### Name of Institute: INDUS UNIVERSITY- IISHLS (Institute of science Humanities and liberal studies)

### Name of Faculty: Dr. Mayur Savaliya

**Pharmacology-I**

Course code: **PCR0302**

Course name:B.SC CLINICAL RESEARCH AND HEALTHCARE MANAGEMENT

Pre-requisites: Basic understanding and knowledge of clinical research

Credit points: 4 credits

Offered Semester:

**Course Coordinator**

Full Name:Dr. Mayur Savaliya

Department with siting location: 4thfloor Bhawar building, Staff Room

Telephone: 8156071033

### Email:mayursavaliya.cr@indusuni.ac.in

Consultation times:Monday to Friday 3 to 4 pm

**Course Lecturer**

Full name:Dr. Mayur Savaliya

Department with siting location: 4thfloor Bhawar building, Staff Room

Telephone: 8156071033

Email:mayursavaliya.cr@indusuni.ac.in

Consultation times: Monday to Friday 3 to 4 pm

Students will be contacted throughout the Session via Mail with important information relating to this Course.

# Course Objectives

By participating in and understanding all facets of this Course a student will understand the Pharmacology in Detail

Course Outcomes (CO):

After successful completion of course, student will able to understand

* To understand the pharmacological aspects of drugs falling under the above mentioned chapters.
* To appreciate the importance of pharmacology subject as a basis of therapeutics.
* To correlate and apply the knowledge therapeutically.

Course Outline

(Key in topics to be dealt)

**UNIT -1 BASIC PRINCIPLES OF PHARMACOLOGY**

Introduction to pharmacology, drug receptors and pharmacodynamics, pharmacokinetics and pharmacodynamics, rational dosing and the time of drug action, Drug Biotransformation, Development and Regulation of Drugs.

**UNIT -2 AUTONOMIC DRUGS**

Introduction to Autonomic pharmacology, Cholinoceptor activating and Cholinesterace- Inhibiting drugs, Cholinoceptor-Blocking drugs, Adrenoceptor-Activating and other sympathomimetic drugs, Adrenoreceptor Antagonist drugs.

**UNIT-3 DRUG ACTING ON CARDIOVASCULAR** SYSTEM

Antihypertensive agents, Vasodilators and the treatment of Angina pectoris, Drugs used in Heart Failure, Agents Used in Cardiac arrhythmias, Diuretic Agents.

**UNIT 4 DRUGS ACTING ON RENAL SYSTEM**

Anatomy and physiology of Urinary system, detailed classes of diuretics, Drugs for BPH.

**UNIT -5 AUTOCOID DRUGS**

Histamines, Serotonin and the ergot alkaloids, Vasoactive peptides, the Eicosanoids, prostaglandins, thromboxanes, leukotrienes, and related compounds, Nitric oxide and Drugs used in asthma.

# Method of delivery

1. Face to face lectures
2. PPT/Video presentation/
3. Class activities
4. Article presentation
5. Seminar presentation

# Study time

4 hours/week

# Blooms Taxonomyand Knowledge retention(For reference)

(Blooms taxonomy has been given for reference)



Figure 1: Blooms Taxonomy



Figure 2: Knowledge retention

# Graduate Qualities and Capabilities covered

(Qualities graduates harness crediting this Course)

|  |  |
| --- | --- |
| **General Graduate Qualities** | **Specific Department of \_\_\_\_\_\_Graduate Capabilities** |
| **Informed**Have a sound knowledge of an area of study or profession and understand its current issues, locally and internationally. Know how to apply this knowledge. Understand how an area of study has developed and how it relates to other areas. | **1 Professional knowledge, grounding & awareness:**Student will be able to learn regarding pharmacology in details. |
| **Independent learners**Engage with new ideas and ways of thinking and critically analyze issues. Seek to extend knowledge through ongoing research, enquiry and reflection. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others. | **2 Information literacy, gathering & processing**Student will be able to learn different types of diseases, Patho physiology and Medicines to cure the diseases. |
| **Problem solvers**Take on challenges and opportunities. Apply creative, logical and critical thinking skills to respond effectively. Make and implement decisions. Be flexible, thorough, innovative and aim for high standards. | **4 Problem solving skills**Student will be able to learn problem solving skill by solving queries in project and can use easy software Handling. |
| **Effective communicators**Articulate ideas and convey them effectively using a range of media. Work collaboratively and engage with people in different settings. Recognize how culture can shape communication. | **5 Written communication** |
| **6 Oral communication** |
| **7 Teamwork**Students can learn in industry with practical approach and in team work with user department and in collaboration with different stakeholders. |
| **Responsible**Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity. Act with integrity as part of local, national, global and professional communities.  | **10 Sustainability, societal & environmental impact**Students can understand the mechanism of action of drugs used in different types diseases. |

# Practical work:

Document preparation

Case studies in clinical trials

# Lecture/tutorial times

(Give lecture times in the format below)

4 Lectures/week

# Attendance Requirements

The University norms states that it is the responsibility of students to attend all lectures, tutorials, seminars and practical work as stipulated in the Course outline. Minimum attendance requirement as per university norms is compulsory for being eligible for mid and end semester examinations.

