



MAHATMA GANDHI VIDYAMANDIR'S
**SAMAJSHRI PRASHANTDADA HIRAY
COLLEGE OF PHARMACY**

Approved by : Pharmacy Council of India, New Delhi. Recognized by : DTE, Mumbai.
Affiliated to : Savitribai Phule Pune University, Pune (CPHN018220), MSBTE (2142) DTE Code : 5205 AISHE Code : C-41859 Exam Code : 1032
Accredited by NAAC "B ++" Grade with = CGPA -2.88 in First Cycle, NSS CODE-D-SF-091

2.6.1

**Teachers and students are aware of the stated
Programme and Course Outcomes of the
Programmes offered by the institution.**



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Sr. No	Contents	Year
1	Process for establishing the Cos and POs	2023-24
2	Program Outcomes	2023-24
3	Course Outcomes	2023-24



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2.6.1

1. Process for establishing the COs and POs



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1. Course outcomes are designed by respective faculty based on the curriculum given by Savitribai Phule Pune University, Pune
2. In the process of defining the COs and POs the reference documents used are:
 - a. Rules & Syllabus for the Bachelor of Pharmacy (B. Pharm) Course Provided by PCI.
 - b. The NBA accreditation manual for Pharmacy Programmes
3. The course outcomes are redefined if necessary to bridge the curricular gap and program outcomes

Programme Outcomes (POs) and Course Outcomes (COs) are communicated to students

A. Lectures

B. College website: <https://mgvmlgpharmacy.kbhgroup.in/>

COs- <https://mgvmlgpharmacy.kbhgroup.in/>

POs- <https://mgvmlgpharmacy.kbhgroup.in/>

C. The students' laboratory journals

D. Display at prominent places in the college building



Display of Program Outcome in the college building



Display of Program Outcome in the college building at Notice Board

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PROGRAMME OUTCOMES

- Pharmacy Knowledge:** Demonstrate understanding and application of the core and basic knowledge acquired from the profession of pharmacy including theoretical, scientific, pharmaceutical sciences, behavioral, social and administrative pharmacy sciences and management sciences.
- Planning Abilities:** Demonstrate effective planning abilities including time management, priority management, decision making and organizational skills. Develop and implement plans and projects in work and life situations.
- Problem analysis:** Assess a complex situation or work scenario, identify underlying causes and identify, analyze and solve problems and thereby develop effective plans for the problem and analyze various solutions to determine feasibility and effectiveness. Address the issues.
- Modern tool usage:** Apply technology and apply computer skills to collect and generate, organize, analyze information and communicate. Apply computer applications in pharmacy.
- Leadership skills:** Engage in leadership activities in various settings. Demonstrate team building and team working skills. Practice change agents. Involvement in social, professional and working organizations. Assume responsibility in work situations or leadership roles when appropriate. Assume leadership roles in student body.
- Professional identity:** Understand and value the role and status of their profession. Endeavor to work with high professional standards of health care and manage resources effectively.
- Pharmaceutical Ethics:** Have personal values and apply these principles in professional and social contexts. Demonstrate behavior that demonstrates professional conduct in values, communication and integrity. Use ethical process that apply ethical principles when making decisions and take responsibility for the outcome associated with decisions.
- Communication:** Communicate effectively with the pharmacy community and with society at large, such as being able to comprehend and write relevant reports, make effective presentations and documentation, and give and receive clear instructions.
- The Pharmacist and society:** Apply learning outcomes to the conceptual knowledge to assess societal, health, safety and legal issues and the emerging responsibilities related to the professional pharmacy practice.
- Environment and sustainability:** Understand the impact of the profession of pharmacy activities on societal and environmental systems, and demonstrate the knowledge of and need for sustainable development.
- Lifelong learning:** Recognize the need for, and have the motivation and ability to engage in independent and lifelong learning in the broader context of technology change. Self-assess and use feedback effectively. Use plans to identify learning needs and to search for resources to address the learning needs.

