

M.S. Ramaiah University of Applied Sciences

New BEL Road, MSR Nagar, Bangalore – 560054



**RAMAIAH
UNIVERSITY**
OF APPLIED SCIENCES

PO, PSO, PEO & CO

Programme: M. Pharm in Pharmacy Practice


Programme Code: 062

Programme Outcome (PO)

Programme Specific Outcome (PSO)

Programme Educational Objectives (PEO)

Course Outcomes (CO)


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Faculty of Pharmacy
M.S. Ramaiah University of Applied Sciences
Bangalore-560054


Registrar
M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054

Approved in 23rd ACM (Resolution 23.05) held on 15th July 2021

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Faculty of Pharmacy (FPH)

Programme Name: M. Pharm. Pharmacy Practice (Master of Pharmacy)

Programme Outcomes (POs)

M. Pharm. graduates will be able to:

- PO-1. Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- PO-2. Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
- PO-3. Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- PO-4. Modern tool usage:** Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- PO-5. Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- PO-6. Professional Identity:** Understand, analyze and communicate the value of their professional roles in society (e.g. health care professionals, promoters of health, educators, managers, employers, employees).
- PO-7. Pharmaceutical Ethics:** Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- PO-8. Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- PO-9. The Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

PO-10. Environment and sustainability: Understand the impact of the professional pharmacy solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.


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PO-11. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change. Self-assess and use feedback effectively from others to identify learning needs and to satisfy these needs on an ongoing basis.

Programme Specific Outcomes (PSOs)

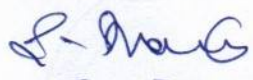
At the end of the M. Pharm program in Pharmacy Practice, the graduate will be able to:

- PSO-1.** Apply the knowledge to ensure rationalisation of drug therapy, identify adverse drug reactions, suggest alternative drug therapy in case of prescription errors, and outline the guidelines used for specific diseases
- PSO-2.** Interpret pharmacoeconomics to provide cost effective therapy, select suitable pharmacoepidemiological methods to measure outcomes and health related quality of life, resolve medication errors, employ clinical interventions by suggesting suitable pharmacotherapy and identify the best evidence-based drug therapy.
- PSO-3.** Acquire leadership qualities and strive for the betterment of organization, environment and society, conduct community and clinical pharmacist services through pharmaceutical care
- PSO-4.** Adapt to the chosen profession by continuous upgrading of knowledge and understanding through life-long learning.

Program Educational Objectives (PEOs)

The objectives of the M. Pharm program in Pharmacy Practice are to:

- PEO-1.** Educate the students to focus their attention in the fields of hospital and community pharmacy and guiding them to take up the jobs in the hospitals after their graduation
- PEO-2.** Create research interest in the minds of students so that willingly they may take up research as a career with passion in the field of clinical research as well as in the research organizations
- PEO-3.** Provide quality pharmacy education to the students, which help them get tuned to work in different research areas such as pharmacoeconomics, pharmaco-epidemiology and pharmacovigilance
- PEO-4.** Inculcate strong human values and social, interpersonal and leadership skills required for professional success in evolving global professional environments


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Course Outcomes (COs)

Course Title & Code: Clinical Pharmacy Practice (Theory) (PPC501)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the roles and responsibilities of clinical pharmacist
- CO-2. Interpret the laboratory test results for clinical diagnosis
- CO-3. Explain the importance of drug therapy review and pharmaceutical care
- CO-4. Assess the suspected adverse drug reactions and identify the medication errors
- CO-5. Interpret patient data analysis
- CO-6. Formulate drug and poison information service and answer a query

Course Outcomes (COs)

Course Title & Code: Pharmacotherapeutics I (Theory) (PPC502)

After the successful completion of this course, the student will be able to:

- CO-1. Appraise the etiopathogenesis of various disease conditions
- CO-2. Explain the patient specific parameters relevant in initiating drug therapy and monitoring therapy
- CO-3. Summarize the therapeutic approach for management of various disease conditions
- CO-4. Evaluate the rationale for drug therapy
- CO-5. Assess the clinical controversies in drug therapy
- CO-6. Recommend individualized therapeutic plans based on diagnosis

Course Outcomes (COs)

Course Title & Code: Hospital and Community Pharmacy (Theory) (PPC503)

After the successful completion of this course, the student will be able to:

- CO-1. Outline the organizational structure of hospital and community pharmacy
- CO-2. Elaborate on the various strategies for promotion of health
- CO-3. Summarize hospital drug policies and drug committees
- CO-4. Explain hospital formulary and develop therapeutic guidelines
- CO-5. Elaborate on the various strategies for promotion of health
- CO-6. Summarize the legal requirements of prescription and rational use of over-the-counter medications

Course Outcomes (COs)

Course Title & Code: Clinical Research (Theory) (PPC504)

