



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTU-GV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

2.6.2. CO-PO Attainment for M Pharmacy Program

Index

S No	Description	Page No
1	CO-PO Attainment Process	02
2	Program Educational Objectives (PEOs), Program outcomes (POs), Program Specific Outcomes (PSOs) for M Pharmacy Program	03-08
3	Course Outcome Statements and CO-PO mapping	09-51
4	CO Assessment and Attainment Process	52-53
5	PO Assessment and Attainment Process	54
6	Direct Attainment	55
7	Indirect attainment	55
8	CO - PO Attainment for 2019- 2023 B Pharmacy Batch	56-86
9	CO-PO attainment for University Examination Theory Course	87-95
10	CO-PO attainment for University Examination Practical Course	96-102



Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162




CO-PO Attainment Process

Steps involved in CO-PO Attainment Process

- Step 1:** Establish POs, PSOs and PEOs of the Program.
- Step 2:** Develop Course Outcomes for each course.
- Step 3:** Defining relation between COs and POs for each course to obtain overall CO mapping with each POs.
- Step 4:** Computation and construction of overall CO attainment matrix for each course using course assessment tools.
- Step 5:** Calculation and construction of direct PO attainment matrix using overall CO-PO mapping matrix and overall CO attainment matrix.
- Step 6:** Calculation of overall direct PO attainment.
- Step 7:** Calculation of indirect PO attainment.
- Step 8:** Computation of overall PO attainment.
- Step 9:** Comparison of target level and obtained PO attainment.




PRINCIPAL
Avanathi Institute of Pharmaceutical Science
Cherukupally (V), Bhogapuram Mandala
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, recognized by the GOVT. OF A.P. & Affiliated to INTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Programme Outcomes (POs), Programme Educational Outcomes (PEOs), and Programme Specific Outcomes (PSOs) for M Pharmacy Pharmaceutical Technology / Pharmaceutics (PG Course)

Program Educational Objectives (PEOs)

PEO 1: Comprehensive Expertise: Graduates should impart sound pharmaceutical knowledge in utilizing advanced laboratory techniques and instrumentation to make them ever-ready for producing quality, safety and effective pharmaceutical formulations.

PEO 2: Emerging Innovation Leaders: Graduates should become pioneers in the field of pharmaceutical innovation and research, constantly coming up with new and better techniques for drug development and assessment. Capable of making a substantial contribution towards the progress of pharmaceutical science and the creation of safer and more efficient pharmaceuticals.

PEO 3: Pharmaceutical regulations: Graduates should comprehend the goals, responsibilities, and duties of the several pharmaceutical regulatory agencies that oversee the effectiveness, safety, and quality of drugs from

PEO 4: Entrepreneurial Spirit: Graduates should produce skilled pharmaceutical professionals, leaders, policy makers and entrepreneurs for building healthy nation.

Program Outcomes (POs)

PO 1: Scientific knowledge: Apply the scientific and technological principles to design, develop effective pharmaceutical dosage forms and drug delivery systems for better therapeutic results.

PO 2: Technological applications: utilize technical knowledge and identify any factors affecting the quality of pharmaceutical production.

PO 3: Modern tool usage: Learn, select, and apply appropriate methods, procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO 4: Entrepreneurship: Understand the basics of establishing and management of pharmaceutical enterprise.

PO 5: Practical Skills: Gain practical expertise in formulating and evaluating various novel drug release systems for minor ailments to major diseases.

PO 6: Applied science: Employ contemporary scientific knowledge viz., pharmacology, biotechnology for designing disease-centric pharmaceuticals.

PO 7: Computational and statistical methodologies: Applying and utilizing the statistical tools with the aid of computer software to optimize the formulations.

Avanthi Institute of Pharmaceutical Sciences



[Handwritten signature]

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

PO 8: Pharmaceutical ethics: Respect personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural, 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 9: Environment and Sustainability: Understand, protect and cooperate environmental concerns for sustaining biodiversity.

PO 10: Life-Long Learning: Develop the habit of updating knowledge from time to time to meet industrial demands and social needs for having a fruitful career.

Program Specific Outcomes (PSOs)

PSO 1: Formulation Expertise: Able to gain theoretical and practical knowledge on design of pharmaceutical formulations and manufacturing techniques, enabling the creation of novel drug delivery systems.

PSO 2: Computational application: Able to utilize artificial intelligence, software applications which are useful in screening formulations, interpretation of experimental data and their validation.




PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Programme Outcomes (POs), Programme Educational Outcomes (PEOs), and Programme Specific Outcomes (PSOs) for M Pharmacy Pharmacology (PG Course)

Program Educational Objectives (PEOs)

PEO 1: Ethical Awareness: Graduates will be able to understand, appreciate and apply concepts about various aspects of regulations and ethical requirement for the usage of experimental animals, CPCSEA guidelines for laboratory animal facilities, and toxicity studies.

PEO 2: Domain Knowledge: Graduates should inculcate advanced theoretical and practical knowledge of the pharmacological education which will help them to perform exceptionally in academics and their professions.

PEO3: Systems based approach: Graduates should develop novel approaches for minimizing and monitoring of adverse drug reactions to ensure safe use of drugs by providing practical inputs in pharmacokinetic studies of various drugs and formulations in animals to establish in-vitro and in-vivo correlations.

PEO 4: Social Awareness: Graduates should act responsibly towards environment, follow ethical principles, be able to comprehend, interpret and apply laws pertinent to all spheres of pharmaceutical and allied domains. imbibe the spirit of being an entrepreneur.

Program Outcomes (POs)

PO 1: Drug Expertise: Acquire knowledge on various classes of drugs and their mode of actions to unveil the remedies for many ailments.

PO 2: Analytical Reasoning: Identify assumptions and reveal the evidence-based reasons for the disease or disorder take place to select the type of relevant treatment.

PO 3: Experimental Ethics: Consider and follow ethics and guidelines specified by the authorities of various agencies and Government of India for animal congenial laboratory practice.

PO 4: Interdisciplinary engagement: Obtain skill oriented practical proficiency by exposing and utilizing the needs of pharmacy in all disciplines to emerge as potent researcher.

PO 5: Statistical Skills: Apply and analyze quantitative metrics to gain safety data on dosage, also to compare the effectiveness among experimental groups.

PO 6: Professional Identity: Be committed and responsible person to play a proactive role with fidelity to community and empower society.

PO 7: Environment and sustainability: understand, protect and cooperate environmental concerns for sustaining biodiversity.

Avanthi Institute of Pharmaceutical Sciences



PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

PO 8: Modern tool usage: Learn, select, apply appropriate methods, procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.

PO 9: Intellectual Flexibility: Engage in critical thinking and gain insight to identify, design and formulate pharmaceutical products that are in need of current aspects by using material from natural sources.

PO 10: Lifelong learning: Understand and apply the concepts in day-to-day life activities for the benefit of self and for the welfare of society and its concerns.

Program Specific Outcomes (PSOs)

PSO 1: Research Expertise: Graduates should have comprehensive knowledge of designing, conducting, analysis, reporting and documentation of the preclinical and clinical research studies for effective pharmacotherapy of drugs.

PSO 2: Pharmacovigilance Expertise: Graduates will be able to apply and appraise regulatory, computational and informatics tools and ethical concepts in preclinical and clinical research for pharmaceutical and healthcare domain in relation to society.




PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Programme Outcomes (POs), Programme Educational Outcomes (PEOs), and Programme Specific Outcomes (PSOs) for M Pharmacy Pharmaceutical Analysis (PG Course)

Program Educational Objectives (PEOs)

PEO 1: Advanced Analytical Proficiency: Graduates should gain an in-depth knowledge of the advanced analytical tools and methods utilized in pharmaceutical analysis, enabling students to accurately determine the chemical composition of pharmaceutical dosage forms.

PEO 2: Innovative Analytical Science Research: Graduates will be proficient in pharmaceutical analysis research and innovation, with an emphasis on advanced instruments. develops new and enhanced techniques for the accurate assessment of medications, advancing the analytical sciences in the pharmaceutical industry.

PEO 3: Effective Communicators and Collaborators in Analytical Research: Graduates will excel in communication, conveying their research findings and analytical results effectively to their peers and the broader scientific community. They will also demonstrate strong collaborative skills, working effectively with healthcare professionals and researchers to enhance pharmaceutical analysis and research initiatives, fostering interdisciplinary teamwork

PEO 4: Initiative and Entrepreneurialism: Individual's ability to turn ideas into practice. Like finding new opportunities to share information and concepts. Generating options and solutions to cope with changes. It involves imagination, novelty and risk-taking, as well as the ability to plan and manage projects in order to achieve objectives.

Program Outcomes (POs)

PO 1: Analytical Knowledge: Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including chromatographic and spectroscopic techniques and differentiate with volumetric analysis.

PO 2: Analytical Reasoning: Categorize assumptions and disclose the data according to guidelines.

