|  |  |
| --- | --- |
| **Course Title:** | **Pharmacology-2** |
| **Course Code:** | **443 PHCL-3** |
| **Program:** | **Pharmaceutical Sciences** |
| **Department:** | **Pharmacology** |
| **College:** | **Pharmacy** |
| **Institution:** | **Najran University** |

Table of Contents

[A. Course Identification 3](#_Toc951372)

[6. Mode of Instruction (mark all that apply) 3](#_Toc951373)

[B. Course Objectives and Learning Outcomes 3](#_Toc951374)

[1. Course Description 3](#_Toc951375)

[2. Course Main Objective 4](#_Toc951376)

[3. Course Learning Outcomes 4](#_Toc951377)

[C. Course Content 4](#_Toc951378)

[D. Teaching and Assessment 5](#_Toc951379)

[1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods 6](#_Toc951380)

[2. Assessment Tasks for Students 7](#_Toc951381)

[E. Student Academic Counseling and Support 7](#_Toc951382)

[F. Learning Resources and Facilities 7](#_Toc951383)

[1.Learning Resources 7](#_Toc951384)

[2. Facilities Required 8](#_Toc951385)

[G. Course Quality Evaluation 8](#_Toc951386)

[H. Specification Approval Data 8](#_Toc951387)

# A. Course Identification

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **1. Credit hours:** | | | | **3 (2+1)** | | | | | | | | | | | | |
| **2. Course type** | | | | | | | | | | | | | | | | |
| **a.** | University | |  | | College | | | 🗸 | Department | | | |  | Others |  |  |
| **b.** | | Required | | | | 🗸 | Elective | | |  |  | | | | | |
| **3. Level/year at which this course is offered:** | | | | | | | | | | | | **7th level/Fourth year** | | | | |
| **4. Pre-requisites for this course** (if any)**:**  **Pharmacology-1 (342 PHCL-3)** | | | | | | | | | | | | | | | | |
| **5. Co-requisites for this course** (if any)**: None** | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | |

## 6. Mode of Instruction (mark all that apply)

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage** |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** | 60 | 100 % |
| **2** | **Blended** | -- | -- |
| **3** | **E-learning** | -- | -- |
| **4** | **Correspondence** | -- | -- |
| **5** | **Other** | -- | -- |

**7. Actual Learning Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Learning Hours** |
| **Contact Hours** | | |
| **1** | **Lecture** | 30 |
| **2** | **Practical classes** | 30 |
| **3** | **Tutorial** | -- |
| **4** | **Others** (specify) | -- |
|  | **Total** | 60 |
| **Other Learning Hours\*** | | |
| **1** | **Study** | 45 |
| **2** | **Assignments** | 10 |
| **3** | **Library** | 05 |
| **4** | **Others** (specify) | 0 |
|  | **Total** | 120 |

**\*** The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

# B. Course Objectives and Learning Outcomes

|  |
| --- |
| 1. Course Description This course provides students with the basic concepts of pharmacology of autacoids, including histamine and antihistaminic drug, antiserotonin, angiotensins, eicosanoids and modulating drugs. In addition, it involves studying the pharmacological basis of respiratory and gastrointestinal drugs. The course involves studying the pharmacological basis of drugs affecting the central nervous system. The practical sessions include training the students on solving clinical cases and use critical thinking to choose the proper choice for therapeutic applications of drugs. |
|  |
| 2. Course Main Objective |
| Students after completion of this course will be:   * + - * Aware by the pharmacological principles of autacoids.       * Acquainted with the pharmacological principles of drugs acting on the respiratory system.       * Aware by the pharmacological principles of drugs acting on the gastrointestinal system.       * Conversant with the pharmacological principles of drugs acting on the central nervous system. |