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Sl. No.	Name of the student	Roll No.	Semester - I												Avg.		
			1	2	3	4	5	6	7	8	9	10	11	12			
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Sl. No.	Name of the student	Roll No.	Semester - II												Avg.			
			1	2	3	4	5	6	7	8	9	10	11	12				
1	To prepare f standard assay of iron sulph by redox titration	Prepare f standard assay of iron sulph by redox titration	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2	To prepare f standard of M. Haddy	Prep f standard of M. Haddy	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
3	To perform the assay of NH4Cl	Perform the assay of NH4Cl	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
4	To prepare f standard of Iron Sulph	Prep f standard of Iron Sulph	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
5	To prepare f standard of Iron Sulph	Prep f standard of Iron Sulph	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
6	To perform the assay of Curc	Perform the assay of Curc	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
7	To perform the assay of ferrous sulph	Perform the assay of ferrous sulph	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5

Programme outcome in Students journals

Course Outcomes in students laboratory journals



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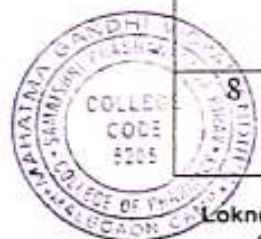
2. Program Outcomes



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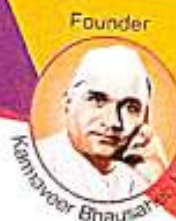
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#	Type	ID	Program Outcomes
1	PO	PO1	Possess knowledge Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences, pharmaceutical sciences, behavioral, social, and administrative pharmacy sciences, and manufacturing practices
2	PO	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.
3	PO	PO3	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.
4	PO	PO4	Modern tool usage Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy- related computing tools with an understanding of the limitations.
5	PO	PO5	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 wellbeing
6	PO	PO6	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).
7	PO	PO7	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
8	PO	PO8	Communication Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective



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			reports, make effective presentations and documentation, and give and receive clear instructions.
9	PO	PO9	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.
10	PO	PO10	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
11	PO	PO11	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.



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2. Course Outcomes



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Class: F.Y.B. Pharm

Sem: I

Subject: Pharmaceutics-I BP103T

Upon Completion of the course students shall ...

CO 103T 1	Know the history of profession of Pharmacy
CO 103T 2	Understand the basics of different dosage forms, Pharmaceutical incompatibilities and Pharmaceutical calculations
CO 103T 3	Explain the professional way of handling the Prescription
CO 103T 4	Use basics to for preparation of various conventional dosage forms

Class: F.Y.B. Pharm

Sem: II

Subject: Pathophysiology BP204T

Upon Completion of the course students shall ...

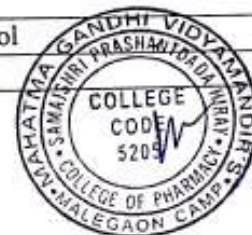
CO BP 204T 1	Describe the etiology and pathogenesis of the selected disease states
CO BP 204T 2	Identify the signs and symptoms of the diseases
CO BP 204T 3	Recognize the various diseases and understanding of its prevention and treatment
CO BP 204T 4	Understand the consequence of diseased organ

Class: F.Y.B. Pharm Subject: Biochemistry (BP209P)

Sem: II

Upon Completion of the course students shall ...

CO 209P 1	Identification tests for Biomolecules
CO 209P 2	classification and structural properties of carbohydrates, proteins, nucleic acids and lipids, glycoproteins and glycolipids
CO 209P 3	Determination of blood Creatinine, blood sugar, serum total cholesterol
CO 209P4	Qualitative analysis of carbohydrates, urine for abnormal constituents



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Class: Second Year B. Pharm (2019 Pattern)

SEM: III

Subject: Physical Pharmaceutics I, BP302T

Upon Completion of the course students shall...

CO 302T.1	Understand the concept of solubility of drugs, diffusion principles in biological systems and distribution law
CO 302T.2	Investigate and apply various theories, laws and equations related to different states of matter
CO 302T.3	Demonstrate use of physicochemical properties of drugs in the formulation development and evaluation of dosage forms.
CO 302T.4	Distinguish the principles of complexation/ protein binding & to use them for calculations of drug release and stability constant.