PO 3: Problem Solving: Utilize the principles of analytical techniques with clear and critical thinking, while solving problems and making decisions. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.

PO 4: Modern Techniques: Learn, choose and apply appropriate hyphenated methods and procedures and related computing tools with thoughtfulness of their applications.

PO 5: Experimental Ethics: Believe and follow ethics and guidelines specified by the regulatory

Avanathi Institute of Pharmaceutical Sciences

PRINCIPAL



Avanathi Institute of Pharmaceutical Science.
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, recognized by the GOVT. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

authorities of various countries and Government of India for good laboratory practice.

PO 6: Interdisciplinary Commitment: Acquire skill oriented practical ability and utilize the needs of pharmacy in all other programmes to emerge as potent researcher.

PO 7: Professional Identity: Be committed and responsible person to play a proactive role with fidelity to community and empower society.

PO 8: Statistical Skills: Apply and evaluate quantitative metrics to gain method development, validation, safety data on dosage and also to compare the effectiveness among different marketed formulations.

PO 9: Rational Flexibility: Engage in critical and logical thinking and to gain an overall knowledge in developing newer methods, impurity profiling and validation protocols those are useful in laboratory purpose.

PO 10: 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.

Program Specific Outcomes (PSOs)

PSO 1: Advanced Analytical Proficiency: Achieve a deep and advanced understanding of analytical instrumentation and techniques in pharmaceutical analysis, enabling them to conduct precise chemical analyses of pharmaceutical products and contribute to the advancement of analytical sciences.

PSO 2: Entrepreneurship: Graduates should be able to develop entrepreneurial and administrative abilities to open community pharmacies, educational institutions, and training facilities for the long-term benefit of society.




PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

ESTD : 2005

Course Outcomes (CO) and CO-PO/PSO mapping

Course Outcomes are the statements which describe the student should be able to do at the end of a course. The most important aspect of a CO is that it should be observable and measurable.

CO-PO/PSO Mapping:

It Creates link between the Course Outcomes (Co) and program outcomes (PO), Program specific outcomes (PSO) for each unit and assessment is called CO-PO/PSO Mapping. After CO statements are developed by the course coordinator, CO will map with any possible POs or PSO based on the relationship exist between them. But the POs are not necessarily mapped with any one CO and it may be left blank.

Levels of CO-PO/PSO mapping

It indicates to what extent a certain component (either assessment method to CO or CO to PO or PO to PEO & PSO.

- 3 indicates Substantial (high) mapping (high contribution towards attainment)
- 2 indicates Moderate (medium) mapping (medium contribution towards attainment)
- 1 indicates Slight (low) mapping (some contribution towards attainment)
- indicates No mapping (No contribution towards attainment)

For M Pharmacy program, 4 semesters are designed according to PCI and University curriculum. For each semester, Pharmacy HOD consolidates the COs of the respective semester and maintains the documentation of the CO-PO/PSO mapping.

CO-PO/PSO mapping for M Pharmacy subjects of PCI (R16) regulation

Year & Semester	Number of Theory subjects	Number of Practical Subjects	Other Subjects
I - I	4	2	-
I - II	4	2	-
II - I	1	-	Project Work
II - II	Project Work		
Total	09	04	01

CO statements and CO-PO/PSO mapping for each M Pharmacy is listed below:



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)			
Branch: Pharmaceutics / Pharmaceutical Technology			
Year: I	Sem: I	Course Name: Modern Pharmaceutical Analytical Techniques	Code: MPH101T
Course Outcomes			
CO101.1	Recall principle, operation and applications of selected instrumental spectroscopic, chromatographic analysis.		
CO101.2	Gain knowledge on interpretation of NMR spectra for determination of molecular structure of compounds.		
CO101.3	Build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups by Mass spectroscopy and their applications in pharmacy.		
CO101.4	Understand the concept of separation and identification of compounds by chromatographic techniques.		
CO101.5	Categorize different anions and cations by using suitable electrophoresis techniques.		
CO101.6	Elaborate principle, theory and instruments employed for the analysis of drugs by thermal techniques.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO101.1	-	1	2	-	3	-	-	-	-	-	2	1
CO101.2	-	1	2	-	3	-	-	-	-	-	2	1
CO101.3	-	1	2	-	3	-	-	-	-	-	2	1
CO101.4	-	1	2	-	3	-	-	-	-	-	2	1
CO101.5	-	1	2	-	3	-	-	-	-	-	2	1
CO101.6	-	1	2	-	3	-	-	-	-	-	2	1
	-	1	2	-	3	-	-	-	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I	Sem: I
Course Name: Drug Delivery Systems	
Code : MPH102T	
Course Outcomes	
CO102.1	Gain basic knowledge on sustained release, controlled release, polymer science and personalized medicine.
CO102.2	Summarize the various approaches for development of novel drug delivery systems.
CO102.3	Remember the development of formulations of gastro retentive drug delivery systems.
CO102.4	Understand the formulation and evaluation of Ocular drug delivery systems.
CO102.5	Summarize the formulation and evaluation of Transdermal drug delivery systems.
CO102.6	Elaborate formulation of protein delivery and evaluate the formulated vaccine drug delivery systems.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO102.1	2	1	1	-	1	-	2	-	-	-	2	1
CO102.2	2	1	1	-	1	-	2	-	-	-	2	1
CO102.3	2	1	1	-	1	-	2	-	-	-	2	1
CO102.4	2	1	1	-	1	-	2	-	-	-	2	1
CO102.5	2	1	1	-	1	-	2	-	-	-	2	1
CO102.6	2	1	1	-	1	-	2	-	-	-	2	1
	2	1	1	-	1	-	2	-	-	-	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I	Sem: I
Course Name: Modern Pharmaceutics Code: MPH103T	
Course Outcomes	
CO103.1	Illustrate the elements of preformulation studies, optimization techniques and its applications in formulation development. .
CO103.2	Develop validation and calibration master plan as per regulatory guidelines.
CO103.3	Understand the Industrial Management and GMP Considerations for the manufacturing of pharmaceuticals.
CO103.4	Know the methods of production management in industries.
CO103.5	Analyze the effects of compression and compaction in production of tablets.
CO103.6	Compile the consolidation parameters to determine the stability of a dosage form.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO103.1	1	3	3	-	2	-	2	-	-	-	3	1
CO103.2	1	3	3	-	2	-	2	-	-	-	3	1
CO103.3	1	3	3	-	2	-	2	-	-	-	3	1
CO103.4	1	3	3	-	2	-	2	-	-	-	3	1
CO103.5	1	3	3	-	2	-	2	-	-	-	3	1
CO103.6	1	3	3	-	2	-	2	-	-	-	3	1
	1	3	3	-	2	-	2	-	-	-	3	1



Avanthi Institute of Pharmaceutical Sciences

Handwritten signature
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

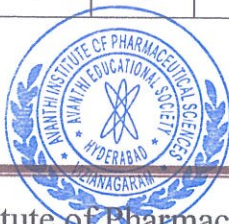
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I	Sem: I
Course Name: Regulatory Affairs	
Code: MPH104T	
Course Outcomes	
CO104.1	Recall Documentation procedure in pharmaceutical industry for drug approval process.
CO104.2	Understand the concepts of Regulatory guidance's and guidelines for filing and approval process of drugs.
CO104.3	Summarize the process of Submission of global documents in CTD/ eCTD formats.
CO104.4	Understand Post approval regulatory requirements for actives and drug products.
CO104.5	Recall Pharmacovigilance studies and process of monitoring in clinical trials.
CO104.6	Understand the guidelines and requirements for approvals for conducting clinical trials.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO104.1	-	2	-	1	-	-	-	1	1	1	2	1
CO104.2	-	2	-	1	-	-	-	1	1	1	2	1
CO104.3	-	2	-	1	-	-	-	1	1	1	2	1
CO104.4	-	2	-	1	-	-	-	1	1	1	2	1
CO104.5	-	2	-	1	-	-	-	1	1	1	2	1
CO104.6	-	2	-	1	-	-	-	1	1	1	2	1
	-	2	-	1	-	-	-	1	1	1	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I	Sem: I
Course Name: Pharmaceutics Practical - I	
Code: MPH105PA	
Course Outcomes	
CO105.1	Identify the concentration of test compounds using HPLC, UV, GC, fluorimetry and flame photometry.
CO105.2	Estimate the amount of drug by different analytical techniques.
CO105.3	Perform In-vitro dissolution profile of CR marketed formulations.
CO105.4	Perform In-vitro dissolution profile of CR marketed formulations.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO105.1	-	2	2	-	3	-	1	-	-	-	2	1
CO105.2	-	2	2	-	3	-	1	-	-	-	2	1
CO105.3	-	2	2	-	3	-	1	-	-	-	2	1
CO105.4	-	2	2	-	3	-	1	-	-	-	2	1
	-	2	2	-	3	-	1	-	-	-	2	1



fpmw
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)			
Branch : Pharmaceutics / Pharmaceutical Technology			
Year: I	Sem: I	Course Name: Pharmaceutics Practical –II	Code : MPH105PB
Course Outcomes			
CO106.1	Formulate and evaluate different types of tablets by different manufacturing techniques.		
CO106.2	Carry out preformulation studies of tablets, Powders.		
CO106.3	Study Micromeritic properties of powders and granulation.		
CO106.4	Study the effect of formulative additives on dissolution of tablets.		

