

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF PUBLIC HEALTH BIOMEDICAL SCIENCES AND TECHNOLOGY
(SPHBST)

COURSE OUTLINE

Department: Medical Laboratory Sciences

Programme: BACHELOR OF SCIENCE IN MEDICAL LABORATORY SCIENCES

Course Code: BML 417 Course Title: CLINICAL PHARMACOLOGY

Year of Study: Year 4 Academic Year: 2019/2020 Trimester: 1

Date: 28th September 2019

2. Introduction: The purpose of this course is to build on the body of knowledge acquired in the basic pharmacology course, Fundamentals of Pharmacology. It focuses on the application of the principles covered in the foundation course in dealing with clinical, research and industrial pharmacology work. It purposes to assist the learner to apply the principles of pharmacodynamics and pharmacokinetics in drug development, investigation of clinical problems as well as the performance of pertinent laboratory procedures. It also addresses emergent issues in clinical pharmacology as well as the role of the clinical laboratory in rational drug use and the performance of related laboratory investigations.

3. Learning outcomes

By the end of the course the student should be able to:

1. Explain the meaning and scope of clinical pharmacology and the role of the clinical laboratory in its practice.
2. Explain the principles and concepts applied in clinical pharmacology.
3. Explain the process of drug discovery and development.

4. Perform laboratory investigations for demonstrating drug effects on cells, isolated tissues and organs as well as whole animals and pathogenic organisms.
5. Observe the ethical and legal requirements that govern pharmacological laboratory experiments.

4. Learning / Teaching Strategy

Lectures, demonstrations, group discussions and class presentations.

5. Topic outline

| WEEK | TOPIC | ACTIVITIES |
|------|--|--|
| 1 | Drug discovery and development: preclinical laboratory studies, Clinical trials – Phase I, II, III and IV. Role of laboratory scientists in preclinical and clinical phases of drug development. | Lectures, Group work |
| 2 | Drug discovery and development- as above. | Lectures, discussions |
| 3 | Drugs acting on the cardiovascular system- Diuretics, Cardiac glycosides, Antihypertensives. | Lectures, demonstrations |
| 4 | Drugs acting on the Cardiovascular system- as above | |
| 5 | CAT 1 | Lectures, discussions |
| | Drugs acting on the Central Nervous System- Anticonvulsants. | |
| 6 | Sedatives, Hypnotics and Anxiolytics; Antidepressants. | |
| | Psychopharmacology | |
| 7 | Psychopharmacology- continued as above. | Lectures, discussions |
| 8 | Narcotic analgesics. Drugs used in the treatment of endocrine disorders- such as Diabetes mellitus. | Lectures, discussions Presentations |
| | CAT 2 | |

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|-----------|--|-------------------------|
| 9 | Drugs used in the treatment of infections- Antituberculosis drugs, Anthelmintics, Antimalarials. | Lectures, Presentations |
| 10 | Quality control and assurance in the pharmacology laboratory. | Lectures, discussions |
| 11 | Current and Emergent issues in Clinical Pharmacology- Drug use in the treatment of drug- resistant tuberculosis; the antimicrobial resistance challenge; Pharmacogenomics. | |
| 12 | End of Semester Examinations | |
| 13 | | |
| 14 | | |
| 15 | | |
| 16 | | |

6. Course Requirements

(a) Attendance

Attendance of lectures and other scheduled classes/practical/laboratory sessions is mandatory for all students. Any absence will prohibit the student from taking CA and examinations.

(b) Methods of Assessment

Continuous Assessment Tests (CATs):

Written CAT (At least 3 CATs, one of which has to be a sit-in) - 40 %

Final Examination (Written) - 60 %

Pass Mark **50 %**

7. Instructional Resources

(a) Main Reference Materials for this Course

1. Goodman L.S and Gilman A: The Pharmacological Basis of Therapeutics. (13th Edition), 2017. MacGraw Hill.
2. Rang H. P, Dale M. M, Ritter J. M, Flower R. J, and Henderson G: Rang and Dale's Pharmacology (7th Edition), 2012. Elsevier Churchill Livingstone, Edinburgh.
3. Katzung B. G: Basic and Clinical Pharmacology (12th Edition), 2012. Appleton Lange.

4. Laurence D.R, Bennet P. M and Brown M. J: Clinical Pharmacology (11th Edition), 2012. Churchill Livingstone.

8. Signing and Approval

Prepared by Course Lecturer:

Name: Dr. Gabriel W. Mukoya Signature.....Date: 28th September 2019.

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Issued by Curriculum Coordinator:

Name: Dr. G. W. Mukoya

Sign:.....Date:.....

Approved by CoD:

Name: Mr. Fidelis A. Mambo Sign:..... Date:.....