

Faculty School of Nursing Department Adult and Elderly Nursing
Curriculum พยาบาลศาสตรบัณฑิต (หลักสูตรใหม่ พ.ศ. 2565)

Section 1 General Information

BNE 202	วิทยาศาสตร์สุขภาพสำหรับพยาบาล 4 (Health Science for Nursing IV)	3 (2-2-5)
Co-requisite course	-	
Prerequisite course	-	
Semester	1/2025	
Section	01	
Course type	☐ Basic adjustment course ☐ General course ☒ Specific Course 1) Basic professional course ☐ Free elective	
Course Coordinator	Assist. Prof. Dr. Sangrawee Maneesri	☒ Former Instructor ☐ Invited
	Dr. Nuttapol Yuwanich	☒ Former Instructor ☐ Invited
	Aj. Jarutsri Atthayasai	☒ Former Instructor ☐ Invited
Course Instructors	1. Assoc. Prof. Prapawadee Puapairoj	☐ Former Instructor ☒ Invited
	2. Assist. Prof. Dr. Amorntus Sodsai	☐ Former Instructor ☒ Invited
	3. Assist. Prof. Dr. Duangjai Duangrithi	☐ Former Instructor ☒ Invited
	4. Assist. Prof. Dr. Tipsuchon Aiamsa-ard	☐ Former Instructor ☒ Invited
	5. Assist. Prof. Dr. Abhiruj Navabhatra	☐ Former Instructor ☒ Invited
	6. Assist. Prof. Dr. Thidarat Phetmanee	☐ Former Instructor ☒ Invited
	7. Assist. Prof. Dr. Preeyaporn Plaimmee Phiboonchaiyanan	☐ Former Instructor ☒ Invited
	8. Assist. Prof. Dr. Sukhontha Hasatsri	☐ Former Instructor ☒ Invited
	9. Assist. Prof. Dr. Nalinee Pradabnyat	☐ Former Instructor ☒ Invited
	10. Assist. Prof. Dr. Sangrawee Maneesri	☒ Former Instructor ☐ Invited
	11. Assoc. Prof. Orapin Sikaow	☒ Former Instructor ☐ Invited
	12. Dr. Nuttapol Yuwanich	☒ Former Instructor ☐ Invited
	13. Aj. Jarutsri Atthayasai	☒ Former Instructor ☐ Invited

Study place Theory: 4-402 ☒ In site ☐ Out site
 Lab: Building 4/2 Room 400-2
Latest update 12 August 2025

Section 2 Course Objectives and Course Components

1. Course Objectives

After completing this course, students will be able to

- 1) Understand pharmacodynamics, toxicity assessment, drug interactions, and excretion principles for safe medication administration.
- 2) Explain medications affecting autonomic, central nervous, cardiovascular, respiratory, gastrointestinal, endocrine, and reproductive systems, plus specialized drugs (chemotherapy, antibiotics, antivirals, immunosuppressants, and vitamins).
- 3) Demonstrate safe medication administration via multiple routes with proper calculations, safety protocols, and patient monitoring in laboratory settings.
- 4) Integrate knowledge and skills for rational drug use, patient education, documentation, and evidence-based medication management.

2. Course Description

หลักการพยาบาลในการบริหารยา กลไกการออกฤทธิ์ พิษและผลข้างเคียง การสะสมและการขับยา ออกจากร่างกาย ปฏิกริยาระหว่างยาหรือสารอื่น การบริหารยา กลุ่มยาออกฤทธิ์ในระบบประสาท อัดโนมัติ ระบบประสาทส่วนกลาง ระบบหัวใจหลอดเลือด ระบบทางเดินหายใจ ระบบทางเดินอาหาร ระบบต่อมไร้ท่อ และระบบสืบพันธุ์ ยาต้านมะเร็ง ยาคุมกำเนิด ยาต้านจุลชีพ ยาต้านเชื้อรา ยาต้านไวรัส วิตามินและเกลือแร่ การใช้ยาอย่างสมเหตุผล

Nursing principles in medication administration, pharmacodynamics, toxicity and side effects, drug accumulation and excretion, drug interaction or interaction with other substances; medication administration in drugs affecting the autonomic nervous system, central nervous system, cardiovascular system, respiratory system, gastrointestinal system, endocrine system, and reproductive system; chemotherapy, immunosuppressants, antibiotics, antifungal drugs, antiviral drugs, vitamins and minerals, and rational drug uses.

