

Republic of Iraq

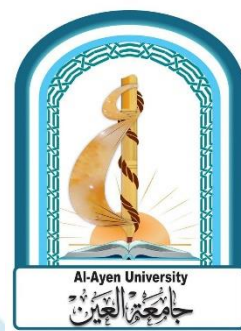
Ministry of Higher Education & Scientific Research

Supervision and Scientific Evaluation Directorate

Quality Assurance and Academic Accreditation

International Accreditation Dept.

Al-Ayen University



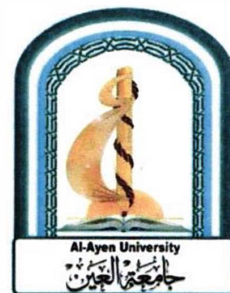
Academic Program Specification for Pharmacology & Toxicology Department

Al-Ayen University

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Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
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International Accreditation Dept.



Al-Ayen University

Academic Program Specification Form

University: Al-Ayen University
College: Pharmacy
Number Of Departments in the College: 6
Date Of Form Completion: 27/9/2021

Head of Department's Name

Date: / /

Signature

Dean's Assistant for Scientific Affairs

Date: / /

Signature

The File was verified by the Quality Assurance and University Performance Manager

Date: / /

Signature

Dean's Approval

Date: / /

PROGRAM SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAM SPECIFICATION

This program specification provides a concise summary of the main features of the program and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the program.

1. Educational institution	Ministry of Higher Education and Scientific Research - Al-Ayen University
2. University department / Center	College of pharmacy
3. Academic program	Pharmacology & Toxicology
4. The title of the final granted degree	Bachelor of Pharmacy
5. The educational system	Courses system
6. Accreditation program	Under preparation
7. Other external influences	Theoretical lectures + Educational laboratories
8. Date of description form preparation//Revision of this specification	27/9/2021

9. Academic Program Objective.

1. Study the functions of body organs.
2. Study types of medications used in treating various diseases.
3. Study the toxic effects of substances.
4. Study the contraindications of medication use.
5. Study the effects of drugs on body systems.
6. Study the effects of body on drugs.
7. Study the pharmaceutical interventions.

10. Required program outcomes and teaching, learning, and assessment methods.

A. Cognitive goals

1. The student must be able to administer medications.
2. The student must be able to educate the patient regarding disadvantages of medications.
3. The student must be able to treat and educate patients health-wise.
4. Enabling students to conduct and deliver quality seminars and lectures.

B. The skill goals of the program

1. Providing students with the skills of medication administration.
2. Enabling students with the skills of dialogue, discussion, listening to others, and accepting their opinions.
3. Enabling students to acquire self-learning skills to acquire new information, skills and knowledge.
4. Enabling students to possess verbal and non-verbal communication skills with patients.
5. Patient drug education skills.

Teaching and learning methods for cognitive and skills goals:

- 1- PowerPoint and Multimedia presentation
- 2- Labs

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam
6. practical exam

C. Affective and value goals

1. Training students to acquire thinking skills through translation, analysis, evaluation and extraction of ideas.
2. Developing students' sense of creation in using new uses for drugs. during study and during work, and enhancing the spirit of cooperation and teamwork when requested.
3. Supporting drug culture among students and community members.
4. Educating students about professional humanitarian work and promoting and consolidating professional and ethical values among students to practice the profession of pharmacist.

Teaching and learning methods

1. Theoretical and practical lectures.
2. Use the strategy of cooperation and assistance during the educational process.
3. Organizing seminars, courses and workshops for students that encourage spiritual values.
4. Discussions during the lecture.

