

**Course syllabus** **College of Pharmacy**

Course code	PHA 352	Credit No.	1(0-3-2)
Course title	Pharmacology for Pharmacy Laboratory	Section	11, 12, 13
Semester	1	Academic year	2023
Students	Pharmacy students, 3 rd year		

Instructor(s)

1. Assoc. Prof. Prapawadee Puapairoj
2. Asst. Prof. Dr. Amorntus Sodsai
3. Asst. Prof. Dr. Tipsuchon Aiamsa-ard
4. Asst. Prof. Dr. Abhiruj Navabhatra
5. Asst. Prof. Dr. Thidarat Phetmanee
6. Asst. Prof. Dr. Preeyaporn Plaimee Phiboonchaiyanan
7. Dr. Thanet Fuangfoo
8. Dr. Sakdipat Sangsuriyong
9. Dr. Patompong Satapornpong
10. Dr. Nalinee Pradubiyat
11. Miss Napaporn Lakkana
12. Mr. Tak Karuncharoenpanich
13. Miss Sulakkhana Suporn

Course coordinator(s) Asst. Prof. Dr. Abhiruj Navabhatra
Asst. Prof. Dr. Thidarat Phetmanee
Asst. Prof. Dr. Preeyaporn Plaimee Phiboonchaiyanan
Dr. Nalinee Pradubiyat

Class hours and location Brief lab Tuesday, 03.00-05.00 p.m., 6-604
Sec.11 Thursday, 01.00 – 04.00 p.m., 4/1-403
Sec.12 Friday, 09.00 a.m. – 12.00 p.m., 4/1-403
Sec.13 Friday, 01.00 – 04.00 p.m., 4/1-403

Pre-requisite course(s) PSO 201 Physiology
BCH 206 Biochemistry for Pharmacy

Co-requisite course(s) PHA 351 Pharmacology for Pharmacy I

Course description

Experiments on drug actions; drug synergy and antagonization; toxicity study of some drugs.

Learning objectives: When completion of this course, the students should be able to:

1. Perform basic skills to handle laboratory animals for experimental purposes.
2. Explain the basic principles of pharmacology and toxicology laboratory.
3. Describe the principles of pharmacology and toxicology experiments in various models.
4. Describe molecular mechanism of drugs or substances from pharmacology experiments.

5. Interpret and analyze results from pharmacology and toxicology experiments.
6. Apply the results form pharmacology and toxicology experiments in case studies.
7. Prepare a written document pertaining to the pharmacological laboratory.
8. Provide an exposition of the findings and deliberation of the pharmacological laboratory.
9. Comply with standard protocol of laboratory safety.
10. Take accountability for the assigned tasks.
11. Exhibit discipline, punctuality, and a sense of responsibility towards oneself and society.

Course outlines (as shown in table below)

Methods of Instruction

1. In-class practice, demonstration, and video presentation.
2. Questioning, discussion, opinion expression, and presentation.
3. The innovation is incorporated in learning activities and evaluation of this course.

Assessment

Learning evaluations include

- Paper examinations will cover all topics in Course Outlines. Weighted components of paper examinations are allocated as percent content of each topic and divided into:

Examination 1	Midterm exam	28%
Examination 2	Final exam	32%
- Practice examination:

Examination 1	Animal handling and drug administration in animal	5%
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- Integrated case study 5%
- Laboratory reports 6%
- Laboratory discussion 10%
- Student behavior evaluation 14%
- Grading Criteria: Earning marks lower than 50% is considered as F grade.
- Student grades must be approved by the Academic Committee and the Academic Standards Board of the college.

Note Class attendance is not less than 80% of all class sessions.

Required texts and references

1. Neal MJ. Medical pharmacology at a glance. 8th ed. London: Wiley Blackwell; 2015.

2. Hilal-Dandan R and Brunton LL. Goodman & Gilman manual of pharmacology and therapeutics, 2nd ed. New York : McGraw-Hill; 2014.
3. Katzung BG, et al. Basic & clinical pharmacology, 14th ed. Singapore: McGraw-Hill; 2018.
4. Brunton LL, Hilal-Dandan R and Knollmann BC. Goodman & Gilman's: The Pharmacological Basis of Therapeutics, 13th ed. New York : McGraw-Hill; 2018.