3. Weekly hours of academic consultation and guidance provided by faculty to students

Classroom tutorial and discussion	Practice in laboratory	Self-study
30 hours	30 hours	5 hours per week

The advisor(s) for the course will be assigned and clearly announced during the course orientation. Course instructors will provide advice to students, both individually and in groups, for at least 2 hours per week via email and Line group.

Advisor Names	Contact Information	Schedule
1. Assoc. Prof. Prapawadee Puapairoj	E-mail: prapawadee.p@rsu.ac.th	On appointment
2. Assist. Prof. Dr. Amorntus Sodsai	E-mail: amorntus@gmail.com	On appointment
3. Assist. Prof. Dr. Duangjai Duangrithi	E-mail: djdr@hotmail.com	On appointment
4. Assist. Prof. Dr. Tipsuchon Aiamsa-ard	E-mail: tipsuchon.c@rsu.ac.th	On appointment
5. Assist. Prof. Dr. Abhiruj Navabhatra	E-mail: abhiruj.c@rsu.ac.th	On appointment
6. Assist. Prof. Dr. Thidarat Phetmanee	E-mail: thidarat.w@rsu.ac.th	On appointment
7. Assist. Prof. Dr. Preeyaporn Plaimmee Phiboonchaiyanan	E-mail: pplaimmee@gmail.com	On appointment
8. Assist. Prof. Dr. Sukhontha Hasatsri	E-mail: sukhontha.h@rsu.ac.th	On appointment
9. Assist. Prof. Dr. Nalinee Pradabnyat	E-mail: nalinee.p@rsu.ac.th.	On appointment
10. Assist. Prof. Dr. Sangrawee Maneesri	E-mail: sangrawee.m@rsu.ac.th	On appointment
11. Assoc. Prof. Orapin Sikaow	E-mail: orapin.si@rsu.ac.th	On appointment
12. Dr. Nuttapol Yuwanich	E-mail: nuttapol.y@rsu.ac.th	On appointment
13. Aj. Jarutsri Atthayasai	E-mail: jarutsri.a@rsu.ac.th	On appointment

4. Course Learning Outcomes (CLOs)

1. Explain the knowledge, principles, concepts, and theories in pharmacological foundations and related sciences including pharmacodynamics, drug interactions, toxicity, and system-specific medications.

2. Perform nursing practices in laboratory and simulation settings for medication administration through various routes, applying nursing principles and critical thinking processes.

3. Demonstrate behaviors of honesty, discipline, respect for regulations, and responsibility in medication administration and patient safety protocols.

4. Demonstrate leadership, teamwork, respect and honor for others in group work and collaborative learning activities.

Section 3 Students' Learning Outcomes Development

The purposes of course development/revision:

Since last year, there hasn't been an intravenous medication administration procedure, a prerequisite for nursing students pursuing basic nursing practice. This year, we've added hours for intravenous drug administration to enhance students' comprehension of the essential principles, treatment prescription, and methods for administering intravenous injections. In addition, laboratory equipment is prepared to be complete and sufficient, and videos on medication administration skills through various routes are prepared in the Learning Resource Center of Nursing (LRCN) system and google classroom for students to review before and after class.