Assessment methods

1. Summer activities
2. Homework
3. Conducting volunteer campaigns
4. Questionnaires

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Conversation skills.
2. Skills in using various computer programs, such as basic Office programs.
3. Gaining the ability to give lectures and seminars.
4. Decision-making skills
5. Listening skills

Teaching and learning methods

- 1- PowerPoint and Multimedia presentation
- 2- Handouts
- 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams
- 4- Labs
- 5- Discussions

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

11. The program structure

Level/Stage	Course code	Course Title	Credit Hours	
			Theoretical	Practical
Second	PH2104	Physiology	3	2
Third	PH3202	Pharmacology	3	
Fourth	PH4101	Pharmacology	3	2
Fourth	PH4201	Pharmacology	2	
Fourth	PH4204	Toxicology	2	2
Fifth	PH5106	Clinical Toxicology	2	2

12. Planning for personal development

1. Participation in training courses held within the college.
2. Participation in the professional courses held at the college within the prescribed curriculum, as well as the professional education courses held at the Pharmacists Syndicate after graduation, which helps in developing the graduate's personal skills within the professional and functional aspects.

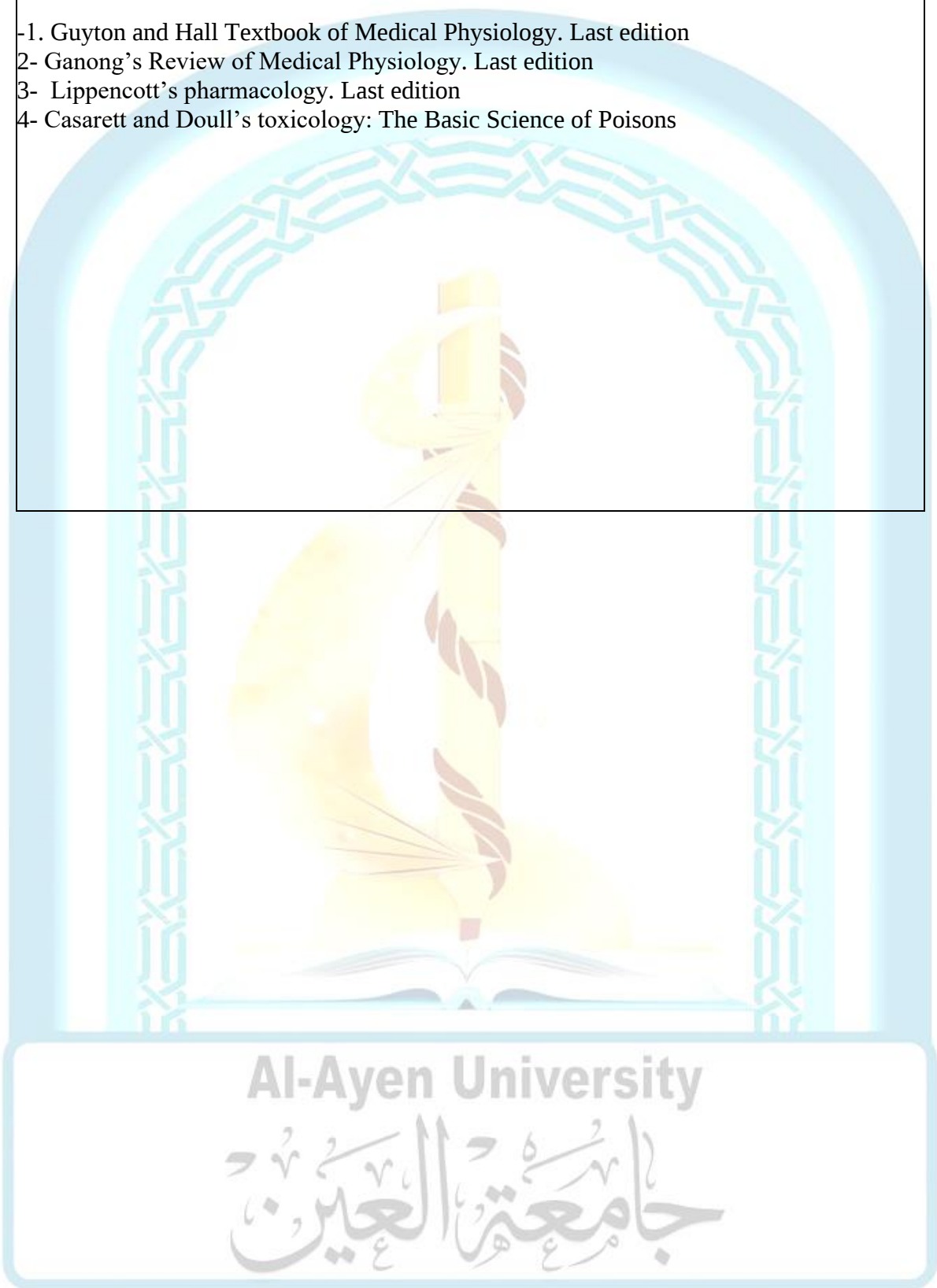
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13. Admission Criteria