Class: Second Year B. Pharm (2019 Pattern)

SEM: III

Subject: Pharmaceutical Microbiology (BP303T)

Upon Completion of the course students shall...

CO 303T.1	Understand methods of identification, cultivation and preservation of various Microorganisms
CO 303T.2	Analyze Learn sterility testing of pharmaceutical products
CO 303T.3	Evaluate To Evaluate the importance and implementation of sterilization in pharmaceutical processing and industry
CO 303T.4	Understand the cell culture technology and its applications in pharmaceutical industries

Class: S.Y.B. Pharm

Sem: IV

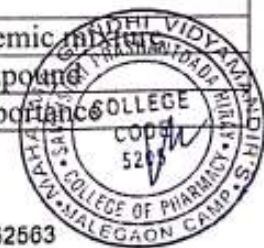
Subject: Pharmaceutical Organic Chemistry III (BP 401T)

Upon Completion of the course students shall ...

CO 401T1	Interpret knowledge on stereo chemical aspects of organic compounds and organic reactions
CO 401T 2	Enlighten methods of racemic modification and resolution of racemic mixtures
CO 401T 3	Understand method of preparation and properties of organic compounds
CO 401T 4	Explain chemistry of heterocyclic compounds with medicinal importance

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Class: Second Year B. Pharm (2019 Pattern)

SEM: IV

Subject: Physical Pharmaceutics II, BP403T

Upon Completion of the course students shall...

CO 403T.1	Categorize dispersed systems with their properties and their role in dosage form.
CO 403T.2	Describe rheological properties with applications and various viscometers to determine viscosity.
CO 403T.3	Summarize various methods to determine particle size, particle shape and specific surface area.
CO 403T.4	Derive Kinetic reactions and rate constant with determination of reaction orders, permeability etc.

Class: S.Y.B. Pharm (2019 Pattern) Subject: Pharmacology-I (BP 404T)

Sem: IV

Upon Completion of the course students shall ...

CO BP 404T 1	Name the different routes of drug administrating, Sources and combined effects of drug and pharmacological actions
CO BP 404T 2	Outline the stages of drug development
CO BP 404T 3	Explain the pharmacokinetics and mechanism of drug action at organ system/sub cellular/macromolecular levels
CO BP 404T 4	Explain the different categories of drugs acting on ANS and CNS, Their pharmacological actions

Class: S.Y.B. Pharm

Subject: Pharmacology-I (BP408P)

Sem: IV

Upon Completion of the course students shall ...

CO BP 408P 1	Summarize guidelines for animal experimentations
CO BP 408P 2	Outline various routes of drug administration, methods for blood collection from experimental animals.
CO BP 408P 3	Model for different anesthetics by various methods
CO BP 408P 4	Examine the action of various drugs using preclinical models, computer simulations



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Class: S.Y.B. Pharm Subject: Medicinal Chemistry I (BP406P) Sem: IV

CO BP 406T 1	Make use of Equipments/instrument with safety measures
CO BP 406T 2	Outline reagent properties, reaction and mechanism of organic compound.
CO BP 406T 3	Synthesized and Purify some medicinally important compounds.
CO BP 406T 4	Determine partition coefficient and ionization constants of organic compounds

Class: Third Year B. Pharm (2019 Pattern)

SEM: V

Subject: Pharmacology- II (BP503T)

Upon Completion of the course students shall...

CO 503T.1	Describe the principles, applications and types of bioassay
CO 503T.2	Explain the pharmacokinetics and mechanism of drug action at organ system/ sub cellular/macromolecular levels
CO 503T.3	Explain the pharmacology of drugs acting on systems
CO 503T.4	Discuss drug mechanisms and their relevance in the treatment of diseases

Class: Third Year B. Pharm Subject: Pharmacology- II (BP507P) SEM: V

Upon Completion of the course students shall...