1. Knowledge

PLOs	CLOs	Teaching Methods	Assessment Methods	Assessment Tools
1	1.1 Explain the knowledge, principles, concepts, and theories in pharmacological foundations and related sciences including pharmacodynamics, drug interactions, toxicity, and system-specific medications.	- Lecture on pharmacological foundations and related sciences, focusing on principles, concepts, and theories including pharmacodynamics, drug interactions, toxicity, and system-specific medications.	1) Examination 3 times (45%) 2) Lab quiz (10%)	1) Multiple-choice questions MCQ for: - 1 st exam (15%) - 2 nd exam (15%) - 3 rd exam (15%) 2) MCQ and open-ended questions with marking scheme for: - Lab quiz 1 (5%) - Lab quiz 2 (5%)

2. Skills

PLOs	CLOs	Teaching Methods	Assessment Methods	Assessment Tools
2	2.3 Perform nursing practices in laboratory and simulation settings for medication administration through various routes, applying nursing principles and critical thinking processes.	Students are required to self-study drug administration methods for all routes from videos in the LRCN system, Google Classroom, and conduct research from reliable sources before attending class. This approach encourages students to be well-prepared, develops their digital literacy skills for information retrieval, and promotes lifelong learning habits. - The instructor demonstrates various drug administration routes, followed by student return demonstrations.	1) Evaluation of various drug administration routes using case-based scenarios 3 exam (30%).	1) Assessment Form for Drug Administration for: - Lab Exam 1 (10%) - lab Exam 2 (10%) - Lab Exam 3 (10%)

3. Ethics

PLOs	CLOs	Teaching Methods	Assessment Methods	Assessment Tools
8	3.1 Demonstrate behaviors of honesty, discipline, respect for regulations, and responsibility in medication administration and patient safety protocols.	- Embed content regarding honesty, discipline, respect for regulations, and responsibility in medication administration and patient safety protocols across all laboratory topics.	- Observe ethical behavior during class attendance and examination administration (5%).	- Ethical Behavior Observation Form for Class Attendance and Drug Administration (5%)

4. Characteristics

PLOs	CLOs	Teaching Methods	Assessment Methods	Assessment Tools
6	4.1 Demonstrate leadership, teamwork, respect and honor for others in group work and collaborative learning activities.	- Group assignment for finding solutions to rational drug usage problems to foster teamwork skills, encourage collaborative learning, and develop interpersonal communication abilities essential for healthcare professionals.	- Observe teamwork behavior and report (10%).	- Teamwork and Report Assessment Form (10%)

Section 4 Lesson Plan and Evaluation

1. Lesson plans

Theory Sessions: Tuesdays 9.00-11.00 AM, Room 402, Building 4 (with BNS Sec 02 students)

Laboratory Sessions: Tuesdays 1.00-4.00 PM, Room 400-2, Building 4/2

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
1 19 Aug 2025	9.30-11.30 a.m.	Chapter 1: Fundamental Principles of Pharmacology 1.1 Pharmacokinetics 1.2 Pharmacodynamics 1.3 Pharmacotherapeutics	2		- Lecture	- Assist. Prof. Dr. Thidarat Phetmanee
2 26 Aug 2025	8.30-10.30 a.m.	Chapter 2: Drugs acting on body systems 2.1 Drugs acting on gastrointestinal tract	2		- Lecture	- Assist. Prof. Dr. Thidarat Phetmanee
	1.00-4.00 p.m.	Orientation Lab 1: Type of drugs, dosage form proper drug storage		3	- Demonstration - Quiz - Group work and Presentation	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
3 2 Sep 2025	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.2 Drugs acting on autonomic nervous system	2		- Lecture	Assist. Prof. Dr. Nalinee Pradabnyat
	1.00-4.00 p.m.	Lab 2: Searching medication information and prevention of medication error		3	- Demonstration - Return-demonstration	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
4 9 Sep 2025	9.00-10.00 a.m.	Chapter 2: Drugs acting on body systems 2.2 Drugs acting on autonomic nervous system (Cont.)	1		- Lecture	Assist. Prof. Dr. Nalinee Pradabnyat
	10.00-11.00 a.m.	Chapter 3: Professional Nursing Roles in Drug Administration - Safety principles - Patient education in drug administration	1			Assoc. Prof. Orapin Sikaow
	1.00-4.00 p.m.	Lab 3: Reading Transcription, verification of the prescribed medications, Medication Administration Record (MAR)		3	- Demonstration - Return-demonstration - Case study analysis	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
5 16 Sep 2025	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.3 Drugs acting on endocrine system	2		- Lecture	Assist. Prof. Dr. Abhiruj Navabhatra
	1.00-4.00 p.m.	Lab exam 1: Medication Administration Record		3	- Case-based	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
6 23 Sep 2025	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.4 Drugs Acting on the Central Nervous System	2		- Lecture	- Assoc. Prof. Prapawadee Puapairoj
6 23 Sep 2025 (Cont.)	1.00-3.00 p.m.	Lab 4: Dosage calculation and educating patients about safety in high alert/high-risk medication use		3	- Demonstration - Return-demonstration - Quiz	- Dr. Nuttapol Yuwanich - Assist. Prof. Dr. Sangrawee Maneesri - Aj. Jarutsri Atthayasai