This is done according to the acceptance rate in the medical group (Faculty of Pharmacy) within the electronic form approved by the Ministry of Higher Education and Scientific Research (central admission). The central admission standards have been applied to the college since the 2017 academic year.

14. The most important sources of information about the program

- 1. Guyton and Hall Textbook of Medical Physiology. Last edition
- 2- Ganong's Review of Medical Physiology. Last edition
- 3- Lippencott's pharmacology. Last edition
- 4- Casarett and Doull's toxicology: The Basic Science of Poisons



Curriculum Skills Map

Please tick in the relevant boxes where individual Program Learning Outcomes are being assessed

Learning outcomes of the program

Year / Level	Course code	Course name	Basic or optional	Cognitive goals				Skill goals of the program					Affective and value goals				General and rehabilitative skills				
				A				B					C				D				
				1	2	3	4	1	2	3	4	5	1	2	3	4	1	2	3	4	5
Second	PH2104 PH2204	PhysiologyI PhysiologyII	Basic			√	√		√	√	√		√			√					√
Third	PH3202	Pharmacology I	Basic	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
Fourth	PH4101 PH4201	PharmacologyII Pharmacology III	Basic	√	√	√	√	√	√	√	√		√	√	√	√	√		√	√	√
Fourth	PH4204	Toxicology	Basic	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√
Fifth	PH5107	Clinical Toxicology	Basic	√	√	√	√	√		√	√	√			√	√	√		√		√

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COURSE SPECIFICATION

This course description provides a necessary summary of the most important characteristics of the course and the learning results expected from the student to achieve, demonstrating whether he has achieved the maximum benefit from the available learning opportunities. It must be linked to the program description.

1. Educational institution	Al-Ayen University - College of Pharmacy
2. College department/Center	Pharmacology & Toxicology
3. Course title/code	Physiology\ PH2104 PhysiologyII\ PH2204
4. Modes of Attendance offered	Full-time and official attendance hours
5. Semester/Year	First and Second semester 2021-2022
6. Credits (total)	2 hr x 15 weeks = 30 hrs
7. Date of description form preparation//Revision of this specification	27/9/2021
8. Course Objectives	
1. To study the functions of different body organs.	

9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals

1. To study the functions of different body organs.

B. The skills goals special to the course

1. Laboratory experimentations
2. Enable the students to acquire the skills of dialogue, discussion, listening to others and respecting their opinions.

Teaching and Learning Methods

- 1- PowerPoint and Multimedia presentation
- 2- Labs
- 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

C. Affective and value goals

- 1- Raising self-confidence of the students through learning
- 2- Increase the student faith by providing a service to the community in the future

Teaching and Learning Methods

- 1- Discussions
- 2- Lectures
- 3- Labs
- 4- PowerPoint presentation

Assessment methods

1. Summer activities
2. Electronic MCQs on the electronic platform
3. Mid-term exam
4. Final exam

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Presentation of researches in conferences.
2. Developing students' sense of responsibility during the period of study and work.
3. Graduates project
4. Enhancing the spirit of cooperation and teamwork among students.

10. Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A3,A4,B2,B3,B4,C1,C4, D5	Information about the cell composition	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A3,A4,B2,B3,B4,C1,C4, D5	Body cells and cell membrane, ion channels		
3.	2	A3,A4,B2,B3,B4,C1,C4, D5	Properties of mixed nerves, glia, neurotrophins		
4.	2	A3,A4,B2,B3,B4,C1,C4, D5	Nerve functions, graded potentials, action potential		
5.	2	A3,A4,B2,B3,B4,C1,C4, D5	Smooth muscle, cardiac muscle		
6.	2	A3,A4,B2,B3,B4,C1,C4, D5	Alert behavior, sleep and electrical activity of the brain, control of posture and movement		
7.	2	A3,A4,B2,B3,B4,C1,C4, D5	Autonomic nervous system		
8.	2	A3,A4,B2,B3,B4,C1,C4, D5	Surfactants, differences in ventilation and blood flow in different parts of the lung		
9.	2	A3,A4,B2,B3,B4,C1,C4, D5	Gas transport between the lungs and tissue		
10.	2	A3,A4,B2,B3,B4,C1,C4, D5	Respiratory adjustment in health and disease, hypoxia, emphysema, asthma		
11.	2	A3,A4,B2,B3,B4,C1,C4, D5	Glomerular filtration rate: measurements, factor affecting GFR		
12.	2	A3,A4,B2,B3,B4,C1,C4, D5	The counter current mechanism, role of urea, water diuresis and osmotic diuresis		
13.	2	A3,A4,B2,B3,B4,C1,C4, D5	Bicarbonate excretion, regulation of Na,K and CL excretion, uremia, acidosis, micturition		

14	2	A3,A4,B2,B3,B4,C1,C4, D5	The electrocardiogram, cardiac arrhythmias		
15	2	A3,A4,B2,B3,B4,C1,C4, D5	Cardiac output		
16	2	A3,A4,B2,B3,B4,C1,C4, D5	Coronary circulation, hypertension, heart failure, angina pectoris		
17	2	A3,A4,B2,B3,B4,C1,C4, D5	Absorption of water and electrolytes, vitamins and minerals		
18	2	A3,A4,B2,B3,B4,C1,C4, D5	Mouth and esophagus		
19	2	A3,A4,B2,B3,B4,C1,C4, D5	Liver and biliary system , small intestine and colon		
20	2	A3,A4,B2,B3,B4,C1,C4, D5	Circulatory body fluid: introduction, blood, bone marrow		
21	2	A3,A4,B2,B3,B4,C1,C4, D5	Immunity		
22	2	A3,A4,B2,B3,B4,C1,C4, D5	Blood group and Rh factor		
23	2	A3,A4,B2,B3,B4,C1,C4, D5	Blood coagulation		
24	2	A3,A4,B2,B3,B4,C1,C4, D5	Abnormalities of hemostasis		
25	2	A3,A4,B2,B3,B4,C1,C4, D5	Metabolism and nutrition		
26	2	A3,A4,B2,B3,B4,C1,C4, D5	Endocrine function		
27	2	A3,A4,B2,B3,B4,C1,C4, D5	Development\function of reproductive system		
28	2	A3,A4,B2,B3,B4,C1,C4, D5	Adrenal functions		
29	2	A3,A4,B2,B3,B4,C1,C4, D5	Physiology of the bone		
30	2	A3,A4,B2,B3,B4,C1,C4, D5	Regulation of carbohydrate metabolism		

11. Infrastructure	
Books Required reading	Guyton and Hall Textbook of Medical Physiology Ganong's Review of Medical Physiology
Main references (sources)	
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

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COURSE SPECIFICATION

This course description provides a necessary summary of the most important characteristics of the course and the learning results expected from the student to achieve, demonstrating whether he has achieved the maximum benefit from the available learning opportunities. It must be linked to the program description.

1. Educational institution	Al-Ayen University - College of Pharmacy
2. College department/Center	Pharmacology & Toxicology
3. Course title/code	Pharmacology I/ PH3202
4. Modes of Attendance offered	Full-time and official attendance hours
5. Semester/Year	Second semester 2021-2022
6. Credits (total)	2 hr x 15 weeks = 30 hrs
7. Date of description form preparation//Revision of this specification	27/9/2021
8. Course Objectives	
1. The current course enables students to study types of medications, their uses, adverse effects of drugs, drug-drug interactions and interactions of drugs with body functions.	

Al-Ayen University

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9. Learning Outcomes, Teaching, Learning and Assessment Method

A. Cognitive goals

1. Identify the main concepts in pharmacokinetics such as absorption, distribution, metabolism, and excretion.
2. Study the Pharmacodynamics of drugs
3. study adverse effects of drugs and drug-drug interactions

B. The skills goals special to the course

1. Empowering students to possess skills in conducting scientific experiments.
2. Empowering students to possess skills in dialogue, discussion and listening to others.