CO-PO Mapping

CO	Program Outcomes												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
CO106.1	-	2	2	-	3	-	1	-	-	-	2	1	-
CO106.2	-	2	2	-	3	-	1	-	-	-	2	1	-
CO106.3	-	2	2	-	3	-	1	-	-	-	2	1	-
CO106.4	-	2	2	-	3	-	1	-	-	-	2	1	-
	-	2	2	-	3	-	1	-	-	-	2	1	-



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I Sem: I Course Name: Pharmaceutics Practical -II Code: MPH105PB	
Course Outcomes	
CO201.1	Recall the techniques involved in design of Targeted Drug Delivery Systems.
CO201.2	Outline the principles of preparation and evaluation of Nanoparticles and Liposomes.
CO201.3	Understand the preparation, mechanism of drug release from microspheres and microcapsules. .
CO201.4	Understand the preparation and application of Niosomes, Aquasomes, Phytosomes, Electrosomes.
CO201.5	Assess the mechanism of drugs through Pulmonary Drug Delivery Systems.
CO201.6	Elaborate the role of Nucleic acid based therapeutic delivery systems in personalized medicine.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	2	1	1	-	-	-	1	-	-	-	2	1
CO201.2	2	1	1	-	-	-	1	-	-	-	2	1
CO201.3	2	1	1	-	-	-	1	-	-	-	2	1
CO201.4	2	1	1	-	-	-	1	-	-	-	2	1
CO201.5	2	1	1	-	-	-	1	-	-	-	2	1
CO201.6	2	1	1	-	-	-	1	-	-	-	2	1
	2	1	1	-	-	-	1	-	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI			
Branch: Pharmaceutics / Pharmaceutical Technology			
Year:	Sem: II	Course Name: Advanced Biopharmaceutics & Pharmacokinetics	Code: MPH202T
Course Outcomes			
CO202.1	Appreciate the importance of Drug Absorption from the Gastrointestinal Tract.		
CO202.2	Illustrate factors affecting the drug absorption from GIT.		
CO202.3	Outline Biopharmaceutic considerations in drug product design.		
CO202.4	Demonstrate the pharmacokinetic models for the interpretation of ADME Parameters.		
CO202.5	Analyze Drug Product Performance through Bioavailability and Bioequivalence studies.		
CO202.6	Compile the importance and applications of Pharmacokinetics in various products.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO202.1	2	1	1	-	-	-	2	2	1	-	2	1
CO202.2	2	1	1	-	-	-	2	2	1	-	2	1
CO202.3	2	1	1	-	-	-	2	2	1	-	2	1
CO202.4	2	1	1	-	-	-	2	2	1	-	2	1
CO202.5	2	1	1	-	-	-	2	2	1	-	2	1
CO202.6	2	1	1	-	-	-	2	2	1	-	2	1
	2	1	1	-	-	-	2	2	1	-	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Science
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I	Sem: II
Course Name: Computer Aided Drug Development	
Code: MPH203T	
Course Outcomes	
CO203.1	Understand the importance and applications of Computers in Pharmaceutical Research and Development.
CO203.2	Illustrate various stages of Quality-by-Design technique In Pharmaceutical Development.
CO203.3	Know the various approaches for Computational Modeling of Drug Disposition.
CO203.4	Summarize various software and modelling techniques for Computer-aided formulation development.
CO203.5	Assess the Computer-aided biopharmaceutical characterization for better therapeutic activity.
CO203.6	Appreciate the importance of the role of Artificial Intelligence (AI), Robotics and Computational fluid dynamics in drug product development.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	1	2	1	-	1	1	3	-	-	-	2	1
CO201.2	1	2	1	-	1	1	3	-	-	-	2	1
CO201.3	1	2	1	-	1	1	3	-	-	-	2	1
CO201.4	1	2	1	-	1	1	3	-	-	-	2	1
CO201.5	1	2	1	-	1	1	3	-	-	-	2	1
CO201.6	1	2	1	-	1	1	3	-	-	-	2	1
	1	2	1	-	1	1	3	-	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, [@avanthipharma.ac.in](https://www.instagram.com/avanthipharma)

Department of Pharmacy, Regulation: PCI (R16)			
Branch: Pharmaceutics / Pharmaceutical Technology			
Year: I	Sem: II	Course Name: Formulation Development of Pharmaceutical and Cosmetic Products	Code: MPH204T
Course Outcomes			
CO204.1	Understand various Preformulation Studies for new drug substances.		
CO204.2	Outline the various types of formulation Additives in product development.		
CO204.3	Understand the solubility techniques to improve solubility of poorly water-soluble drugs.		
CO204.4	Understand the Factors influencing dissolution and intrinsic dissolution studies of drugs.		
CO204.5	Appraise solid state stability, shelf-life assignment, Stability protocols, reports and ICH guidelines.		
CO204.6	Understand the principles and evaluation of Cosmeceuticals.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO204.1	1	2	1	-	1	1	1	-	-	-	2	1
CO204.2	1	2	1	-	1	1	1	-	-	-	2	1
CO204.3	1	2	1	-	1	1	1	-	-	-	2	1
CO204.4	1	2	1	-	1	1	1	-	-	-	2	1
CO204.5	1	2	1	-	1	1	1	-	-	-	2	1
CO204.6	1	2	1	-	1	1	1	-	-	-	2	1
	1	2	1	-	1	1	1	-	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: I Sem: II Course Name: Pharmaceutics Practical - III Code: MPH205PA	
Course Outcomes	
CO205.1	Formulate and evaluate microspheres, Nanospheres and Liposomes.
CO205.2	Evaluate the techniques used for the Improvement of dissolution characteristics of slightly soluble drugs.
CO205.3	Study the effects of Bioavailability studies of Paracetamol in animals.
CO205.4	Recording the Pharmacokinetic and IVIVC data analysis by Winnoline software.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO205.1	-	2	2	-	3	-	1	-	-	-	2	1
CO205.2	-	2	2	-	3	-	1	-	-	-	2	1
CO205.3	-	2	2	-	3	-	1	-	-	-	2	1
CO205.4	-	2	2	-	3	-	1	-	-	-	2	1
	-	2	2	-	3	-	1	-	-	-	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, [@avanthipharma.ac.in](https://www.instagram.com/avanthipharma)

Department of Pharmacy, Regulation: PCI (R16)			
Branch: Pharmaceutics / Pharmaceutical Technology			
Year: I	Sem: II	Course Name: Pharmaceutics Practical - IV	Code: MPH205PB
Course Outcomes			
CO206.1	Study the Formulation data analysis Using Design.		
CO206.2	Study the Computer Simulations in Pharmacokinetics and Pharmacodynamics.		
CO206.3	Design the Clinical Data Collection manual.		
CO206.4	Interpret Optimization techniques in Formulation Development of Tablets.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO206.1	-	2	2	-	3	-	1	-	-	-	2	1
CO206.2	-	2	2	-	3	-	1	-	-	-	2	1
CO206.3	-	2	2	-	3	-	1	-	-	-	2	1
CO206.4	-	2	2	-	3	-	1	-	-	-	2	1
	-	2	2	-	3	-	1	-	-	-	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch : Pharmaceutics / Pharmaceutical Technology	
Year: II Sem: I Course Name: Research Methodology & Biostatistics Code : MRM301T	
Course Outcomes	
CO301.1	Recall the concepts of research methodology which includes study design, type of studies, stratifies and different design techniques.
CO301.2	Infer the data using biostatistics technique like “t” test, ANOVA and chi square tests as well as recognize the importance of samples size and its significances.
CO301.3	Learn the history of medical research for understanding the values of clinical ethics.
CO301.4	Appraise the importance of communication and sociological relationships in medical research.
CO301.5	Understand CPCSEA guidelines for laboratory animal facilities which include handling, maintenance, record keeping and transportation of lab animals.
CO301.6	Discuss the history and basic principles of Declaration of Helsinki for medical research.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO301.1	-	-	-	-	-	1	3	3	2	-	2	1
CO301.2	-	-	-	-	-	1	3	3	2	-	2	1
CO301.3	-	-	-	-	-	1	3	3	2	-	2	1
CO301.4	-	-	2	-	-	1	3	3	2	-	2	1
CO301.5	-	-	2	-	-	1	3	3	2	-	2	1
CO301.6	-	-	2	-	-	1	3	3	2	-	2	1
	-	-	2	-	-	1	3	3	2	-	2	1