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
7 30 Sep 2025	9.00-12.00 a.m.	Chapter 2: Drugs acting on body systems 2.5 Drugs acting on cardiovascular system	3		- Lecture	- Assist. Prof. Dr. Amorntus Sodsai
	1.00-4.00 p.m.	Lab 5: Medication Administration: Oral,Tropical, Inhaler, eyes drop, rectal & vaginal suppository		3	- Demonstration - Return-demonstration	- Dr. Nuttapol Yuwanich - Assist. Prof. Dr. Sangrawee Maneesri - Aj. Jarutsri Atthayasai
8 7 Oct 2025	9.00-12.00 a.m.	Lab exam 2: Oral,Tropical, Inhaler, eyes drop, rectal & vaginal suppository		3	- Case-based	- Dr. Nuttapol Yuwanich - Assist. Prof. Dr. Sangrawee Maneesri - Aj. Jarutsri Atthayasai
	1.00-4.00 p.m.	Self-study				
9 14 Oct 2024	8.00-9.00 a.m.	1st Examination (10 hours) - Fundamental Principles of Pharmacology - Drugs Acting on the Gastrointestinal System - Drugs Acting on the Autonomic Nervous System - Drugs Acting on the Endocrine System - Professional Nursing Roles in Drug Administration				- Assist. Prof. Dr. Sangrawee Maneesri - Aj. Jarutsri Atthayasai
10 21 Oct 2024	9.00-10.00 a.m.	Chapter 2: Drugs acting on body systems 2.6 Blood lipid control drugs	1		- Lecture	- Assist. Prof. Dr. Abhiruj Navabhatra
	1.00-4.00 p.m.	Lab 6: Medication Administration: Intradermal, Subcutaneous, and Intramuscular		3	- Demonstration - Return-demonstration	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
11 28 Oct 2024	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.7 Antimicrobial agents	2			- Assoc. Prof. Prapawadee Puapairoj
	1.00-4.00 p.m.	Lab 7: Medication Administration: Intravascular injection		3	- Demonstration - Return-demonstration	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
12 4 Nov 2024	9.00-10.00 a.m.	Chapter 2: Drugs acting on body systems 2.8 Vitamin and Mineral	1		- Lecture	- Asst. Prof. Dr. Amorntus Sodsai
	10.00-11.00 a.m.	2.9 Immune suppressive	1			
	1.00-4.00 p.m.	Self-study				
13 11 Nov 2025	8.00-9.00 a.m.	2nd Examination (10 hours) - Drugs Acting on the Central Nervous System - Cardiovascular System Drugs - Lipid-Lowering Drugs - Antimicrobial Drugs - Vitamins and Minerals - Immunosuppressive Drugs				- Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
13 11 Nov 2025 (Cont.)	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.10 Drugs acting on respiratory system	2		- Lecture	Assist. Prof. Dr. Tipsuchon Aiamsa-ard
	11.00-12.00 a.m.	2.11 NSAIDs	1			