Teaching and Learning Methods

- 1- PowerPoint and Multimedia presentation
- 2- Class discussion
- 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

C. Affective and value goals

- 1- Adhere to the highest standards of ethical and professional behavior in all aspects of treatment decision-making and patient care.
- 2- Evidence-based practice.
- 3- Collaborate effectively with other healthcare professionals for the best interest of the patient.

Teaching and Learning Methods

- 1- Lectures
- 2- PowerPoint presentation
3. Labs

Assessment methods

Theoretical and practical exams

D. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Presentation of seminars.
2. Developing students' sense of responsibility during the period of study and work.
3. Graduates project
4. Enhancing the spirit of cooperation and teamwork among students.

10. Theory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	General introduction to pharmacology	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Pharmacokinetics		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drug receptor interaction and pharmacodynamics		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Autonomic nervous system		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Cholinergic system		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anticholinergic agents		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Adrenergic system		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Principal of antimicrobial therapy		
9.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	B-lactam and other cell wall synthesis inhibitor antibiotics		
10.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Quinolones, folate antagonists and urinary tract antiseptics		
11	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antimycobacterium drugs		
12	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antifungal drugs		
13	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antiprotozoal drugs		
14	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anthelmintic drugs		
15	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antiviral drugs		

10. Laboratory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Routes of drug administration	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Presentation of cases 4- Handouts 3- Cases	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Onset and duration of drugs (barbiturates)		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Absorption and excretion of drugs		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Effect of parasympathomimetics on gland secretions		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs and human eye		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	The effects of drugs on IOP rabbits		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Evaluation of opioid analgesics		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Evaluation of NSAIDS		
9.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Evaluation of anti-parkinsonian drugs		
10.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Evaluation of anti-convulsant drugs		
11	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Effects of drugs and their antagonists on isolated rat ileum		
12	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Effects of drugs and their antagonists on isolated rabbit ileum		

11. Infrastructure	
Books Required reading	Lippencott's pharmacology, last edition
Main references (sources)	Lippencott's pharmacology, last edition
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

12. Course development plan
Not available

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COURSE SPECIFICATION

This course description provides a necessary summary of the most important characteristics of the course and the learning results expected from the student to achieve, demonstrating whether he has achieved the maximum benefit from the available learning opportunities. It must be linked to the program description.

1. Educational institution	Al-Ayen University - College of Pharmacy
2. College department/Center	Pharmacology & Toxicology
3. Course title/code	Pharmacology II/ PH4101 Pharmacology III/ PH4201
4. Modes of Attendance offered	Full-time and official attendance hours
5. Semester/Year	First and second semester 2021-2022
6. Credits (total)	2 hr x 15 weeks = 30 hrs
7. Date of description form preparation//Revision of this specification	22/9/2021
8. Course Objectives	
2. The current course enables students to study types of medications, their uses, adverse effects of drugs, drug-drug interactions and interactions of drugs with body functions.	

9. Learning Outcomes, Teaching, Learning and Assessment Method

E. Cognitive goals

1. Identify the main concepts in pharmacokinetics such as absorption, distribution, metabolism, and excretion.
2. Study the Pharmacodynamics of drugs
3. study adverse effects of drugs and drug-drug interactions

F. The skills goals special to the course

1. Empowering students to possess skills in conducting scientific experiments.
2. Empowering students to possess skills in dialogue, discussion and listening to others.

Teaching and Learning Methods

- 1- PowerPoint and Multimedia presentation
- 2- Class discussion
- 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

G. Affective and value goals

- 1- Adhere to the highest standards of ethical and professional behavior in all aspects of treatment decision-making and patient care.
- 2- Evidence-based practice.
- 3- Collaborate effectively with other healthcare professionals for the best interest of the patient.

Teaching and Learning Methods

- 1- Lectures
- 2- PowerPoint presentation
3. Labs

Assessment methods

Theoretical and practical exams

H. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Presentation of seminars.
2. Developing students' sense of responsibility during the period of study and work.
3. Graduates project
4. Enhancing the spirit of cooperation and teamwork among students.