[Signature]
PRINCIPAL



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of Pharmacy, Regulation: PCI (R16)	
Branch: Pharmaceutics / Pharmaceutical Technology	
Year: II Sem: II Course Name: Research Work	
Course Outcomes	
CO401.1	Define the fundamentals, carry out the literature review on the proposed research work and identify the problem.
CO401.2	Develop the research hypothesis.
CO401.3	Summarize the requirements in the proposed research.
CO401.4	Take part in research experiments and documented.
CO401.5	Evaluate the work done by applying statistic tools.
CO401.6	Appraise societal application and appreciation.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO401.1	1	1	2	1	1	3	2	1	2	-	2	1
CO401.2	1	1	2	1	1	3	2	1	2	-	2	1
CO401.3	1	1	2	1	1	3	2	1	2	-	2	1
CO401.4	1	1	2	1	1	3	2	1	2	-	2	1
CO401.5	1	1	2	1	1	3	2	1	2	-	2	1
CO401.6	1	1	2	1	1	3	2	1	2	-	2	1
	1	1	2	1	1	3	2	1	2	-	2	1



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : I	Course Name : Modern Pharmaceutical Analytical Techniques	Code : MPL101T
Course Outcomes			
CO101.1	Recall principle, operation and applications of selected instrumental spectroscopic, chromatographic analysis.		
CO101.2	Gain knowledge on interpretation of NMR spectra for determination of molecular structure of compounds.		
CO101.3	Build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups by Mass spectroscopy and their applications in pharmacy.		
CO101.4	Understand the concept of separation and identification of compounds by chromatographic techniques.		
CO101.5	Categorize different anions and cations by using suitable electrophoresis techniques.		
CO101.6	Elaborate principle, theory and instruments employed for the analysis of drugs by thermal techniques.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO101.1	-	2	2	2	-	1	-	2	-	-	2	1
CO101.2	-	2	2	2	-	1	-	2	-	-	2	1
CO101.3	-	2	2	2	-	1	-	2	-	-	2	1
CO101.4	-	2	2	2	-	1	-	2	-	-	2	1
CO101.5	-	2	2	2	-	1	-	2	-	-	2	1
CO101.6	-	2	2	2	-	1	-	2	-	-	2	1
	-	2	2	2	-	1	-	2	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

- fym -
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : I	Course Name : Advanced Pharmacology - I	Code : MPL102T
Course Outcomes			
CO102.1	Gain basic knowledge on pharmacokinetics and Pharmacodynamics modeling, parameters and its determination.		
CO102.2	Summarize the mechanism and effects of neurotransmission and understand the pharmacology of Systemic and Autonomic Pharmacology.		
CO102.3	Remember the pharmacology of drugs acting on Central nervous system.		
CO102.4	Understand the pharmacology of neurodegenerative diseases.		
CO102.5	Categorize the drugs acting on Cardiovascular system and understand its pharmacology.		
CO102.6	Elaborate pharmacology of drugs used to treat allergic reactions.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO102.1	2	1	1	2	-	-	-	-	1	-	2	1
CO102.2	2	1	1	2	-	-	-	-	1	-	2	1
CO102.3	2	1	1	2	-	-	-	-	1	-	2	1
CO102.4	2	1	1	2	-	-	-	-	1	-	2	1
CO102.5	2	1	1	2	-	-	-	-	1	-	2	1
CO102.6	2	1	1	2	-	-	-	-	1	-	2	1
	2	1	1	2	-	-	-	-	1	-	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)	
Branch : Pharmacology	
Year : I	Sem : I
Course Name : Pharmacological and Toxicological Screening Methods – I	
Code : MPL103T	
Course Outcomes	
CO103.1	Gain basic knowledge on rules and CPSCEA guidelines of handling laboratory animals. Understand the production of transgenic animals and GLP.
CO103.2	Outline General principles of <i>in-vivo</i> , <i>in-vitro</i> preclinical screening techniques for drugs acting on CNS and ANS.
CO103.3	Identify the newer screening methods for drug acting on respiratory, reproductive systems.
CO103.4	Investigate new screening methods for drugs acting on Gastro-intestinal system.
CO103.5	Understand the principles of <i>in-vivo</i> , <i>in-vitro</i> preclinical screening techniques for drugs acting on Cardiovascular system.
CO103.6	Understand General principles of preclinical screening techniques for Immunomodulators, Immunosuppressants. Outline general principles of immunoassay and extrapolation of in vitro/preclinical data to human.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO103.1	1	-	3	-	-	-	-	2	1	-	2	1
CO103.2	1	-	3	-	-	-	-	2	1	-	2	-
CO103.3	1	-	3	-	-	-	-	2	1	-	2	-
CO103.4	1	-	3	-	-	-	-	2	1	-	2	-
CO103.5	1	-	3	-	-	-	-	2	1	-	2	-
CO103.6	1	-	3	-	-	-	-	2	1	-	2	-
	1	-	3	-	-	-	-	2	1	-	2	1




PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Avanthi Institute of Pharmaceutical Sciences



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : I	Course Name : Cellular and Molecular Pharmacology	Code : MPL104T
Course Outcomes			
CO104.1	Understand the basic structure and functions of cell and genome in the living organisms. Summarize various phases of cell cycle, apoptosis, necrosis and autophagy.		
CO104.2	Remember the pathways of cell signaling and know the importance of primary and secondary messengers.		
CO104.3	Understand the principles and applications of genomic and proteomic tools.		
CO104.4	Know the principles of rDNA technology and gene therapy.		
CO104.5	Elaborate the significance of Pharmacogenomics and immunotherapeutics.		
CO104.6	Design various cell culture techniques. Understand the applications of biosimilars.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO104.1	-	2	-	2	2	1	-	-	-	-	2	1
CO104.2	-	2	-	2	2	1	-	-	-	-	2	1
CO104.3	-	2	-	2	2	1	-	-	-	-	2	1
CO104.4	-	2	-	2	2	1	-	-	-	-	2	1
CO104.5	-	2	-	2	2	1	-	-	-	-	2	1
CO104.6	-	2	-	2	2	1	-	-	-	-	2	1
	-	2	-	2	2	1	-	-	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Science,
Cherukupally (V), Bhogapuram Mandal,
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)	
Branch : Pharmacology	
Year : I	Sem : I Course Name : Pharmacology Practical - I Code : MPL105PA
Course Outcomes	
CO105.1	Identify the concentration of test compounds using HPLC, UV, GC, fluorimetry and flame photometry.
CO105.2	Estimate the amount of drug by different analytical techniques.
CO105.3	Examine diuretic, antiulcer activities and to analyse Oral glucose tolerance test.
CO105.4	Evaluate various pharmacological activities by <i>in-vitro</i> or <i>in-vivo</i> methods.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO105.1	2	2	2	-	-	1	-	3	-	-	2	1
CO105.2	2	2	2	-	-	1	-	3	-	-	2	1
CO105.3	2	2	2	-	-	1	-	3	-	-	2	1
CO105.4	2	2	2	-	-	1	-	3	-	-	2	1
	2	2	2	-	-	1	-	3	-	-	2	1



[Signature]
PRINCIPAL
Avanthi Institute of Pharmaceutical Science,
Cherukupally (V), Bhogapuram Mandal,
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : I	Course Name : Pharmacology Practical – II	Code : MPL106PA
Course Outcomes			
CO106.1	Isolate and identify DNA, RNA from various tissues and estimate by using UV spectroscopy.		
CO106.2	Estimate the amount of protein, cell damage process by different analytical techniques.		
CO106.3	Examine pharmacokinetic studies of drugs by using software.		
CO106.4	Extract drug from biological samples by using UV and HPLC.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO106.1	2	2	2	-	-	1	-	3	-	-	2	1
CO106.2	2	2	2	-	-	1	-	3	-	-	2	1
CO106.3	2	2	2	-	-	1	-	3	-	-	2	1
CO106.4	2	2	2	-	-	1	-	3	-	-	2	1
	2	2	2	-	-	1	-	3	-	-	2	1



