses in the normal stage to maintain homeostasis and pathological mechanisms and responses of the neurological system, musculoskeletal system,

gastrointestinal system, hematological system, endocrine system, and reproductive system.

3. Contact hours per week for advising and guidance to students

- Course instructors will advise the students, individuals, or groups, at least 2 hours/week.
- The advisor (s) of the course will be assigned and clearly announced during the course orientation. Students may sign up to meet with his/her advisor privately for an hour per week as needed.

Instructors	Room	Email	Schedule
Aj. Dr.Nuttapol Yuwanich	Building 4 Room 408	Nuttapol.y@rsu.ac.th	M: 9.00-16.00
Asst.Prof.Dr.Suphangphim Rattasumpun	Building 4 Room 407	suphangphim.r@rsu.ac.th	M: 9.00-16.00
Assoc.Prof. Orapin Sikaow	Building 4 Room 408	Orapin.s@rsu.ac.th	F: 9.00-16.00

4. Course Learning Outcomes (CLOs)

After studying this course, the students should be able to:

4.1 Knowledge

1) Understanding the following key concepts: Functional responses in the normal stage to maintain homeostasis and pathological mechanisms and responses of the neurological system, musculoskeletal system, gastrointestinal system, hematological system, endocrine system, and reproductive system (CLO 1.1 aligned with PLO1)

4.2 Skills

2) Using IT tools to search data for analyzing the selected case and problem-solving (CLO 2.1 aligned with PLO5)

3) Engaging in effective communication skills in presenting and/or discussing the health problems (CLO 2.1 aligned with PLO5)

4.3 Ethics

4) Expressing honesty, discipline, respect for rules, and accountable behaviors (CLO 3.1 aligned with PLO8)

4.4 Personal Attributes

5) Demonstrate leadership, work as a team, and respect and honor others. (CLOs4.1 aligned with PLO6)

Section 3 Student's Learning Outcome Development

Revised the teaching process from last year by adding more case study analysis and reducing the number of students in group work.

1. Knowledge

PLO	Learning outcome (CLOs)	Teaching methods	Evaluation methods	Evaluation tools
1	Understanding the following key concepts: Functional responses in the normal stage to maintain homeostasis and pathological mechanisms and responses of the neurological system, musculoskeletal system, gastrointestinal system, hematological system, endocrine system, and reproductive system. (CLO 1.1 aligned with PLO1)	- In each topic, the lecturers provide study guidelines composed of learning resources and students' assignments, and selected case scenarios at least 3 days before the class tutorial. - An overview of the key concepts and applications in each topic will be conducted at the beginning. - Group discussion, presentation, and knowledge sharing on the student's assignment will be established. - The instructor replies and discusses the exercises in the student's assignment.	- Observe and record student behaviors in the class tutorial and conduct assessments on students' assignments. - Discussion and participation in class tutorial (10%) - Case presentation and written report (10%) - Quiz (10%) - Examination I (30%) - Examination II (30%)	- Classroom Case Study Analysis Presentation Assessment - Examination criteria

		- The instructor summarizes the key concepts in the pathophysiology of each case scenario and discusses the lessons learned in class.		

2. Skills

PLO	Learning outcome (CLOs)	Teaching methods	Evaluation methods	Evaluation tools
5	1) Using IT tools to search data for analyzing the selected case and problem-solving (CLO 2.1 aligned with PLO5) 2) Engaging in effective communication skills in presenting and/or discussing the health problems (CLO 2.1 aligned with PLO5)	- Self-study and complete their assignment by reading, writing, and searching for knowledge from various resources before attending the class tutorial. - Discussion and knowledge sharing in class tutorial. - Group work on case scenario assignment	- Discussion and knowledge sharing in class tutorial. - Case presentation and written report (10%)	-Case study analysis report evaluation form