10. Theory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Introduction to nervous system	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anxiolytic drugs		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antidepressant drugs		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anti-schizophrenia drugs		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anaesthetic drugs		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Central analgesic drugs		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antiparkinson drugs		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anti-seizure drugs		
9.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antihypertensive agents		
10.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs for congestive heart failure		
11	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Angina drugs		
12	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Hypercholesterolemia drugs		
13	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antiarrhythmic agents		
14	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anticoagulant agents		

10. Theory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs of pituitary gland	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Antidiabetic drugs (insulin)		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Oral hypoglycemic agents		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs of adrenal gland		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	The gonadal hormones and inhibitors		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Autacoids and autacoid antagonists		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	NSAIDS and other anti inflammatory agents		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs used in erejctile dysfunction		
9.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs used in osteoporosis		
10.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs used in the management of obesity		
11.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Cancer chemotherapy		
12.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Anticancer drugs		
13.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Immunosupressants		
14.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Hormones of the thyroid gland		
15.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drugs for anemia		

11. Infrastructure	
Books Required reading	Lippencott's pharmacology, last edition
Main references (sources)	Lippencott's pharmacology, last edition
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

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جامعته العين

COURSE SPECIFICATION

This course description provides a necessary summary of the most important characteristics of the course and the learning results expected from the student to achieve, demonstrating whether he has achieved the maximum benefit from the available learning opportunities. It must be linked to the program description.

1. Educational institution	Al-Ayen University - College of Pharmacy
2. College department/Center	Pharmacology & Toxicology
3. Course title/code	Toxicology\PH4204
4. Modes of Attendance offered	Full-time and official attendance hours
5. Semester/Year	Second semester 2021-2022
6. Credits (total)	2 hr x 15 weeks = 30 hrs
7. Date of description form preparation//Revision of this specification	27/9/2021
8. Course Objectives	
3. The current course enables students to study toxicology of various body systems , toxicokinetics and mechanism of toxicity of drugs and toxicant agents.	

Al-Ayen University

جامعَةُ الْعَيْنِ

9. Learning Outcomes, Teaching, Learning and Assessment Method

I. Cognitive goals

1. Identify the main concepts in toxicokinetics such as absorption, distribution, metabolism, and excretion.
2. Study the toxicodynamics of drugs and toxicant agents
3. study toxic effects of drugs

J. The skills goals special to the course

1. Empowering students to possess skills in conducting scientific experiments.
2. Empowering students to possess skills in dialogue, discussion and listening to others.

Teaching and Learning Methods

- 1- PowerPoint and Multimedia presentation
- 2- Class discussion
- 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

K. Affective and value goals

- 1- Adhere to the highest standards of ethical and professional behavior in all aspects of treatment decision-making and patient care.
- 2- Evidence-based practice.
- 3- Collaborate effectively with other healthcare professionals for the best interest of the patient.

Teaching and Learning Methods

- 1- Lectures
- 2- PowerPoint presentation
3. Labs

Assessment methods

Theoretical and practical exams

L. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Presentation of seminars.
2. Developing students' sense of responsibility during the period of study and work.
3. Graduates project
4. Enhancing the spirit of cooperation and teamwork among students

10. Theory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Introduction of toxicology	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Presentation of cases 4- Handouts 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Introduction of toxicology		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Hepatotoxicity		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Toxicology of respiratory system		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Renal toxicity		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Haematotoxicity		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Toxicology of the nervous system		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Metals toxicity		
9.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Pesticides		
10.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Food poisoning		
11.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Air pollutants		
12.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Radiological toxicity		

10. Laboratory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	General introduction to practical toxicology	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Reports	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Acute toxicity study, determination of LD50		
3.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Acute toxicity on liver		
4.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Nicotine toxicity		
5.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Pesticide toxicity		
6.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Metal toxicity		
7.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Blood toxicity		
8.	2	A1,A2,A3,A4,B1,B2,B3,B4,B5,C1,C2,C3,C4,D1,D3,D4,D5	Drug induced toxicity		

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11. Infrastructure	
Books Required reading	Casarett and Doull's toxicology: The Basic Science of Poisons
Main references (sources)	Casarett and Doull's toxicology: The Basic Science of Poisons
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

12. Course development plan
Not available

Al-Ayen University

جامعة العين

COURSE SPECIFICATION

This course description provides a necessary summary of the most important characteristics of the course and the learning results expected from the student to achieve, demonstrating whether he has achieved the maximum benefit from the available learning opportunities. It must be linked to the program description.

