Course Syllabus

1. Program of Study Bachelor of Science (Biological Science)
Faculty/Institute/College Mahidol University International College

2. Course Code ICBI 311
Course Title Pharmacology and Toxicology

3. Number of Credits 4 (4-0-8) (Lecture/Lab/Self-study)

4. Prerequisite *(s)* ICBI 212

5. Type of Course Elective course

6. Trimester/ Academic Year
Third Quarter/ every academic year

7. Coursr Condition
Number of students is 20-30.

8. Course Description
Basic principles of pharmacology and toxicology, mechanism of drug action and toxicity, the drug effects on the living matter, the effects of living matter on the drug, the factors govern drug action and effects, side effect and toxicity of drug and chemicals.

9. Course Objective *(s)*
1. To be able to describe the principles of drug action, drug effect, drug disposition, drug toxicity, indications, and precaution.
2. To be able to integrate the basic knowledge on pre-clinical sciences such as anatomy, physiology, biochemistry, and microbiology in studying the pharmacology of a drug.
3. To be able to discuss and elaborate how a drug is discovered.

10. Course Outline

week	Topics/Seminar	Hours			Instructor
		Lecture	Lab	Self-study	
1	Principles of Pharmacology Pharmacodynamics	4	0	8	Chainarong
2	Pharmacokinetics and Therapeutic Drug Monitoring Concept in Toxicology I	4	0	8	Chainarong Wilai
3	Concept in Toxicology II & Drug Interaction Cholinergic& Anticholinergic Drugs	4	0	8	Wilai Chainarong
4	Adrenergic & Antiadrenergic Drugs Cardiac Drugs & Antihyperlipidemics	4	0	8	Chainarong
5	Antihypertensive Drugs & Diuretics	4	0	8	Chainarong

	Calcium Channel Blockers & ACEIs				
6	MIDTERM EXAM	4	0		Chainarong
7	Sedative-Hypnotic Drugs, Anticonvulsants & Antianxeity Antipsychotics, Antidepressants, Antiparkinsonism & Drugs for Alzheimer's	4	0	8	Ukrit
8	Local & General Anesthetics, Muscle Relaxants & Opioid Analgesics Principles of Antimicrobial Agents	4	0	8	Ukrit
9	Anticancer Drugs AntiProtozoal Drugs	4	0	8	Ukrit
10	Antihistamines Respiratory Drugs Respiratory Drugs	4	0	8	Ukrit
11	Gastrointestinal Drugs Hormones Hormones	4	0	8	Ukrit
FINAL EXAM					
	Total	44	0	88	

11. Teaching Method *(s)*

1. Lecture
2. Suggested readings
3. Discussion in class

12. Teaching Media

1. Powerpoint Presentations
2. Texts and teaching materials

13. Measurement and Evaluation of Student Achievement

Student achievement is measured and evaluated by

13.1 The ability to describe the principles of drug action, drug effect, drug disposition, drug toxicity, indications, and precaution.

13.2 The ability to integrate the basic knowledge on pre-clinical sciences such as anatomy, physiology, biochemistry, and microbiology in studying the pharmacology of a drug.

13.3 The ability to discuss and elaborate how a drug is discovered.

Student's achievement will be graded according to the college and university standard using the symbols: A, B+, B, C+, C, D+, D and F. Minimal passing level is 60%. Student who earns 85% up will have Grade A, 80-84% Grade B+ , 75-79% Grade B, 70-74% Grade C+, 65-69% Grade C, 60-64% Grade D+, 55-59% D, less than 55 Grade F. Students must attend at least 80% of the total class hours of this course.

Ration of mark

Assignments and attendance	20%
Midterm exam	40%
Final exam	40%

14. Course evaluation

14.1 Students' achievement as indicated in number 13 above.

14.2 Students' satisfaction towards teaching and learning of the course using questionnaires.

15. Reference *(s)*

1. Hardman, J.G., Limbird, L.E., Gilman, A.G., *et al*. Goodman and Gilman's. The pharmacological basis of therapeutics. 10th Edition. USA. McGraw-Hill. 2001.
2. Katzung, B.G. Basic & clinical pharmacology. 8th Edition. USA. Lange Medical Books, McGraw-Hill. 2001.
3. Lullmann, H., Mohr, K., Ziegler, A., Bieger, D. Color atlas of pharmacology. 2nd Edition. Germany. Thieme. 2000.

16. Instructor *(s)*

Associate Professor Chainarong Cherdchu, Ph.D.
Associate Professor Wilai Noonpakdee, Ph.D.
Ukrit Jiraputrsunton, M.D.

17. Course Coordinator

Associate Professor Chainarong Cherdchu, Ph.D.