Special materials and data -

Suggested materials and data -

Course outline

Course code/ Course title	PHA 352 Pharmacology for Pharmacy Laboratory	Credit No. 1(0-3-2)
Semester	1	Academic year 2023
Class hours and location	Section 11 Thursday, 01.00 – 04.00 p.m., 4/1-403 Section 12 Friday, 09.00 a.m. – 12.00 p.m., 4/1-403 Section 13 Friday, 01.00 – 04.00 p.m., 4/1-403	

No.	Day	Topics	Instructors
1	17 Aug 2023 18 Aug 2023	Introduction to pharmacology lab Principle and concept of pharmacological experiment, report writing and lab safety rules	Asst. Prof. Dr. Preeyaporn P. Phiboonchaiyanan Mr. Tak Karunchareonpanich
2	24 Aug 2023 25 Aug 2023	Estimation of dose response relationship	Miss Napaporn Lakkana Asst. Prof. Dr. Thidarat Phetmanee and staff
3	31 Aug 2023 1 Sep 2023	Inhibitory and inductive of cytochrome P450 testing	Asst. Prof. Dr. Abhiruj Navabhatra Asst. Prof. Dr. Thidarat Phetmanee Miss Napaporn Lakkana and staff
4	7 Sep 2023 8 Sep 2023	Ames test for mutagenicity	Asst. Prof. Dr. Preeyaporn P. Phiboonchaiyanan Dr. Sakdipat Sangsuriyong and staff
5	14 Sep 2023 15 Sep 2023	Genetic polymorphism detection and screening	Asst. Prof. Dr. Preeyaporn P. Phiboonchaiyanan Asst. Prof. Dr. Abhiruj Navabhatra Asst. Prof. Dr. Thidarat Phetmanee Dr. Patompong Satapornpong and staff
6	21 Sep 2023 22 Sep 2023	Basic techniques of pharmacology lab Animal handling, drug testing and administration and animal ethics	Dr. Sakdipat Sangsuriyong Mr. Tak Karunchareonpanich and staff
7	28 Sep 2023	Isolated organs model (drug effects on GI	Dr. Thanes Fuangfoo

No.	Day	Topics	Instructors
	29 Sep 2023	tract and CVS)	Asst. Prof. Dr. Amorntus Sodsai and staff
Midterm exam, 2 - 13 Oct 2023, (No. 1-5, 7)			
8	19 Oct 2023 20 Oct 2023	Cytotoxic screening testing	Asst. Prof. Dr. Abhiruj Navabhatra Asst. Prof. Dr. Preeyaporn P. Phiboonchaiyanan and staff
9	26 Oct 2023 27 Oct 2023	Mechanism of action at molecular level I	Dr. Nalinee Pradubyat Asst. Prof. Dr. Abhiruj Navabhatra Asst. Prof. Dr. Preeyaporn P. Phiboonchaiyanan and staff
10	2 Nov 2023 3 Nov 2023	Animal behavior testing	Assoc. Prof. Prapawadee Puapairoj Dr. Thanes Fuangfoo and staff
11	9 Nov 2023 10 Nov 2023	Analgesic testing and anti-inflammatory testing (Part I)	Asst. Prof. Dr. Tipsuchon Aiamsa-ard Dr. Sakdipat Sangsuriyong and staff
12	16 Nov 2023 17 Nov 2023	Analgesic testing and anti-inflammatory testing (Part II)	Asst. Prof. Dr. Thidarat Phetmanee Asst. Prof. Dr. Tipsuchon Aiamsa-ard and staff
13	23 Nov 2023 24 Nov 2023	Mechanism of action at molecular level II	Dr. Nalinee Pradubyat Asst. Prof. Dr. Abhiruj Navabhatra Asst. Prof. Dr. Thidarat Phetmanee and staff
14	30 Nov 2023 1 Dec 2023	Immunological study	Asst. Prof. Dr. Amorntus Sodsai and staff
15	7 Dec 2023 8 Dec 2023	Integrated case study	All staff
Final exam, 12 - 21 Dec 2023, (No. 8 - 14)			