3. Ethics

PLO	Learning outcome (CLOs)	Teaching methods	Evaluation methods	Evaluation tools
8	1) Expressing honesty,	- Group tutorial is done in 2 case scenarios, focusing on the	- Class attendance	-Classroom Behavior

	discipline, respect for rules, and accountable behaviors (CLO 3.1 aligned with PLO8)	pathophysiology as follows: Case scenario 1: focuses on the pathophysiology of the renal and urinary system and alterations in the renal and urinary system Case scenario 2: focuses on pathophysiology of cardiovascular & respiratory system - Student's assignment - Students work in groups (5 students per group) and select 1 case scenario/group. - Each group analyzes the selected case scenario. - Students in each group present their work and discuss it with the lecturer and other students in class. - The instructor summarizes the key concepts. - Each group submits the written report within 3 days after the presentation. - Admire good students as role models in honesty, discipline, respect for rules, and accountable behaviors	and punctuality - The case report is submitted on time - Reflect honesty, discipline, respect for rules, and accountable behaviors of others and themselves, and show a positive attitude toward the nursing profession during classroom tutorials and conducting assignments. (5%)	Observation Form

4. Personal Attributes

PLO	Learning outcome	Teaching methods	Evaluation methods	Evaluation tools

	(CLOs)				
6	1) Demonstrate leadership, work as a team, and respect and honor others. (CLOs4.1 aligned with PLO6)	- Assigned students to work as a team on the assignment. - Encourage students to be team leaders and team members when working in a group	- Self-reflection Observe and record skill and responsibility in their role (5%)	-Teamwork and leadership behavior assessment by peers/teachers Form	

Section 4: Lesson Plan and Evaluation

1. Lesson Plan: Room 3-509

Date	Time	Topic	Learning and teaching activities/ learning resources	Instructor
F 29 August 2025	13.00-13.30	Course orientation	- Briefly explain the information about the course and learning resources - Establish a class agreement about the course learning and teaching	Asst.Prof.Dr.Suphangphim Rattasumpun
F 29 August 2025 *W 3 September 2025	13.30-16.00 13.00-15.00	**Unit 1 Musculoskeletal physiology and alterations in musculoskeletal system** (4.5 hr.) 1.1 Musculoskeletal physiology 1.2 Alterations in musculoskeletal system 1.2.1 Trauma and infection 1.2.2 Metabolic and rheumatoid disorders 1.2.3 Degenerative disorders 1.2.4 Bone tumor 1.2.5 Clinical diagnostic investigation	**Learning and teaching activity** -Briefly explain the key concept -Analysis of case study and discussion **Learning resources** -PowerPoint -VDO -Kahoot/Socrative -Case study/Assignment -Google Classroom	Assoc.Prof. Orapin Sikaow

Date	Time	Topic	Learning and teaching activities/ learning resources	Instructor
F 5 September 2025 F 12 September 2025 F 19 September 2025	13.00-15.00 13.00-14.30 13.00-15.00	**Unit 2 Neurological system and alterations in neurological system** (5.5 hr.) 2.1 Neurophysiology 2.2 Alteration of neurological system 2.2.1 Alteration in neuromuscular function 2.2.2 Pain 2.2.3 Alteration in special sensory functions 2.2.4 Clinical diagnostic investigation 2.2.5 Alteration in brain function 1) Seizure 2) Brain injury 3) Cerebrovascular diseases 4) Infection 5) Neoplasm 6) Multiple sclerosis Degenerative disorders	**Learning and teaching activity** - Briefly explain key concept -Analysis case study and discussion **Learning resources** -PowerPoint -VDO - Kahoot/Socrative -Case study/Assignment -Google Classroom	Aj. Dr. Nuttapol Yuwanich

Date	Time	Topic	Learning and teaching activities/ learning resources	Instructor
F 26 September 2025 F 3 October 2025	13.00-15.00 13.00-15.00	Unit 3 Hematological system and alterations in the hematological system (4 hr.) 3.1 Hematological physiology 3.2 Alterations in the hematologic system 3.2.1 Red cell disorders, white cell disorders 3.2.2 Bleeding disorders	Learning and teaching activity -Briefly explain the key concept -Analysis of case study and discussion Learning resources -PowerPoint -VDO -Google form -Case study/Assignment -Google Classroom	Assoc.Prof. Orapin Sikaow
F 10 October 2025	13.00-14.30	**Examination I (Unit 1-3)**		Assoc.Prof. Orapin Sikaow Aj. Dr. Nuttapol Yuwanich
F 28 November 2025 W 3 December 2025	13.00-16.30 13.00-14.30	Unit 4: Gastrointestinal system and alterations in the gastrointestinal system (5 hr.) 4.1 Gastrointestinal physiology 4.2 Alteration in the gastrointestinal system 4.2.1 Disorders of the esophagus, stomach, and the small and large intestines 4.2.2 Disorders of Hepatobiliary and exocrine pancreas function	Learning and teaching activity -Briefly explain the key concept -Analysis of case study and discussion Learning resources -PowerPoint -VDO -Google form -Case study/Assignment	Asst.Prof.Dr.Suphangphim Rattasumpun