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
	1.00-4.00 p.m.	Lab exam 3: Intradermal, Subcutaneous, Intramuscular, and Intravascular injection		3	- Case-based	- Assist. Prof. Dr. Sangrawee Maneesri - Dr. Nuttapol Yuwanich - Aj. Jarutsri Atthayasai
14 18 Nov 2025	10.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.12 Drugs acting on hormone	1		- Lecture	- Assist. Prof. Dr. Sukhontha Hasatsri
	1.00-3.00 p.m.	2.13 Anti-fungi & Anti-virus	2		- Lecture	- Assoc. Prof. Prapawadee Puapairoj
15 25 Nov 2025	9.00-11.00 a.m.	Chapter 2: Drugs acting on body systems 2.14 Anti-cancer drugs	2			- Assist. Prof. Dr. Preeyaporn Plaimmee Phiboonchaiyanan
	1.00-3.00 p.m.	Chapter 4: Principles of Rational Drug Use (RDU) Chapter 5: พระราชบัญญัติยา (Drugs Act)	1 1			- Assist. Prof. Dr. Duangjai Duangrithi
16 2 Dec 2025	10.00-12.00 a.m.	Make a report			- Group work and Report	
	1.00-3.00 p.m.	Self-study				
17 9 Dec 2025	7.30-9.00 a.m.	3rd Examination (10 hours) - Drugs Acting on the Respiratory System - Drugs Affecting the Hormonal System - Anticancer Drugs, Antifungal & Antiviral Drugs - NSAIDs (Nonsteroidal Anti-inflammatory Drugs) - Principles of Rational Drug Use - Drug Act				Assist. Prof. Dr. Sangrawee Maneesri Dr. Nuttapol Yuwanich

Week/Date	Time	Topics	Number of hours		Learning and teaching activities	Instructor
			Theory	Lab		
		Re-examination				
		Course evaluation				
Total			30	30		

2. Evaluation Plan

Learning Outcomes	Learning Assessment Methods	Assessment Week	Assessment Proportion
1.1	1 st Examination	9,13,17	15%
	2 nd Examination		15%
	3 rd Examination		15%
	Quiz	2,6	10%
2.3	Lab Examination	5,8,13	30%
3.1	Ethical behavior during class attendance and examination administration	Throughout the semester	5%
4.1	Teamwork behavior and report	2,16	10%

3. Alignment between Course Learning Outcomes (CLOs) and Learning Outcomes

CLOs	1. Knowledge	2. Skills	3. Ethics	4. Characteristics
	1.1	2.3	3.1	4.1
CLO 1 Explain the knowledge, principles, concepts, and theories in pharmacological foundations and related sciences including pharmacodynamics, drug interactions, toxicity, and system-specific medications.	✓			
CLO 2 Perform nursing practices in laboratory and simulation settings for medication administration through various routes, applying nursing principles and critical thinking processes.		✓		
CLO 3 Demonstrate behaviors of honesty, discipline, respect for regulations, and responsibility in			✓	

CLOs	1. Knowledge	2. Skills	3. Ethics	4. Characteristics
	1.1	2.3	3.1	4.1
medication administration and patient safety protocols.				
CLO 4 Demonstrate leadership, teamwork, respect and honor for others in group work and collaborative learning activities.				✓

Section 5 Learning resources

1. Require books

Katzung, B. G., Kruidering-Hall, M., Tuan, R., Vanderah, T. W., & Trevor, A. J. (Eds.). (2021). *Katzung & Trevor's pharmacology: Examination & board review* (13th ed.). McGraw Hill.

Katzung, B. G., & Vanderah, T. W. (Eds.). (2016). *Basic & clinical pharmacology* (15th ed.). McGraw Hill.

