

# M.S. Ramaiah University of Applied Sciences

New BEL Road, MSR Nagar, Bangalore – 560054



**RAMAIAH  
UNIVERSITY**  
OF APPLIED SCIENCES

## **PO, PSO & CO**

**Programme: MD in Microbiology**

**Programme Code: 132**

**Programme Outcome (PO)**

**Programme Specific Outcome (PSO)**

**Course Outcomes (CO)**

*Shalini*

**Principal and Dean**

M.S. Ramaiah Medical College and Hospital

M.S. Ramaiah University of Applied Sciences

Bangalore-560054



# Ramaiah Medical College (RMC)

## Programme Outcomes

### Post Graduate Programme: MD in Microbiology

#### Programme Outcomes (PO) for MD Microbiology Postgraduate students:

- PO1.** Develop the knowledge, skills and attitude to be a competent Microbiologist (C, P, A).
- PO2.** Acquire and develop the knowledge, skills and attitude required to be a competent and ethical researcher and teacher. (C, P, A)
- PO3.** Be able to independently perform Diagnostic procedures with a reasonable degree of professionalism and competence. (C, P, A)
- PO4.** To be competent to play a pivotal role in hospital infection control. (C, P, A)
- PO5.** Demonstrate a commitment to excellence and continuous professional development with integrity, compassion and sensitivity to patient care. (A)

## Programme Specific Outcomes (PSOs)

#### Programme specific outcome (PSO) for MD Microbiology Postgraduate students:

- PSO1.** Demonstrate the application of microbiology with an effective communication skill in a variety of clinical settings to solve diagnostic and therapeutic problems along with preventive measures.(A)
- PSO2.** Advise on the selection of appropriate samples and tests necessary to arrive at a diagnosis & interpret the results obtained with reasonable accuracy(C, A)
- PSO3.** Establish good Clinical Microbiological services in a hospital and in the community in the fields of Bacteriology, Virology, Parasitology, Immunology and Mycology.(C,P,A)
- PSO4.** Acquire various skills for Intramural & Extramural collaborative research (C, P, A)
- PSO5.** Participate in various workshops/seminars/journal clubs(C,P,A)
- PSO6.** Plan, execute, analyze and present the research work in various workshops(C,P,A)
- PSO7.** Participate in various quality system procedures and quality assurance and accreditation process (C,P,A)
- PSO8.** Play a pivotal role in hospital infection control, including formulation of antibiotic policy and management of biomedical waste. (C,P,A)
- PSO9.** Demonstrate effective communication skills required for the practice of Clinical microbiology and while teaching undergraduate students. (A)

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- CO-1.** The student should acquire knowledge about the drug development process, principle of pharmacokinetic and pharmacodynamic drug-drug interactions, methods of Therapeutic drug monitoring, principles of pharmacogenetics, Pharmacoeconomics and Pharmacovigilance, Learn and apply the principles of Good Clinical Practice (C)  
Should be able to analyse the adverse effects associated with the use of drugs, along with causality assessment.
- CO-2.** Demonstrate knowledge of basics of research methodology, develop a research protocol, conduct the study, record experimental observations, analyze data using currently available statistical software, interpret results (A)  
The student should acquire knowledge and apply the principle of biostatistics in the evaluation and interpretation of drug safety and efficacy studies . (C )

## Course Outcomes (COs)

**Course Title & Code: Systemic Pharmacology (MDC518A)**

**At the end of the course, the students should be able to:**

- CO-1.** Should know and integrate the knowledge of pathophysiology of diseases, mechanism of action and pharmacological principles underlying the effects of drugs, for the purpose of diagnosis, prevention and treatment of systemic diseases involving Central Nervous system, Cardio vascular system, Endocrine system , Gastrointestinal system , Respiratory system, Renovascular system etc. (C,P).
- CO-2.** Should be well versed animal toxicity, rational use of drug and prescription auditing, preparation. Knowledge about poisoning, antimicrobial resistance and recent advances in pharmacology(C,P)
- CO-3.** Be conversant with mechanism of action, pharmacological effects and therapeutic status of drugs used for prevention and management of microbial and parasitic infections/infestations, neoplastic disorders and for the drugs used for dermatological and ocular disorders.

## Course Outcomes (COs)

**Course Title & Code: Clinical Pharmacology, Experimentation, Research, Biostatistics and Education (MDC519A)**

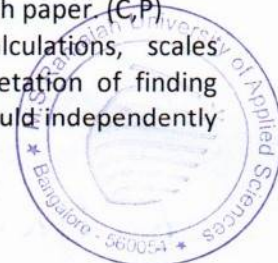
**At the end of the course, the students should be able to:**

- CO-1.** Be conversant with SOPs in performing major in vivo and in vitro animal experiments, basic principles of High performance Liquid chromatography (HPLC). Demonstrate standard operating procedures of various methods and techniques used in clinical trials and research (C,P)
- CO-2.** Demonstrate presentation skills at academic meetings, publications, writing research projects for funding agencies and able to analyze and evaluate a research paper (C,P)
- CO-3.** Should be introduced to biostatistics including sample size calculations, scales measurements, use appropriate statistical test for the data, interpretation of finding including application of correlation and regression analysis. He/she should independently

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- write the thesis as well as systematic reviews in accordance with the prescribed instructions as expected of international standards(C,P)
- CO-4.** Should effectively explain to patients, the effects and side effects of drugs, including the need for medication adherence and increase in awareness for the use of generic drugs in patients. (C, A)

### Course Outcomes (COs)

**Course Title & Code: Recent advances in the Pharmacology (MDC520A)**

**At the end of the course, the students should be able to:**

- CO-1.** Should be conversant recent advances and trends in the field of pharmacology, therapeutics. and regulatory guidelines for drugs/research and clinical trials. Application of nanotechnology in pharmacotherapeutics and recent advances in the understanding of drug action and their future therapeutic relevance (C, P)
- CO-2.** The student should be conversant evidence-based medicine, real-world evidence studies and pragmatic clinical trials, Pharmacovigilance, materiovigilance, (C)

### Course Outcomes (COs)

**Course Title & Code: Recent advances in the Pharmacology (MDC520A)**

**At the end of the course, the students should be able to:**

- CO-1.** Should be conversant recent advances and trends in the field of pharmacology, therapeutics. and regulatory guidelines for drugs/research and clinical trials. Application of nanotechnology in pharmacotherapeutics and recent advances in the understanding of drug action and their future therapeutic relevance (C, P)
- CO-2.** The student should be conversant evidence-based medicine, real-world evidence studies and pragmatic clinical trials, Pharmacovigilance, materiovigilance, (C)

### Course Outcomes (COs)

**Course Title & Code: Dissertation (MDP505A)**

**At the end of the course, the students should be able to:**

- CO-1.** Should be introduced to basic research methodology so that he/she can independently conduct fundamental and applied research in pharmacology and allied areas. He/she should independently write the thesis in accordance with the prescribed instructions as expected of international standards(C,P)
- CO-2.** The student should demonstrate integrity, accountability, continuous professional development and ethical principles relating to research conduct and research publication as applicable to all the specific courses

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