Date	Time	Topic	Learning and teaching activities/ learning resources	Instructor
		1) Cirrhosis of the liver 2) Cancer of the liver 3) Viral hepatitis 4) Cholecystitis 5) Pancreatitis	-Google Classroom	
W 3 December 2025 F 12 December 2025 W 17 December 2025	14.30-16.30 13.00-16.00 9.00-10.00	Unit 5 Endocrine system and alterations in the endocrine system (6 hr.) 5.1 Endocrine physiology 5.2 Alterations in the endocrine system 5.2.1 Diabetes Mellitus and metabolic syndrome 5.2.2 Pituitary gland disorders 5.2.3 Thyroid and parathyroid gland disorders 5.2.4 Adrenal gland disorders	Learning and teaching activity -Briefly explain the key concept -Analysis of case study and discussion Learning resources -PowerPoint -VDO -Google form -Case study/Assignment -Google Classroom	Asst.Prof.Dr.Suphangphim Rattasumpun

Date	Time	Topic	Learning and teaching activities/ learning resources	Instructor
W 17 December 2025	10.00-12.00 13.00-16.00	Unit 6 Reproductive system and alterations in the reproductive system (5 hr.) 6.1 Reproductive physiology 6.2 Alteration in the reproductive system 6.2.1 Alteration in the male reproductive system 6.2.2 Alteration in the female reproductive system 1) Disorders of female reproductive organs 2) Menstrual disorders, DUB 6.2.3 Alteration of the breast 6.2.4 Sexually transmitted disorders 6.2.5 Clinical diagnostic investigation	Learning and teaching activity -Briefly explain the key concept -Analysis of case study and discussion Learning resources -PowerPoint -VDO -Google form -Case study/Assignment -Google Classroom	Asst.Prof.Dr.Suphangphim Rattasumpun
F 19 December 2025	**13.00-14.30**	**Exam II (Unit 4-6)**		Asst.Prof.Dr.Suphangphim Rattasumpun Aj.Dr. Nuttapol Yuwanich

2. Learning Outcome Evaluation Plan

Learning outcome	Evaluation method	week	Evaluation proportion
1. Knowledge (CLO 1.1 aligned with PLO1)	Examination 2.1 Examination I 2.2 Examination 2	 Week 8 Week 15	 30% 30%
2. Skills (CLO 2.1 aligned with PLO5)	2.3 Quiz 2.4 Student's assignment 2.4.1 Exercises (unit 1-6) 2.4.2 Group discussion on the case scenarios/case study -Writing a case analysis - Case presentation and written report.	Throughout the semester	10% 10% 10%
3. Ethics (CLO 3.1 aligned with PLO8)	Attended the class and submitted the assignment regularly and on time. (Class attendance evaluation form)	Throughout the semester	5%
4. Personal Attributes (CLO 4.1 aligned with PLO6)	-Discussion and participation in class tutorial (Teamwork and leadership evaluation form)	Throughout the semester	5%

☑ **AUN-QA 3.4**

☑Life-longing Learning

☑ Commitment to critical inquiry: Group work report

☑ Information-processing skills: Assigned to further searching by using digital technology to analyze the case study or using the evidence-based, research articles/review articles in both Thai and English, including using the Problem-Based Learning and participatory learning in group discussion and reflection.

Grade level

Grade	Score (%)	Score	Score	Description
A	80-100	8-10	4.0-5.0	Excellent
B+	75-79	7.5-7.9	3.75-3.95	Very good
B	70-74	7.0-7.4	3.50-3.70	Good
C+	65-69	6.5-6.9	3.25-3.45	Fairly good
C	60-64	6.0-6.4	3.00-3.20	Fair
D+	55-59	5.5-5.9	2.75-2.95	Poor
D	50-54	5.0-5.4	2.50-2.70	Minimum Passing
F	0-49	0-4.9	0-2.45	Failure

Re-examination

Students who have a score (%) less than 60% of 100%, he/she will receive an opportunity to re-examination. The grade results are not more than a C level.