Jyoti
PRINCIPAL
Avanthi Institute of Pharmaceutical Science
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch: Pharmacology			
Year : I	Sem : II	Course Name : Advanced Pharmacology - II	Code : MPL201T
Course Outcomes			
CO201.1	Relate functions of hormones and to list out drugs acting on endocrine system.		
CO201.2	Outline the principles of chemotherapy and illustrate the mechanism of action of antibiotics, Antifungal, antiviral, and anti-TB drugs .		
CO201.3	Identify the chemotherapeutic agents for Protozoal and Helimenthetic infections.		
CO201.4	Understand the chemotherapy of cancer, Immunosuppressants, Immunostimulants and pharmacotherapy of Asthma and COPD.		
CO201.5	Assess the mechanism of drugs acting on GIT and applications of chronopharmacology to treat disorders.		
CO201.6	Elaborate the role of free radicals in etiopathology of various diseases and adapt the recent advances in treatment of various diseases.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	2	1	1	-	-	-	-	2	1	2	2	1
CO201.2	2	1	1	-	-	-	-	2	1	2	2	-
CO201.3	2	1	1	-	-	-	-	2	1	2	2	-
CO201.4	2	1	1	-	-	-	-	2	1	2	2	-
CO201.5	2	1	1	-	-	-	-	2	1	2	2	-
CO201.6	2	1	1	-	-	-	-	2	1	2	2	-
	2	1	1	-	-	-	-	2	1	2	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Science
Cherukupally (V), Bhogapuram Mandal,
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.


www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)	
Branch : Pharmacology	
Year : I	Sem : II
Course Name : Pharmacological and Toxicological Screening Methods – II	
Code : MPL202T	
Course Outcomes	
CO202.1	Appreciate the importance of ethical and regulatory guide lines for conducting toxicity studies.
CO202.2	Illustrate Acute, sub-acute and chronic- oral, dermal and inhalational toxicity studies as per OECD guidelines.
CO202.3	Construct reproductive toxicology, tearatogenicity studies.
CO202.4	Demonstrate the practical skills to conduct Genotoxicity studies and Carcinogenicity studies.
CO202.5	Categorize IND enabling studies. Appraise the importance of Safety pharmacology.
CO202.6	Compile the importance and applications of Toxicokinetic studies and alternative methods to animal toxicity testing.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO202.1	1	-	3	-	-	-	-	2	1	2	2	1
CO202.2	1	-	3	-	-	-	-	2	1	2	2	-
CO202.3	1	-	3	-	-	-	-	2	1	2	2	-
CO202.4	1	-	3	-	-	-	-	2	1	2	2	-
CO202.5	1	-	3	-	-	-	-	2	1	2	2	-
CO202.6	1	-	3	-	-	-	-	2	1	2	2	-
	1	-	3	-	-	-	-	2	1	2	2	1




PRINCIPAL
 Avanathi Institute of Pharmaceutical Sciences
 Cherukupally (V), Bhogapuram Mandal
 Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : II	Course Name : Principles of Drug Discovery	Code : MPL203T
Course Outcomes			
CO203.1	Understand the various stages of drug discovery. Appreciate the importance of the role of genomics, proteomics and bioinformatics in drug discovery.		
CO203.2	Illustrate various targets for drug discovery. Explain various lead seeking method and lead optimization.		
CO203.3	Know the various approaches for rational drug design.		
CO203.4	Summarize various virtual screening techniques for lead discovery.		
CO203.5	Assess the molecular docking studies for drug discovery.		
CO203.6	Appreciate the importance of the role of computer aided drug design in drug discovery.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	1	2	1	2	-	-	-	-	1	-	2	1
CO201.2	1	2	1	2	-	-	-	-	1	-	2	-
CO201.3	1	2	1	2	-	-	-	-	1	-	2	-
CO201.4	1	2	1	2	-	-	-	-	1	-	2	-
CO201.5	1	2	1	2	-	-	-	-	1	-	2	-
CO201.6	1	2	1	2	-	-	-	-	1	-	2	-
	1	2	1	2	-	-	-	-	1	-	2	1



Avanathi Institute of Pharmaceutical Sciences

- fym -
PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch: Pharmacology			
Year: I	Sem : II	Course Name : Clinical Research and Pharmacovigilance	Code : MPL204T
Course Outcomes			
CO204.1	Understand various regulatory requirements for conducting clinical trials.		
CO204.2	Demonstrate the types of clinical trial designs and Explain the responsibilities of key players involved in clinical trials.		
CO204.3	Construct the documentation process of clinical trials. Detect new adverse drug reactions and their assessment.		
CO204.4	Contrast the roles and responsibilities of Pharmacovigilance.		
CO204.5	Appraise various methods of ADR reporting and tools used in Pharmacovigilance.		
CO204.6	Predict principles and concepts of Pharmacoepidemiology, Pharmacoeconomics and Safety pharmacology.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO204.1	1	2	1	-	-	-	-	1	2	2	2	1
CO204.2	1	2	1	-	-	-	-	1	2	2	2	1
CO204.3	1	2	1	-	-	-	-	1	2	2	2	1
CO204.4	1	2	1	-	-	-	-	1	2	2	2	1
CO204.5	1	2	1	-	-	-	-	1	2	2	2	1
CO204.6	1	2	1	-	-	-	-	1	2	2	2	1
	1	2	1	-	-	-	-	1	2	2	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : II	Course Name : Pharmacology Practical - III	Code : MPL205PA
Course Outcomes			
CO205.1	Record the DRC of agonist using suitable isolated tissues preparation.		
CO205.2	Evaluate the drug concentrations by various bioassay methods using isolated tissue preparations.		
CO205.3	Study the effects of various drugs on isolated heart preparations.		
CO205.4	Recording of rat BP, heart rate and ECG.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO205.1	2	2	2	-	-	1	-	3	-	-	2	1
CO205.2	2	2	2	-	-	1	-	3	-	-	2	1
CO205.3	2	2	2	-	-	1	-	3	-	-	2	1
CO205.4	2	2	2	-	-	1	-	3	-	-	2	1
	2	2	2	-	-	1	-	3	-	-	2	1



Avanathi
PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)			
Branch : Pharmacology			
Year : I	Sem : II	Course Name : Pharmacology Practical - IV	Code : MPL206PA
Course Outcomes			
CO206.1	Study the drug absorption studies by averted rat ileum preparation.		
CO206.2	Study the acute oral and dermal toxicity studies as per OECD guidelines.		
CO206.3	Design the clinical trail and ADR monitoring protocols.		
CO206.4	Interpret <i>in-silico</i> pharmacophore based screening and QSAR studies by using software.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO206.1	-	2	2	2	-	1	-	3	-	-	2	1
CO206.2	-	2	2	2	-	1	-	3	-	-	2	1
CO206.3	-	2	2	2	-	1	-	3	-	-	2	1
CO206.4	-	2	2	2	-	1	-	3	-	-	2	1
	-	2	2	2	-	1	-	3	-	-	2	1



fyw
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation: PCI(R16)			
Branch: Pharmacology			
Year : II	Sem : I	Course Name : Research Methodology & Biostatistics	Code : MRM301T
Course Outcomes			
CO301.1	Recall the concepts of research methodology which includes study design, type of studies, stratifies and different design techniques.		
CO301.2	Infer the data using biostatistics technique like “t” test, ANOVA and chi square tests as well as recognize the importance of samples size and its significances.		
CO301.3	Learn the history of medical research for understanding the values of clinical ethics.		
CO301.4	Appraise the importance of communication and sociological relationships in medical research.		
CO301.5	Understand CPCSEA guidelines for laboratory animal facilities which include handling, maintenance, record keeping and transportation of lab animals.		
CO301.6	Discuss the history and basic principles of Declaration of Helsinki for medical research.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO301.1	-	2	2	2	2	-	-	1	2	-	2	1
CO301.2	-	2	2	2	2	3	-	1	2	-	2	1
CO301.3	-	2	2	2	2	3	-	1	2	-	2	1
CO301.4	-	2	2	2	2	3	-	1	2	-	2	1
CO301.5	-	2	2	2	2	3	-	1	2	-	2	1
CO301.6	-	2	2	2	2	3	-	1	2	-	2	1
	-	2	2	2	2	3	-	1	2	-	2	1



Avanthi Institute of Pharmaceutical Sciences

fypm
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, @avanthipharma.ac.in

Department of M Pharmacy Regulation : PCI(R16)	
Branch: Pharmacology	
Year: II Sem: II Course Name: Research Work	
Course Outcomes	
CO401.1	Define the fundamentals, carry out the literature review on the proposed research work and identify the problem.
CO401.2	Develop the research hypothesis.
CO401.3	Summarize the requirements in the proposed research.
CO401.4	Take part in research experiments and documented.
CO401.5	Evaluate the work done by applying statistic tools.
CO401.6	Appraise societal application and appreciation.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO401.1	1	1	2	1	1	3	2	1	2	-	2	1
CO401.2	1	1	2	1	1	3	2	1	2	-	2	1
CO401.3	1	1	2	1	1	3	2	1	2	-	2	1
CO401.4	1	1	2	1	1	3	2	1	2	-	2	1
CO401.5	1	1	2	1	1	3	2	1	2	-	2	1
CO401.6	1	1	2	1	1	3	2	1	2	-	2	1
	1	1	2	1	1	3	2	1	2	-	2	1