After the successful completion of this course, the student will be able to:

- CO-1. Elaborate on the various process involving in drug development
- CO-2. Explain the ethical issues in biomedical research
- CO-3. Distinguish various types of clinical phases involved in the drug development process
- CO-4. Outline important clinical trial documents, activities involved in clinical trial start-up,



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- monitoring and close out and associated quality assurance activities
- CO-5. Appraise various quality control methods to ensure quality in clinical trial
 - CO-6. Summarize the various Clinical Research models and their applications

Course Outcomes (COs)

Course Title & Code: Pharmacy Practice Practical- I (Practical) (PPL505)

After the successful completion of this course, the student will be able to:

- CO-1. Evaluate treatment chart, interview patient's medication history and perform patient medication counselling
- CO-2. Solve and report drug and poison information queries
- CO-3. Interpret laboratory data and perform ABC analysis of a given list of medications
- CO-4. Summarize the clinical cases of various disease conditions adopting Pharmaceutical Care Plan Model and Prepare patient information leaflet, study protocol and informed consent
- CO-5. Formulate the IV admixtures and prepare the content of a medicine with proper justification for inclusion in the hospital formulary

Course Outcomes (COs)

Course Title & Code: Seminar/Assignment (PPS506)

After the successful completion of this course, the student will be able to:

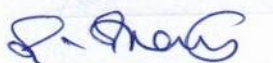
- CO-1. Develop critical thinking, analytical thinking and problem-solving skills
- CO-2. Demonstrate the ability to synthesize the report
- CO-3. Develop academic report with appropriate citation and referencing style
- CO-4. Discuss the contents of the report with the panel
- CO-5. Defend the contents of the report in the panel

Course Outcomes (COs)

Course Title & Code: Principles of Quality Use of Medicines (Theory) (PPC507)

After the successful completion of this course, the student will be able to:

- CO-1. Elaborate on the need for quality use of medicines
- CO-2. Explain various concepts in quality use of medicines
- CO-3. Demonstrate the need for establishment of quality use of medicines in various health care settings and special populations
- CO-4. Outline various regulatory aspects involved in the quality use of medicines in India
- CO-5. Assess the adverse drug reactions and identify the medication errors
- CO-6. Summarize the various QUM models and their applications



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Course Outcomes (COs)

Course Title & Code: Pharmacotherapeutics II (Theory) (PPC508)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the etiopathogenesis and clinical manifestations of various disease conditions
- CO-2. Identify the patient specific parameters relevant in initiating drug therapy and monitoring therapy
- CO-3. Summarize the therapeutic approach for management of various disease conditions
- CO-4. Utilize the rationale for drug therapy
- CO-5. Develop individualized therapeutic plans based on diagnosis
- CO-6. Discuss the clinical controversies in drug therapy

Course Outcomes (COs)

Course Title & Code: Clinical Pharmacokinetics and Therapeutic Drug Monitoring (Theory) (PPC509)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the drug dosage regimen for individual patients and manage drug interactions
- CO-2. Outline pharmacokinetic modeling for the given data using the principles of pharmacometrics
- CO-3. Interpret and correlate the plasma drug concentrations with patients' therapeutic outcomes
- CO-4. Explain TDM of drugs for selected diseases
- CO-5. Recommend dosage adjustment for special population
- CO-6. Summarize the importance of pharmacokinetic parameters in clinical settings

Course Outcomes (COs)

Course Title & Code: Pharmacoepidemiology and Pharmacoeconomics (Theory) (PPC510)

After the successful completion of this course, the student will be able to:

- CO-1. Discuss the concept of risk and odds ratio
- CO-2. Explain the importance of measurement of outcomes in Pharmacoepidemiology
- CO-3. Apply pharmacoepidemiological methods of evaluation
- CO-4. Outline the need for health-related quality of life measures
- CO-5. Justify the applications of Pharmacoeconomic studies in India
- CO-6. Summarize the various pharmacoeconomic models and their applications

Course Outcomes (COs)

Course Title & Code: Pharmacy Practice Practical- II (Practical) (PPL511)

After the successful completion of this course, the student will be able to:

- CO-1. Evaluate the causal relationship between drug and adverse drug reactions
- CO-2. Find and manage medication errors
- CO-3. Analyze the rational use of medicines in special population
- CO-4. Design the clinical cases of various disease adopting pharmaceutical care plan model and interpret therapeutic drug monitoring reports of a given patient
- CO-5. Assess the bioavailability, bioequivalence and pharmacoeconomic outcomes



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Course Outcomes (COs)

Course Title & Code: Seminar/Assignment (PPL511)

After the successful completion of this course, the student will be able to:

- CO-1. Develop critical thinking, analytical thinking and problem-solving skills
- CO-2. Demonstrate the ability to synthesize the report
- CO-3. Develop academic report with appropriate citation and referencing style
- CO-4. Communicate the contents of the report to the panel
- CO-5. Defend the contents of the report in the panel

Course Outcomes (COs)

Course Title & Code: Research Methodology and Biostatistics (Theory) (PPF613)

After the successful completion of this course, the student will be able to:

- CO-1. Elaborate on the value, scope, objective and requirements of research
- CO-2. Discuss the basic concept and importance of statistical analysis
- CO-3. Outline the basic principles of medical research
- CO-4. Summarize the guidelines for the maintenance of laboratory animals
- CO-5. Apply the principles of medical research for the development of knowledge in the field of medicine

Course Outcomes (COs)

Course Title & Code: Journal club (PPF614)

After the successful completion of this course, the student will be able to:

- CO-1. Select scientific articles from reputed journals
- CO-2. Utilize search engines to select scientific articles
- CO-3. Appraise scientific articles critically and assess the quality
- CO-4. Develop a report on the critically appraised article
- CO-5. Elaborate on the critically appraised article in appropriate forum via presentation

Course Outcomes (COs)

Course Title & Code: Group Project (PPF615)

After the successful completion of this course, the student will be able to:

- CO-1. Choose a project in the area of Pharmaceutical Sciences and work in a team to carry out the project.
- CO-2. Apply concepts of pharmaceutical sciences for executing the project
- CO-3. Apply appropriate research methodology while formulating a project
- CO-4. Develop a project and generate specifications, synthesize, analyse and evaluate the same
- CO-5. Defend the project, exhibit, make a presentation and document the work



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Course Outcomes (COs)

Course Title & Code: Discussion / Synopsis Presentation (PPF616)

After the successful completion of this course, the student will be able to:

- CO-1. Identify the research problem
- CO-2. Discuss research problem with team and peers for solution
- CO-3. Develop a protocol report on the critically appraised research problem
- CO-4. Discuss the critically appraised research problem in appropriate forum

Course Outcomes (COs)

Course Title & Code: Research Work (PPF617)

After the successful completion of this course, the student will be able to:

- CO-1. Appraise scholarly literature collected from various sources critically for the project and formulate a research problem
- CO-2. Develop and present a research proposal
- CO-3. Take part in research to achieve research objectives
- CO-4. Recommend new ideas/ methodologies or procedures for further improvement of the research problem
- CO-5. Create research document of the findings
- CO-6. Defend the research findings in front of scholarly audience

Course Outcomes (COs)

Course Title & Code: Journal club (PPF618)

After the successful completion of this course, the student will be able to:

- CO-1. Select scientific articles from reputed journals
- CO-2. Utilize search engines to select scientific articles
- CO-3. Appraise scientific articles and assess the quality
- CO-4. Develop a report on the critically appraised article
- CO-5. Compile and present the critically appraised article in appropriate forum

Course Outcomes (COs)

Course Title & Code: Discussion /Presentation (PPF619)

After the successful completion of this course, the student will be able to:

- CO-1. Identify the research problem
- CO-2. Discuss research problem with team and peers for solution
- CO-3. Develop a protocol report on the critically appraised research problem
- CO-4. Plan and present the critically appraised research problem in appropriate forum



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Course Outcomes (COs)

Course Title & Code: Research Work (PPF620)

After the successful completion of this course, the student will be able to:

- CO-1. Appraise scholarly literature collected from various sources critically for the project and formulate a research problem
- CO-2. Develop and present a research proposal
- CO-3. Take part in research to achieve research objectives
- CO-4. Develop new ideas/ methodologies or procedures for further improvement of the research problem
- CO-5. Create research document of the findings
- CO-6. Defend the research findings in front of scholarly audience

Course Outcomes (COs)

Course Title & Code: Participation/ Presentation in Research Forum (PPF621)

After the successful completion of this course, the student will be able to:

- CO-1. Identify a suitable conference/research forum/workshop/symposium for participation/presentation
- CO-2. Take part in a conference/research forum/workshop/symposium of the chosen research domain
- CO-3. Plan and present a research work in the conference/research forum of the chosen research domain

Course Outcomes (COs)

Course Title & Code: Publication: National/International Journals (PPF622)

After the successful completion of this course, the student will be able to:

- CO-1. Develop a research paper based on research and journal requirements
- CO-2. Compile and publish the research work manuscript in a reputed journal

Course Outcomes (COs)

Course Title & Code: Academic /Research Award (PPF623)

After the successful completion of this course, the student will be able to:

- CO-1. Compile the academic accomplishments/research findings in the form of report
- CO-2. Identify an appropriate award granting agency to submit the report
- CO-3. Organize the required documents suitable for developing the academic accomplishment/research report


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