Student appeal

Students request the course coordinator to review his/her examination results and grade level. He/she can request reconsideration of the score result or the grade if needed within 1 week after knowing the results.

If there is a student request for reviewing, like above. The student has to complete a student appeal form and submit the completed form to the head of the fundamental nursing group via the course coordinator. Then, the course coordinator will send it to the course instructors. After the instructor meeting, the course coordinator and the head of the fundamental nursing inform the reconsideration results to the student within 1 month.

3. Course Learning Outcome (CLOs) and Learning Outcomes

CLOs	1. Knowledge	2. Skills	3. Ethics	4. Personal Attributes
	1.1	2.1	3.1	4.1
CLO 1.....	√			
CLO 2.....		√		
CLO 3.....		√		
CLO 4.....			√	
CLO 5.....				√

Section 5 Learning and Teaching Resource

1. Main text

McCance, K.L, Huether, S.E, Brashers, V.L, and Rote, N.S. (2022). Pathophysiology. 9th ed. St. Louis: Elsevier.

Rebar, C.R., Heimgartner, N.M., and Gersch, C.J. (2019). Pathophysiology made incredibly easy! 6th ed. Philadelphia: Wolters Kluwer.

Hall, J.E., and Hall, M.E. (2020). Guyton and Hall Textbook of Medical Physiology. 14th ed. Philadelphia: Saunders/Elsevier.

2. Suggestion textbooks and websites

พัสมณฑ์ คุ้มทวีพร และคณะ. (2558). พยาธิสรีรวิทยาทางการพยาบาล. กรุงเทพฯ : โรงพิมพ์ ทีเอสบี โปรดักส์.

อรพินท์ สีขาว. (2559). พยาธิสรีรวิทยา. สมุทรปราการ: โครงการสำนักพิมพ์มหาวิทยาลัยหัวเฉลิมพระเกียรติ.

Hammer, Gary D.; McPhee, Stephen J. (2014). Pathophysiology of disease: An introduction to clinical medicine. New York: McGraw-Hill.

Norrid, T.L. (2019). Porth's pathophysiology: Concepts of altered health states. 10th ed. Philadelphia: Wolters Kluwer

3. Documentation and Suggested information

- https://medlineplus.gov/anatomy.html
- https://www.khanacademy.org/science/health-and-medicine/human-anatomy
- https://opentextbc.ca/anatomyandphysiology/chapter/1-1-overview-of-anatomy

Section 6 Evaluation and Improvement Plan

1. Effective evaluation strategies by students

1.1 Student's reflection on learning-teaching activities, strengths, and weaknesses of the course in the classroom tutorial.

1.2 Unit evaluation and course evaluation by students at the end of the course.

2. Teaching evaluation strategies

2.1 Evaluation of learning-teaching activity by team-teaching, colleagues, and administrators.

2.2 Observation of student participation, discussion, and ability to present a case report

2.3 Two-way feedback between students and teachers during class.

2.4 Mid-term and final examination grading.

3. Teaching Improvement

3.1 Improve learning-teaching activities based on students' reflection and evaluation of the course.

3.2 Course coordinator, course instructors, and the curriculum administrative committee consider the association of teaching-learning activities, learning outcomes, grading, and evaluation from students.

3.3 Provide advanced technology, Facebook group, LINE group, Cyber university, VDO, websites, etc., to enhance knowledge and skill related to the course.

4. Verification of the student's achievement

The course coordinator and course instructors consider the scores from learning outcomes and grading before verification by the curriculum administrative committee and the Nursing Accreditation Committee, respectively.

5. Re-evaluation and plan for the effectiveness of the course improvement

Information from RQF 5, course evaluation, unit evaluation, and reflection from the students and course instructors will be considered to improve the learning-teaching activities of the course in the next semester.

Appendix

Evaluation tools

- Presentation evaluation form (Rubric)
- Group report evaluation form (Rubric)
- Teamwork and leadership evaluation form (Rubric)
- Class attendance evaluation form (Rubric)