CO 507P.1	Choose physiological salt solutions for isolated tissue preparations.
CO 507P.2	Demonstrate drug effects using computer models.
CO 507P.3	Conduct experiments on isolated tissue preparation and in vivo studies
CO 507P.4	Interpret the effect of spasmogens and spasmolytics on suitable tissue preparations

Class: Third Year B. Pharm (2019 Pattern)

SEM: V

Subject: Industrial Pharmacy -I (BP502T)

Upon Completion of the course students shall...

CO 502T.1	Illustrate various pharmaceutical dosage forms and their manufacturing techniques
CO 502T.2	Describe various factors to be considered in development of pharmaceutical dosage forms.
CO 502T.3	Formulate solid, liquid and semisolid dosage forms and evaluate them for their quality.
CO 502T.4	Understand and appreciate the influence of pharmaceutical additives and various pharmaceutical dosage forms on the performance of the drug product.

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Class: Third Year B. Pharm (2019 Pattern)

SEM: V

Subject: Pharmaceutical Jurisprudence, BP505T

Upon Completion of the course students shall...

CO 505T.1	Understand the rules and regulations framed and amendments made under drugs and cosmetics act 1940 and regulatory authorities their under.
CO 505T.2	Know constitution of various councils and functions under pharmacy act 1948 with pharmacist registration process.
CO 505T.3	Know Pharmaceutical legislations and their implications.
CO 505T.4	Understand code of ethics during the pharmaceutical practice and IPR.

Class: Third Year B. Pharm (2019 Pattern)

SEM: VI

Subject: Pharmacology- III (BP602T)

Upon Completion of the course students shall...

CO 602T.1	Classify drugs based on their therapeutic utility
CO 602T.2	Explain the principles of toxicology and treatment of poisoning
CO 602T.3	Discuss the significance of biological clock in diseases and chronotherapy
CO 602T.4	Explain the pharmacology of drugs

Class: Third Year B. Pharm

Subject: Pharmacology- III (BP608P)

SEM: VI

Upon Completion of the course students shall...

CO 608P.1	Calculate doses for laboratory animals
CO 608P.2	Estimate biochemical parameters in body fluids
CO 608P.3	Demonstrate effect of drugs using computer models
CO 608P.4	Apply statistical methods for interpretation of experimental results



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Class: T.Y.B. Pharm (2019 Pattern)

Sem: VI

Subject: Medicinal Chemistry III (BP 601T)

Upon Completion of the course students shall...

CO 601T.1	Summarize history of drug design, development, classification and chemistry of Different classes of drugs.
CO 601T.2	Discuss structural activity relationship of different classes of agents
CO 601T.3	Recognize therapeutic uses, adverse effects and recent developments of some agents
CO 601T.4	Write synthetic route of few drugs

Class: T.Y.B. Pharm

Subject: Medicinal Chemistry III (606.P)

Sem: VI

Upon Completion of the course students shall...

CO 4.8.4.P.1	Make use of various Equipments/instrument and safety measures while working in laboratory
CO4.8.4.P. 2	Outline reagent properties, reaction, mechanism involved in synthesis of organic compounds
CO4.8.4.P.3	Synthesized, purify and Characterized some medicinally important compounds.
CO4.8.4.P.4	Purify solvents using fractional and vacuum distillation

Class: Third Year B. Pharm (2019 Pattern)

SEM: VI

Subject: PHARMACEUTICAL QUALITY ASSURANCE (BP606T)

Upon Completion of the course students shall...