Neal, M. J. (2021). *Medical pharmacology at a glance* (8th ed.). John Wiley & Sons.

Rang, H. P., Ritter, J. M., Flower, R. J., & Henderson, G. (2014). *Rang & Dale's pharmacology*. Elsevier Health Sciences UK.

Baber, P., & Robertson, D. (2015). *Essential pharmacology for nurses* (3rd ed.). Open University Press.

2. Document/website

สุนทราวดี เอียร์พิเชฐ, ศุภกรใจ เจริญสุข, ทศยรัตน์ รื่นเรือง (2562). คู่มือการจัดการเรียนการสอนการใช้ยาอย่างสมเหตุผล ในหลักสูตรพยาบาลศาสตรบัณฑิต. Retrieved from https://www.tnmc.or.th/images/userfiles/files/1_%20RDU%202562.pdf

คู่มือการใช้ยาที่มีความเสี่ยงสูง. (2564). Retrieved from https://www.si.mahidol.ac.th/Th/departament/anesthesiology/anesthesia/form/คู่มือการใช้ยาที่มีความเสี่ยงสูง%20High%20Alert%20Drug%20ปรับปรุง%202564%20HAD_2109.pdf

National Drug Information. Retrieved from https://ndi.fda.moph.go.th/drug_national

Section 6 Course Evaluation and Improvement

1. Strategies for Course Effectiveness Evaluation by Students

- ✓ Teaching effectiveness evaluation by students
- ✓ Course evaluation forms
- ☐ Group discussions between instructors and learners
- ☐ Reflection from learner behaviors
- ☐ Feedback through online channels that instructors have established as communication channels with students
- ☐ Others (specify)

2. Strategies for Learning Management Evaluation

- ☐ Instructor evaluation forms
- ✓ Student reflections
- ☐ Examination results
- ☐ Learning outcome assessment verification
- ☐ Evaluation by academic standards supervision committee
- ✓ Teaching observation by teaching team members
- ☐ Others (specify)

3. Mechanisms for Learning Management Improvement

- ✓ Teaching and learning seminars
- ☐ Classroom and non-classroom research
- ☐ Others (specify)

4. Process for Verifying Student Learning Outcomes of the Course

- ✓ Establishing a committee within the academic field to examine student learning outcome assessments by reviewing examinations, reports, scoring methods, and behavioral assessment scoring
- ☐ Score verification for student work assessment by departmental and faculty committee members
- ☐ Score verification through random sampling of student work by instructors or other qualified experts who are not regular curriculum instructors

☐ Others (specify)

5. Review and Planning for Course Effectiveness Improvement

✓ Annual course improvement based on recommendations and verification results from item4

☐ Annual course improvement based on student evaluation results of instructors

☐ Others (specify)

Appendix

Grading Criteria

เกรด	5%	10%	15%	100%
A	4.00-5.00	8.00-10.00	12.00-15.00	80.00-100.00
B+	3.75-3.99	7.50-7.99	11.25-11.99	75.00-79.99
B	3.50-3.74	7.00-7.49	10.50-11.24	70.00-74.99
C+	3.25-3.49	6.50-6.99	9.75-10.49	65.00-69.99
C	3.00-3.24	6.00-6.49	9.00-9.47	60.00-64.99
D+	2.75-2.99	5.50-5.99	8.25-8.99	55.00-59.99
D	2.50-2.74	5.00-5.49	7.50-8.24	50.00-54.99
F	< 2.50	< 5.00	< 7.50	< 50.00

Evaluation Forms

1. Assessment Form for Drug Administration (30%)

1.1 Medication Administration Record (10%)

1.2 Oral, Tropical, Inhaler, eyes drop, rectal & vaginal suppository (10%)

1.3 Intradermal, Subcutaneous, Intramuscular injection, & Intravascular injection (10%)

2. Ethical Behavior Observation Form for Class Attendance and Drug Administration (5%)

3. Teamwork and Report Assessment Form (10%)