1. Educational institution	Al-Ayen University - College of Pharmacy
2. College department/Center	Pharmacology & Toxicology
3. Course title/code	Clinical Toxicology\PH5106
4. Modes of Attendance offered	Full-time and official attendance hours
5. Semester/Year	First semester 2021-2022
6. Credits (total)	2 hr x 15 weeks = 30 hrs
7. Date of description form preparation//Revision of this specification	27/9/2021
8. Course Objectives	
4. The current course enables students to study management of poisoning cases, antidotes of drugs, decontamination and enhancement of elimination of toxicant agents.	

9. Learning Outcomes, Teaching, Learning and Assessment Method

M. Cognitive goals

1. Identify the main concepts in assessment and management of poisoning cases
2. Study the toxicodynamics of drugs
3. study toxic effects of drugs and toxicant substances
4. study the antidotes of drugs

N. The skills goals special to the course

1. Empowering students to possess skills in conducting clinical experiments.
2. Empowering students to possess skills in dialogue, discussion and listening to others.

Teaching and Learning Methods

- 1- PowerPoint and Multimedia presentation
- 2- Class discussion
- 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams

Assessment methods

- 1- Short MCQs
- 2- Oral exam and direct questions in the class
- 3- Midterm exam
- 4- Electronic exams on the electronic platform
- 5- Final exam

O. Affective and value goals

- 1- Adhere to the highest standards of ethical and professional behavior in all aspects of treatment decision-making and patient care.
- 2- Evidence-based practice.
- 3- Collaborate effectively with other healthcare professionals for the best interest of the patient.

Teaching and Learning Methods

- 1- Lectures
- 2- PowerPoint presentation

Assessment methods

1. Case-based scenarios
2. Theoretical and practical exams

P. General and rehabilitative transferred skills (other skills relevant to employability and personal development)

1. Determine the appropriate medication at the appropriate dose for an individual or multiple disease condition.
2. Solve problems and design treatment plans and schedules to achieve goals on time.
3. To be able to work in the hospital's pharmacy and specialized departments.

10. Theory Course Structure

Week	Hrs	ILOs	Unit/Module or Topic Title	Teaching methods	Assessment methods
1.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Introduction of clinical toxicology	1- Whiteboard and PowerPoint and data show presentation 2- Class discussion 3- Presentation of cases 4- Handouts 5- Visual aids: Utilize visual aids such as pictures, charts, graphs, diagrams	1- Short MCQs 2- Oral exam and direct questions in the class 3- Midterm exam 4- Electronic exams on the electronic platform 5- Final exam
2.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Initial evaluation and management of poisoned patients		
3.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Amphetamines overdose		
4.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Paracetamol, aspirin, overdose		
5.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Opioids overdose		
6.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Digoxin and calcium channel blockers toxicity		
7.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Caffeine, theophylline and antihistamine toxicity		
8.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Tricyclic antidepressants toxicity		
9.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Beta blockers toxicity		
10.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Botanicals and plants-derived toxins		
11.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Alcohol (ethanol, methanol) poisoning		
12.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Drug toxicity: anticholinergic, nonsteroidal anti-inflammatory		
13.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Chemical and environmental toxins		
14.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Chelating agents		
15.	2	A1,A2,A3,A4,B1,B3,B4,B5,C3,C4,D1,D3,D5	Drug of abuse		

11. Infrastructure	
Books Required reading	Principles of Clinical Toxicology, latest edition Handbook of Medicinal Toxicology, latest edition
Main references (sources)	Principles of Clinical Toxicology, latest edition Handbook of Medicinal Toxicology, latest edition
Recommended books and references (scientific journals, reports...).	
Electronic references, Internet sites...	

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