# Details of referencing system to be used in written work

1. Essentials of Medical Pharmacology. K.D Tripathi, Publisher: Jaypee brothers, 2013,3rd Edition.
2. Basic and clinical pharmacology, Lange. by [Bertram G. Katzung](https://www.amazon.in/s/ref%3Ddp_byline_sr_ebooks_1?ie=UTF8&text=Bertram+G.+Katzung&search-alias=digital-text&field-author=Bertram+G.+Katzung&sort=relevancerank) 11th Edition.
3. Goodman and Gilman’s the pharmacological basics OF therapeutics.9th Edition.

 **Textbook:**

Essentials of Medical Pharmacology. K.D Tripathi

**Additional Materials**

Notes and PPT assessment guidelines

Your final course mark will be calculated from the following:

**Assessment guidelines**

|  |
| --- |
| **Subject : Pharmacology – I** |
| **Program : M.Sc. Clinical Research**  | **Subject Code :PCR0302** | **Semester : III** |
|  |
| **Teaching Scheme** | **Examination Evaluation Scheme** |  |
| **Lecture** | **Tutorial** | **Practical** | **Credits** | **University Theory Examination** | **University Practical Examination** | **Continuous Internal Evaluation (CIE)- Theory** | **Continuous Internal Evaluation (CIE) - Practical** | **Total** |
| **4** | **0** | **0** | **4** | **40** |  | **60** |  | **100** |

# Mid sem exam 40 marks Attendance 05 marks Presentation 05 marks Assignment 1 05 marks Assigment 2 05 marks Final exam 40 marks

# SUPPLEMENTARY ASSESSMENT

Students who receive an overall mark less than 40% in mid semester or end semester will be considered for supplementary assessment in the respective components (i.e mid semester or end semester) of semester concerned. Students must make themselves available during the supplementary examination period to take up the respective components (mid semester or end semester) and need to obtain the required minimum 50% marks to clear the concerned components.

# Practical Work Report/Laboratory Report:

A report on the practical work is due the subsequent week after completion of the class by each group.

# Late Work

Late assignments will not be accepted without supporting documentation. Late submission of the reports will result in a deduction of -% of the maximum mark per calendar day

# Format

All assignments must be presented in a neat, legible format with all information sources correctly referenced. **Assignment material handed in throughout the session that is not neat and legible will not be marked and will be returned to the student.**

# Retention of Written Work

Written assessment work will be retained by the Course coordinator/lecturer for two weeks after marking to be collected by the students.

# University and Faculty Policies

Students should make themselves aware of the University and/or Faculty Policies regarding plagiarism, special consideration, supplementary examinations and other educational issues and student matters.

**Plagi**a**rism** - Plagiarism is not acceptable and may result in the imposition of severe penalties. Plagiarism is the use of another person’s work, or idea, as if it is his or her own - if you have any doubts at all on what constitutes plagiarism, please consult your Course coordinator or lecturer. Plagiarism will be penalized severely.

***Do not copy the work of other students.***

***Do not share your work with other students (except where required for a group activity or assessment)***

***.***

# Course schedule(subject to change)

**(Mention quiz, assignment submission, breaks etc.as well in the table under the Teaching Learning Activity Column)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Week #**  | **Topic & contents**  | **CO Addressed** | **Teaching Learning Activity (TLA)** |
|  | Weeks 1 | BASIC PRINCIPLES OF PHARMACOLOGY  | Presentation material | PPT/Notes |
| Weeks 2 | Introduction to pharmacology, drug receptors and pharmacodynamics, pharmacokinetics and pharmacodynamics | Presentation material | PPT/Notes |
| Week 3 |  Rational dosing and the time of drug action, Drug Biotransformation, Development and Regulation of Drugs. | Presentation material | PPT/Notes |
| Week 4 | AUTONOMIC DRUGS  | Presentation material | PPT/Notes |
| Week 5 | Introduction to Autonomic pharmacology, Cholinoceptor activating and Cholinesterace- Inhibiting drugs, | Presentation material | PPT/Notes |
|  |  |
|  | Week 6 | Cholinoceptor-Blocking drugs, Adrenoceptor-Activating and other sympathomimetic drugs, Adrenoreceptor Antagonist drugs. | Presentation material | PPT/Notes |
| Week 7 | DRUG ACTING ON CARDIOVASCULAR SYSTEMAntihypertensive agents, Vasodilators and the treatment of Angina pectoris, | Presentation material | PPT/Notes |
| Week 8 | Drugs used in Heart Failure, Agents Used in Cardiac arrhythmias, Diuretic Agents.  | Presentation material | PPT/Notes |
| Week 9 | DRUGS ACTING ON RENAL SYSTEM | Presentation material | PPT/Notes |
|  | Week 10 | Anatomy and physiology of Urinary system, detailed classes of diuretics, Drugs for BPH. | Presentation material | PPT/Notes |
| Week 11 | AUTOCOID DRUGS Histamines, Serotonin and the ergot alkaloids, Vasoactive peptides, | Presentation material | PPT/Notes |
|  | Week 12 | The Eicosanoids, prostaglandins, thromboxanes, leukotrienes, and related compounds, Nitric oxide and Drugs used in asthma.  | Presentation material | PPT/Notes |