Avanthi Institute of Pharmaceutical Sciences



fym
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist.) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Modern Pharmaceutical Analytical Techniques	Code : MPA101T
Course Outcomes			
CO101.1	Recall principle, operation and applications of selected instrumental spectroscopic, chromatographic analysis.		
CO101.2	Gain knowledge on interpretation of NMR spectra for determination of molecular structure of compounds.		
CO101.3	Build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups by Mass spectroscopy and their applications in pharmacy.		
CO101.4	Understand the concept of separation and identification of compounds by chromatographic techniques.		
CO101.5	Categorize different anions and cations by using suitable electrophoresis techniques.		
CO101.6	Elaborate principle, theory and instruments employed for the analysis of drugs by thermal techniques.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO101.1	1	1	1	2	-	-	-	1	-	-	2	1
CO101.2	1	1	1	2	-	-	-	1	-	-	2	1
CO101.3	1	1	1	2	-	-	-	1	-	-	2	1
CO101.4	1	1	1	2	-	-	-	1	-	-	2	1
CO101.5	1	1	1	2	-	-	-	1	-	-	2	1
CO101.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Advanced Pharmaceutical Analysis	Code : MPA102T
Course Outcomes			
CO102.1	Gain basic knowledge on Impurities in new drug products and residual solvents. Analyze the stability studies of products.		
CO102.2	Describe the potential sources for elemental impurities. Summarize the protocols for conducting stability testing of drug substances and products.		
CO102.3	Analyze the identification and quantification of Impurity profiling and degradant characterization.		
CO102.4	Understand the basic principles of Stability testing of phytopharmaceuticals.		
CO102.5	Summarize the Principles and Procedures involved in Biological tests and assays of Vaccines, Hormones and Blood Products.		
CO102.6	Elaborate principle, instrumentation and applications of various types of Immunoassays in Pharmaceutical Field.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO102.1	1	1	1	2	-	-	-	1	-	-	2	1
CO102.2	1	1	1	2	-	-	-	1	-	-	2	1
CO102.3	1	1	1	2	-	-	-	1	-	-	2	1
CO102.4	1	1	1	2	-	-	-	1	-	-	2	1
CO102.5	1	1	1	2	-	-	-	1	-	-	2	1
CO102.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1



Avanathi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Pharmaceutical Validation	Code : MPA103T
Course Outcomes			
CO103.1	Illustrate the importance of Qualification and Validation of instruments and equipments.		
CO103.2	Outline the process of Qualification of analytical instruments.		
CO103.3	Understand the methods of Validation of Utility systems.		
CO103.4	Know the methods of cleaning validation.		
CO103.5	Outline ICH and USP guidelines of Analytical method validation. Enlighten the significance of usage of Computerized system validation.		
CO103.6	Compile the General Principles, role and responsibilities of Intellectual Property.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO103.1	1	1	1	2	-	-	-	1	-	-	2	1
CO103.2	1	1	1	2	-	-	-	1	-	-	2	1
CO103.3	1	1	1	2	-	-	-	1	-	-	2	1
CO103.4	1	1	1	2	-	-	-	1	-	-	2	1
CO103.5	1	1	1	2	-	-	-	1	-	-	2	1
CO103.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Food Analysis	Code : MPA104T
Course Outcomes			
CO104.1	Understand the concepts of classification, properties, analysis and applications of food carbohydrates and Proteins.		
CO104.2	Understand the concepts of classification, properties, analysis and applications of food Lipids and Vitamins.		
CO104.3	Outline the applications and applications of Food additives.		
CO104.4	Summarize the importance of Pigments and synthetic dyes in food preparations and know the principles of analysis.		
CO104.5	Identify the purity of milk, milk constituents and milk products by various Analytical techniques.		
CO104.6	Understand the concepts of Pesticide analysis. Acquire basic knowledge on food regulations and legislations.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO104.1	1	2	-	-	-	1	-	-	1	1	2	1
CO104.2	1	2	-	-	-	1	-	-	1	1	2	1
CO104.3	1	2	-	-	-	1	-	-	1	1	2	1
CO104.4	1	2	-	-	-	1	-	-	1	1	2	1
CO104.5	1	2	-	-	-	1	-	-	1	1	2	1
CO104.6	1	2	-	-	-	1	-	-	1	1	2	1
	1	2	-	-	-	1	-	-	1	1	2	1



Avanthi Institute of Pharmaceutical Sciences


PRINCIPAL

Avanthi Institute of Pharmaceutical Science
Cherukupally (V), Bhogapuram Mandala
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Pharmaceutical Analysis Practical - I	Code : MPA105PA
Course Outcomes			
CO105.1	Able to perform the calibration of Glassware and Instruments.		
CO105.2	Estimate the amount of Impurity for the given drugs.		
CO105.3	Examine the purity of official compounds by instrumental techniques and different titrations.		
CO105.4	Identify the Quantitative determination of functional groups and drugs by using different reagents.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO105.1	3	2	-	-	-	1	-	3	-	-	2	1
CO105.2	3	2	-	-	-	1	-	3	-	-	2	1
CO105.3	3	2	-	-	-	1	-	3	-	-	2	1
CO105.4	3	2	-	-	-	1	-	3	-	-	2	1
	3	2	-	-	-	1	-	3	-	-	2	1



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch : Pharmaceutical Analysis			
Year : I	Sem : I	Course Name : Pharmaceutical Analysis Practical - I	Code : MPA105PB
Course Outcomes			
CO106.1	Estimate the drug content by using UV spectroscopy, GC and HPLC.		
CO106.2	Able to determine Carbohydrate, Protein, Vitamin and Lipid content in food products.		
CO106.3	Determine preservatives, pesticide residue in food products.		
CO106.4	Analysis of vitamin content in food products		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO106.1	3	2	-	-	-	1	-	3	-	-	2	1
CO106.2	3	2	-	-	-	1	-	3	-	-	2	1
CO106.3	3	2	-	-	-	1	-	3	-	-	2	1
CO106.4	3	2	-	-	-	1	-	3	-	-	2	1
	3	2	-	-	-	1	-	3	-	-	2	1



[Signature]
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch :Pharmaceutical Analysis			
Year: I	Sem: II	Course Name: Advanced Pharmaceutical Analysis - II	Code: MPA201T
Course Outcomes			
CO201.1	Recall principle, operation and applications of HPLC.		
CO201.2	Gain knowledge on Bio chromatography for the separation of compounds.		
CO201.3	Understand the concept of separation and identification of compounds by Gas chromatographic techniques.		
CO201.4	Elaborate the Principles, instrumentation, pharmaceutical applications of Supercritical fluid chromatography		
CO201.5	Build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups by Mass spectroscopy and their applications in pharmacy.		
CO201.6	Elaborate principle, theory and instruments employed for the analysis of drugs by NMR Spectroscopy.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	1	1	1	2	-	-	-	1	-	-	2	1
CO201.2	1	1	1	2	-	-	-	1	-	-	2	1
CO201.3	1	1	1	2	-	-	-	1	-	-	2	1
CO201.4	1	1	1	2	-	-	-	1	-	-	2	1
CO201.5	1	1	1	2	-	-	-	1	-	-	2	1
CO201.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

Principal
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)	
Branch: Pharmaceutical Analysis	
Year: I	Sem: II Course Name: Modern Bio-Analytical Techniques Code: MPA202T
Course Outcomes	
CO202.1	Appreciate the importance of Extraction of drugs and metabolites from biological matrices.
CO202.2	Illustrate Biopharmaceutical Factors Affecting Drug Bioavailability.
CO202.3	Understand drug interactions involved in the design of dosage regimen.
CO202.4	Understand the Importance and applications of toxicokinetic studies.
CO202.5	Understand various types of Cell culture techniques.
CO202.6	Compile the importance and applications of In Vivo Bioavailability and Bioequivalence studies.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO202.1	1	1	1	2	-	-	-	1	-	-	2	1
CO202.2	1	1	1	2	-	-	-	1	-	-	2	1
CO202.3	1	1	1	2	-	-	-	1	-	-	2	1
CO202.4	1	1	1	2	-	-	-	1	-	-	2	1
CO202.5	1	1	1	2	-	-	-	1	-	-	2	1
CO202.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES
(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)	
Branch :Pharmaceutical Analysis	
Year: I	Sem: II
Course Name: Quality Control And Quality Assurance Code : MPA203T	
Course Outcomes	
CO203.1	Understand the Concept and Evolution of Quality Control and Quality Assurance.
CO203.2	Remember cGMP guidelines according to schedule M.
CO203.3	Know the Analysis of raw materials, finished products, packaging materials, in process quality control.
CO203.4	Summarize Quality control test for containers, closures and secondary packing materials.
CO203.5	Assess the Documentation process in pharmaceutical industry.
CO203.6	Appreciate the importance of the role of Manufacturing operations and controls in product development.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO203.1	1	1	1	2	-	-	-	1	-	-	2	1
CO203.2	1	1	1	2	-	-	-	1	-	-	2	1
CO203.3	1	1	1	2	-	-	-	1	-	-	2	1
CO203.4	1	1	1	2	-	-	-	1	-	-	2	1
CO203.5	1	1	1	2	-	-	-	1	-	-	2	1
CO203.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