## 

## 3. Course Learning Outcomes

| **CLOs** | | **Aligned****PLOs** |
| --- | --- | --- |
| 1 | **Knowledge:** |  |
| 1.1 | Students after completion of this course will be able to:  Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of Autacoids and related drugs, and Respiratory system including anti-asthmatic drugs, antitussives, expectorants and mucolytics. | K4 |
| 1.2 | Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of drugs acting on the gastrointestinal system (laxatives, antidiarrheal, antiemetics, and treatment of acid-peptic disorders) | K4 |
| 1.3 | Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of drugs acting on the central nervous system (anesthetics, psychotropic drugs, opioid analgesics, NSAIDs, and treatment of depression, anxiety, Alzheimer's disease, Parkinsonism, and Epilepsy). | K4 |
| **2** | **Skills :** |  |
| 2.1 | Summarize the pharmacological basis of proper selection and use of drugs in various disease conditions related to autacoids, and respiratory system. To use critical thinking, case-solving and decision making skills. | S1 |
| 2.2 | Predict the possible therapeutic uses, drug interactions adverse drug reactions and contraindications of various drugs acting on gastrointestinal system. To use critical thinking, case-solving and decision making skills. | S1 |
| 2.3 | To use critical thinking, case-solving and decision making skills in proper selection of drugs for each disease condition related to the central nervous system. | S1 |
| **3** | **Competence:** |  |
| 3.1 | Work independently and professionally and communicate clearly by verbal and written means. | C2 |
| 3.2 | Professional use of computer in preparing reports, assignments and oral presentations and to be skilled in the use of electronic library and internet resources for self-directed learning. | C3 |

# C. Course Content

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
|  | **I. Theoretical Section:** |  |
| 1 | Autacoids; Histamine and antihistaminic drugs | 2 |
| 2 | Serotonin and anti-serotonin drugs | 2 |
| 3 | Angiotensin and kinins; and drug affecting it | 2 |
| 4 | Eicosanoids and drugs affecting it | 1 |
| 5 | Drug treatment of asthma | 2 |
| 6 | Antitussive and expectorant drugs | 1 |
| 7 | Drug treatment of peptic ulcer | 2 |
| 8 | Laxatives, antidiarrheal drug and antiemetics | 2 |
| 9 | Introduction to CNS | 1 |
| 10 | General anesthetics | 2 |
| 11 | Skeletal muscle relaxants | 1 |
| 12 | Local anesthetics | 1 |
| 13 | Opioid analgesic and opioid antagonists | 1 |
| 14 | Non-steroidal anti-inflammatory drugs | 1 |
| 15 | Drug treatment of Gout | 1 |
| 16 | Sedative and hypnotic Drugs | 1 |
| 17 | Antiepileptic drugs | 1 |
| 18 | Neurodegenerative diseases-1: Drug treatment of Parkinsonism | 1 |
| 19 | Neurodegenerative diseases-2: Drug treatment of Alzheimer’s Disease | 1 |
| 20 | Antipsychotic drugs and lithium | 2 |
| 21 | Antidepressant drugs | 2 |
| **Total** | | 30 |

|  |  |  |
| --- | --- | --- |
| **No** | **List of Topics** | **Contact Hours** |
|  | **I. Practical Section:** |  |
| 1 | Practical pharmacology of Antihistamines | 2 |
| 2 | Practical pharmacology of serotonin antagonists and ACE inhibitors | 2 |
| 3 | Practical pharmacology of Bronchial Asthma | 2 |
| 4 | Practical pharmacology of Peptic Ulcer | 2 |
| 5 | Practical pharmacology of Laxatives, and Antidiarrheal agents. | 2 |
| 6 | Practical pharmacology of General Anesthetics | 2 |
| 7 | Practical pharmacology of neuromuscular blockers | 2 |
| 8 | Practical pharmacology of Opioid Analgesics | 2 |
| 9 | Practical pharmacology of Non-steroidal Anti-inflammatory Drugs | 2 |
| 10 | Practical pharmacology of Sedative Hypnotic Drugs | 2 |
| 11 | Practical pharmacology of Antiepileptic Drugs. | 2 |
| 12 | Practical pharmacology of Antiparkinsonial Drugs | 2 |
| 13 | Practical pharmacology of Antipsychotic Drugs | 2 |
| 14 | Practical pharmacology of Antidepressant Drugs | 2 |
| 15 | Revision | 2 |
| **Total** | | 30 |