CO 606T.1	Understand and apply the cGMP aspects in a pharmaceutical industry.
CO 606T.2	Describe the importance of documentation
CO 606T.3	Understand the scope of quality certifications applicable to pharmaceutical industries
CO 606T.4	Illustrate the responsibilities of QA & QC departments



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MAHATMA GANDHI VIDYAMANDIR'S
**SAMAJSHRI PRASHANTDADA HIRAY
COLLEGE OF PHARMACY**

Approved by : Pharmacy Council of India, New Delhi. Recognized by : DTE, Mumbai.
Affiliated to : Savitribai Phule Pune University, Pune (CPHN018220) MSBTE (2142) DTE Code : 5205 AISHE Code : C-41859 Exam Code : 1032
Accredited by NAAC "B ++" Grade with = CGPA -2.88 in First Cycle, NSS CODE-D-SF-091

Class: Third Year B. Pharm (2019 Pattern)

SEM: VI

Subject: Pharmaceutical Biotechnology (BP605T)

Upon Completion of the course students shall...

CO 605T.1	Understand the importance of Immobilized enzymes in Pharmaceutical Industries
CO 605T.2	Explain applications genetic engineering in relation to production of pharmaceuticals
CO 605T.3	Elaborate importance of Monoclonal antibodies in Industries
CO 605T.4	Demonstrate the use of microorganisms in fermentation technology

Class: T.Y.B. Pharm

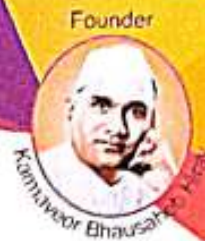
Sem: VI

Subject: Biopharmaceutics and Pharmacokinetics, BP604T

Upon Completion of the course students shall ...

CO 604T 1	Understand the basic concepts in Biopharmaceutics and Pharmacokinetics with their significance with special emphasis on ADME.
CO 604T 2	Calculate the Pharmacokinetic parameters to describe the kinetics of drug absorption, distribution, metabolism, excretion, elimination using plasma drug concentration-time data.
CO 604T 3	Understand the concepts of bioavailability and bioequivalence of drug products and their significance.
CO 604T 4	Understand the concept of dissolution and application of <i>in vitro in vivo</i> correlation in drug product development.





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Class: Final Year B. Pharm (2019 Pattern)

SEM: VII

Subject: Pharmacy Practice (BP503T)

Upon Completion of the course students shall...

CO 703 T.1	Know various drug distribution methods in a hospital
CO 703 T.2	Monitor drug therapy of patient through medication chart review and clinicalreview
CO 703 T.3	Identify drug related problems
CO 703 T.4	Know pharmaceutical care services

Class: Final Year B. Pharm (2019 Pattern)

SEM: VII

Subject: Industrial Pharmacy –II (BP702T)

Upon Completion of the course students shall...

CO 702T.1	Elaborate the process of pilot plant and scale up of pharmaceutical dosage forms.
CO 702T.2	Understand the process of technology transfer from lab scale to commercial batch
CO 702T.3	Know and relate different Laws and Acts that regulate pharmaceutical industry.
CO 702T.4	Discuss the approval process and regulatory requirements for drug products.

Class: Final Year B. Pharm (2019 Pattern)

SEM: VII

Subject: Instrumental Method of Analysis, BP701T

Upon Completion of the course students shall...

CO 701T.1	Illustrate the interaction of matter with electromagnetic radiations and justify its applications in drug analysis.
CO 701T.2	Classify the chromatographic separation methods and choose appropriate technique for analysis of drugs.
CO 701T.3	Design methods for performing quantitative & qualitative analysis of drugs using analytical instruments.
CO 701T.4	Emphasizes on theoretical and practical knowledge on modern analytical instruments that are used for drug testing..



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Class: Final Year B. Pharm (2019 Pattern)

SEM: VII

Subject: Instrumental Method of Analysis, BP705P

Upon Completion of the course students shall...

CO 705P.1	Explain the different types of instrumental analytical techniques
CO 705P.2	Understand the principles and instrumentation of UV-VIS, Fluorimetry, Atomic absorption, Flame photometry and Nepheloturbidimetry
CO 705P.3	Utilize the of UV-VIS, Fluorimetry, Atomic absorption, Flame photometry and Nepheloturbidimetry
CO 705P.4	Apply appropriate safety measures while handling chemicals, apparatus and different analytical instruments



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