Principal
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES
(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)	
Branch :Pharmaceutical Analysis	
Year: I	Sem: II
Course Name: Herbal and Cosmetic Analysis	
Code :MPA204T	
Course Outcomes	
CO204.1	Determine herbal remedies and regulations.
CO204.2	Identify Adulterants and Deterioration products.
CO204.3	Demonstrate Testing of natural products and drugs.
CO204.4	Understand Analysis of natural products and monographs.
CO204.5	Appraise various methods of Herbal drug-drug interactions.
CO204.6	Predict principles and concepts of Evaluation of cosmetic products as per BSI.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO204.1	1	2	1	-	-	-	-	1	-	-	2	1
CO204.2	1	2	1	-	-	-	-	1	-	-	2	1
CO204.3	1	2	1	-	-	-	-	1	-	-	2	1
CO204.4	1	2	1	-	-	-	-	1	-	-	2	1
CO204.5	1	2	1	-	-	-	-	1	-	-	2	1
CO204.6	1	2	1	-	-	-	-	1	-	-	2	1
	1	2	1	-	-	-	-	1	-	-	2	1



Avanathi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES
(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)			
Branch: Pharmaceutical Analysis			
Year: I	Sem: II	Course Name: Pharmaceutical Analysis Practical - III	Code :MPA205PA
Course Outcomes			
CO205.1	Interpretation of organic compounds by FT-IR, NMR.		
CO205.2	Determine purity by DSC in pharmaceuticals.		
CO205.3	Study the Quantitative analysis of components by gel electrophoresis, HPLC.		
CO205.4	Record Protocol preparation for the conduct of BA/BE studies according to guidelines.		

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO205.1	3	2	-	-	-	1	-	3	-	1	2	1
CO205.2	3	2	-	-	-	1	-	3	-	1	2	1
CO205.3	3	2	-	-	-	1	-	3	-	1	2	1
CO205.4	3	2	-	-	-	1	-	3	-	1	2	1
	3	2	-	-	-	1	-	3	-	1	2	1



Principal
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)		
Branch :Pharmaceutical Analysis		
Year: I	Sem: II Course Name: Pharmaceutical Analysis Practical - IV	Code :MPA206PA
Course Outcomes		
CO206.1	Perform Quality control tests for Primary and secondary packing materials.	
CO206.2	Study the Preparation of Master Formula Record.	
CO206.3	Determine of Quality control tests for cosmetics.	
CO206.4	Interpret Quantitative analysis of rancidity in lipsticks and hair oil.	

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO206.1	-	2	-	-	-	1	-	3	-	-	2	1
CO206.2	-	2	-	-	-	1	-	3	-	-	2	1
CO206.3	-	2	-	-	-	1	-	3	-	-	2	1
CO206.4	-	2	-	-	-	1	-	3	-	-	2	1
	-	2	-	-	-	1	-	3	-	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)	
Branch :Pharmaceutical Analysis	
Year: II	Sem: I Course Name: Research Methodology & Biostatistics Code :MRM301T
Course Outcomes	
CO301.1	Recall the concepts of research methodology which includes study design, type of studies, stratifies and different design techniques.
CO301.2	Infer the data using biostatistics technique like “t” test, ANOVA and chi square tests as well as recognize the importance of samples size and its significances.
CO301.3	Learn the history of medical research for understanding the values of clinical ethics.
CO301.4	Appraise the importance of communication and sociological relationships in medical research.
CO301.5	Understand CPCSEA guidelines for laboratory animal facilities which include handling, maintenance, record keeping and transportation of lab animals.
CO301.6	Discuss the history and basic principles of Declaration of Helsinki for medical research.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO301.1	-	-	-	-	-	-	-	1	2	-	2	1
CO301.2	-	-	-	-	-	3	-	1	2	-	2	1
CO301.3	-	-	-	-	-	3	-	1	2	-	2	1
CO301.4	-	-	2	-	-	3	-	1	2	-	2	1
CO301.5	-	-	2	-	-	3	-	1	2	-	2	1
CO301.6	-	-	2	-	-	3	-	1	2	-	2	1
	-	-	2	-	-	3	-	1	2	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by AICTE, PCI, New Delhi Recognized by the Govt. of A.P. & Affiliated to J.N.T.U.G.V Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Department of M Pharmacy, Regulation : PCI (R16)	
Branch: Pharmaceutical Analysis	
Year: II Sem: II Course Name: Research Work	
Course Outcomes	
CO401.1	Define the fundamentals, carry out the literature review on the proposed research work and identify the problem.
CO401.2	Develop the research hypothesis.
CO401.3	Summarize the requirements in the proposed research.
CO401.4	Take part in research experiments and documented.
CO401.5	Evaluate the work done by applying statistic tools.
CO401.6	Appraise societal application and appreciation.

CO-PO Mapping

CO	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO401.1	1	1	2	1	1	3	2	1	2	-	2	1
CO401.2	1	1	2	1	1	3	2	1	2	-	2	1
CO401.3	1	1	2	1	1	3	2	1	2	-	2	1
CO401.4	1	1	2	1	1	3	2	1	2	-	2	1
CO401.5	1	1	2	1	1	3	2	1	2	-	2	1
CO401.6	1	1	2	1	1	3	2	1	2	-	2	1
	1	1	2	1	1	3	2	1	2	-	2	1



Avanthi Institute of Pharmaceutical Sciences

[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

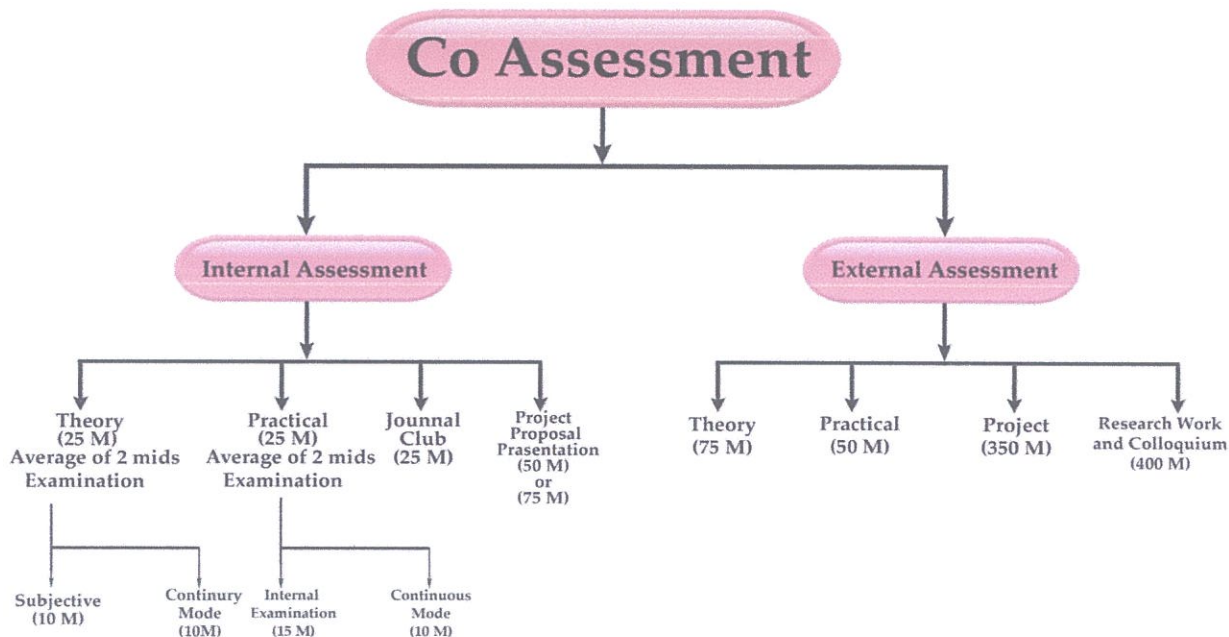


AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)
 Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

CO Assessment and Attainment Process:

Direct attainment of COs is determined from the performance of students in Semester Internal Examination (SIE) and Semester External Examination (SEE). The proportional weightages of SIE: SEE set in the ratio 40:60 for both university and non-university examinations.



CO Assessment for M Pharmacy university Examinations

- For each theory course, they are two internal examinations and the division of COs is listed below.