# D. Teaching and Assessment

## 1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

| **Code** | **Course Learning Outcomes** | **Teaching Strategies** | **Assessment Methods** |
| --- | --- | --- | --- |
| **1.0** | **Knowledge** | | |
| 1.1 | Students after completion of this course will be able to:  Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of Autacoids and related drugs, and Respiratory system including anti-asthmatic drugs, antitussives, expectorants and mucolytics. | Lectures | Theoretical exams |
| 1.2 | Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of drugs acting on the gastrointestinal system (laxatives, antidiarrheal, antiemetics, and treatment of acid-peptic disorders) | Lectures | Theoretical exams |
| 1.3 | Describe the pharmacological basis, mechanism of action, therapeutic uses and adverse reactions of drugs acting on the central nervous system (anesthetics, psychotropic drugs, opioid analgesics, NSAIDs, and treatment of depression, anxiety, Alzheimer's disease, Parkinsonism, and Epilepsy). | Lectures | Theoretical exams |
| **2.0** | **Skills** | | |
| 2.1 | Summarize the pharmacological basis of proper selection and use of drugs in various disease conditions related to autacoids, and respiratory system. To use critical thinking, case-solving and decision making skills. | Practical classes | Practical Exams |
| 2.2 | Predict the possible therapeutic uses, drug interactions adverse drug reactions and contraindications of various drugs acting on gastrointestinal system. To use critical thinking, case-solving and decision making skills. | Practical classes | Practical Exams |
| 2.3 | To use critical thinking, case-solving and decision making skills in proper selection of drugs for each disease condition related to the central nervous system. | Practical classes | Practical Exams |
| **3.0** | **Competence** | | |
| 3.1 | Work independently and professionally and communicate clearly by verbal and written means. | Practical classes | Observation card |
| 3.2 | Professional use of computer in preparing reports, assignments and oral presentations and to be skilled in the use of electronic library and internet resources for self-directed learning. | Practical classes  Self-directed learning  Web search | Assignments  Oral presentations |

## 

## 2. Assessment Tasks for Students

| **#** | **Assessment task\*** | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Midterm exam **1** | 6 | 15% |
| **2** | Midterm exam **2** | 10 | 15% |
| **3** | Lab. practical quizzes | Per Semester | 5% |
| **4** | Assignments | 12 | 5% |
| **5** | Observation card in lab | 2-12 | 5% |
| **6** | Final practical Exam | 15 | 15% |
| **7** | Final exam | 16-17 | 40% |
| **8** | Total |  | 100% |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# E. Student Academic Counseling and Support

|  |
| --- |
| **Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :** |
| * Office hours (2 hours per week + appointment to fulfill the students’ academic requirements). * Help session (problem solving) : 2 hours per week * Student counseling: as required per week. * Office hours are announced on the office door and Blackboard |

# F. Learning Resources and Facilities

## Learning Resources

|  |  |
| --- | --- |
| **Required Textbooks** | 1. B. Katzung. Basic & Clinical Pharmacology. 14th edition by B.G. Katzung. 2. Rang and Dale’s Pharmacology. 8th edition by J Ritter, R Flower, G Henderson, H Rang. 3. Lippincott's Illustrated Reviews: Pharmacology, 6th Edition by K. Whalen. |
| **Essential References Materials** | 1. B. Katzung. Basic & Clinical Pharmacology. 14th edition by B.G. Katzung. 2. Power-point slides for Lectures 3. Practical Log-Book |
| **Electronic Materials** | 1. Pub Med 2. Science direct. 3. Medscape. 4. Youtube. 5. Wikipedia. 6. MedicineNet. Com. 7. Mayoclinic 8. Saudi Digital Library. <https://sdl.edu.sa/SDLPortal/ar/Publishers.aspx> |
| **Other Learning Materials** | 1. Drug sample Lab 2. Microsoft-soft Word 3. Microsoft Power-point |

## 

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**  (Classrooms, laboratories, demonstration rooms/labs, etc.) | 1. A lecture classroom accommodate 30 students. 2. Pharmacology laboratory to accommodate 30 students. 3. Drug samples demonstration lab. |
| **Technology Resources**  (AV, data show, Smart Board, software, etc.) | 1. Data show. 2. Smart Boards. 3. Sound systems 4. Internet and Wifi- access. |
| **Other Resources**  (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Different drug dosage forms. |

# G. Course Quality Evaluation

| **Evaluation**  **Areas/Issues** | **Evaluators** | **Evaluation Methods** |
| --- | --- | --- |
| Effectiveness of teaching and assessment | Head of the department and students. | Direct  Indirect (Questionnaire) |
| Effectiveness of student assessment | Department faculty members and department council. | Direct  Direct |
| Achievement of course learning outcomes (CLOs) | Students  Department faculty members | Indirect (Questionnaires)  Direct |
| Quality of learning resources | Students. | Indirect (Questionnaires) |

**Evaluation areas** (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)

**Evaluators** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)

**Assessment Methods** (Direct, Indirect)

# H. Specification Approval Data

|  |  |
| --- | --- |
| **Council / Committee** | **Pharmacology Department Council** |
| **Reference No.** | **Council No. 7, 1441-1442 H** |
| **Date** | **24/04/1442 H** |