Theory Course	Units	CO described
Mid Examination - I	Unit - I	CO1
	Unit - II	CO2
	Unit - III (Half)	CO3
Mid Examination - II	Unit - III (Half)	CO4
	Unit - IV	CO5
	Unit - V	CO6

- For each practical course, they are two internal examinations and the division of CO's is,

Practical Course	CO described
Mid Examination - I	CO1
	CO2
Mid Examination - II	CO3
	CO4





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

- Course assessment process starts with the marks secured by the students from internal and external examination. The CO attainment levels are measured based on the results of the average of two internal examinations and semester end examination conducted by the university or the college.
- The finalized CO-PO articulation matrix was taken and Set Attainment level (Target) for each course. The Target will be fixed by considering the class average marks obtained in semester examination of previous batch or analyzing the nature of the course by distinguishing whether it belongs to Analytical / Theory / Problematic course or Targets are approximately given into certain levels.
- If a course is newly introduced in the curriculum, then the Target will be fixed as 60% by the concern faculty handling the course. Each CO is assessed with the tools chosen by the course coordinators. Each tool will represent the scores secured by the individual student and the attainment level for each CO is calculated by measuring the percentage of students scored equal or more than the Target fixed for that course.
- **For measuring the attainments of COs of a theory or practical course, the targets for the attainment are fixed as indicated below:**

Course	Target
Theory Internal Examinations	
Subjective (15 M)	75% of maximum marks (11.25 marks out of 20)
Continuous Mode (10 M)	75 % of maximum marks (7.5 marks out of 10)
Practical Internal Examinations	
Lab internal Exam (15 M)	75 % of maximum marks (11.25 marks out of 15)
Continuous Mode (10 M)	75 % of maximum marks (7.5 marks out of 10)
External Examination	
Both Theory and Lab courses	Grade weightage (10) obtained subject to a minimum of 60%
Project	75 % of maximum marks (562.5 marks out of 750)

PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

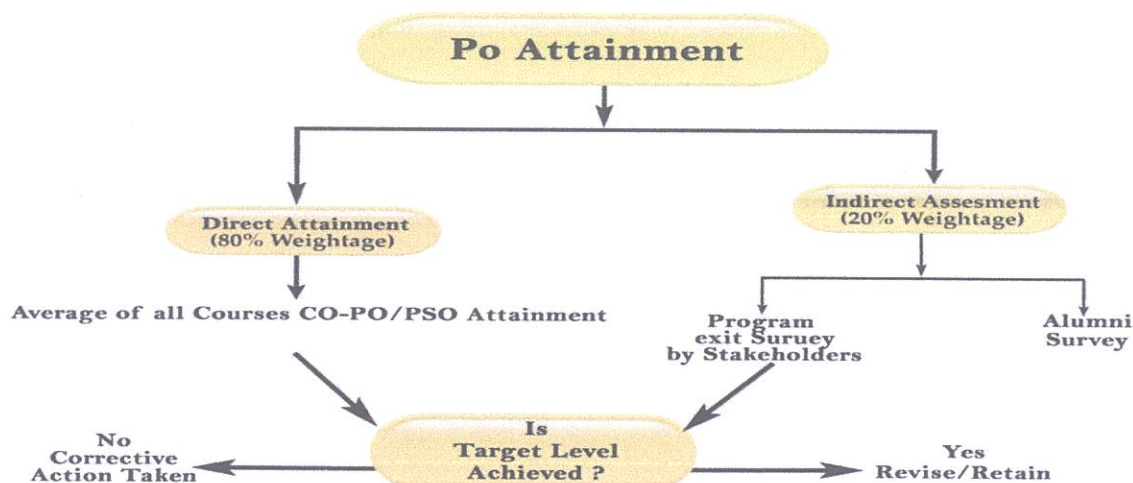
- The attainment levels are set as given below

Attainment Level	Theory Subjects	Practical Subjects
Level 1	0-59 % of Students scored the set attainment level	0-49% of Students scored the set attainment level
Level 2	60-79 % of Students scored the set attainment level	50-79 % of Students scored the set attainment level
Level 3	>80 % of Students scored the set attainment level	>80 % of Students scored the set attainment level

- As per the regulation PCI, the normalization percentage will be considered for measuring the final attainment of each COs of a course. For theory courses 40% of CA and 60% of SE will be calculated. For Laboratory and Project courses 50% of CA and 50% of SE will be calculated.
- The CO attainment for the course will be calculated by taking the average of all CO's final attainment value. If the Final Attainment of the Course outcomes are equal to the target, then all the course outcomes are attained else not attained. If a course failed to attain the set attainment target, then action to be taken for continuous improvement will be suggested by the course handling faculty.

PO/PSO Assessment and Attainment process:

Program outcomes are narrower statements that describe what students are expected to be able to do by the time of graduation. POs are expected to be aligned closely with Graduate Attributes. Programme Specific Outcomes are what the students should be able to do at the time of graduation with reference to a specific discipline.



PO/PSO Assessment and Attainment process





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. OF A.P. & Affiliated to JNTUGV, VIZIANAGARAM)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.
www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Direct Method:

Once the overall attainment percentage of each COs is calculated, the PO and PSO attainment is calculated by taking the cumulative average of all the course's CO attainment which contributes to the specific Program Outcomes and Program Specific Outcomes. The overall CO attainment values are calculated for all the direct assessment tools. For theory and practical courses,

$$\text{Overall CO attainment} = 0.25 * \text{Internal Exams attainments} + 0.75 * \text{External Exams attainments}$$

Indirect Method:

Indirect methods such as surveys and interviews ask the stakeholders to reflect on student learning. They assess opinions or thoughts about the graduate's knowledge or skills and their valued contributions to different stakeholders. An indirect assessment is used to measure certain implicit qualities of student learning, such as values, perceptions, and attitudes from a variety of perspectives. The stakeholders include students, alumni, faculty, employers, and parents.

$$\text{Indirect PO Attainment} = 80\% \text{ of Program Exit Feedback} + 10\% \text{ of Alumni Feedback} + 10\% \text{ Employer Feedback}$$

Overall Attainment of PO

$$\text{Overall PO attainment} = 80\% \text{ of Direct PO Attainment} + 20\% \text{ of Indirect PO Attainment}$$

- The obtained values will be compared with the set attainment target fixed for each PO and PSO. If the target is achieved, then the same process will be continued for further batches. If the target is not achieved, then continuous improvement action will be taken for each PO and PSO.
- Continuous improvement action includes Action to be taken for improving the teaching learning process based on the attainment gap or by improving learning facilities or organizing programs to fill the attainment gap.



[Signature]
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

CO - PO Attainment for 2020- 2022 M Pharmacy Pharmaceutics Batch

The CO and PO/PSO of all the subjects during the 2020- 2022 batch were calculated after evaluating the results. In our department of Pharmacy, 13 theory courses, 4 practical courses and One project work were conducted during the 2020- 2022 batch under PCI (R16) regulation. The following data provides the CO and PO/PSO of 2020- 2022 Batch.

S No	Course Code	Course Name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
1	MPH101T	Modern Pharmaceutical Analytical Techniques	-	0.42	0.42	-	0.42	-	-	-	-	-	0.42	0.42
2	MPH102T	Drug Delivery System	2.67	2.67	2.67	2.67	-	-	-	2.67	-	-	2.67	2.67
3	MPH103T	Modern Pharmaceutics	1.92	1.92	1.92	-	1.92	-	1.92	-	-	-	1.92	1.92
4	MPH104T	Regulatory Affairs	-	1.92	-	1.92	-	-	-	1.92	1.92	1.92	1.92	1.92
5	MPH105P A	Pharmaceutics Practical – I	-	2.40	2.40	-	2.40	-	2.40	-	-	-	2.40	2.40
6	MPH105P B	Pharmaceutics Practical – II	3.00	3.00	-	3.00	-	3.00	-	-	-	3.00	3.00	3.00
7	MPH201T	Molecular Pharmaceutics (Nano Technology)	1.08	1.08	1.08	-	-	-	1.08	-	-	-	1.08	1.08
8	MPH202T	Advanced Biopharmaceutics and Pharmacokinetics	1.79	1.79	1.79	-	-	-	1.79	1.79	1.79	-	1.79	1.79
9	MPH203T	Computer Aided Drug Development	1.88	1.88	1.88	-	1.88	1.88	1.88	-	-	-	1.88	1.88
10	MPH204T	Formulation Development of Pharmaceuticals	2.71	2.71	2.71	-	2.71	2.71	2.71	-	-	-	2.71	2.71

Avanathi Institute of Pharmaceutical Sciences



PRINCIPAL
Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E. P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

11	MPH205P A	Pharmaceutics Practical – III	-	2.00	2.00	-	2.00	-	2.00	-	-	-	2.00	2.00
12	MPH205P B	Pharmaceutics Practical – IV	-	2.00	2.00	-	2.00	-	2.00	-	-	-	2.00	2.00
13	MRM301T	Research Methodology & Biostatistics	-	-	3.00	-	-	3.00	3.00	3.00	3.00	-	3.00	3.00
14	MPH401	Research Work	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	3.00	3.00


Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Overall Attainment

To calculate the final PO/ PSO attainments Direct and Indirect attainments are added in the proportion of 80: 20

CO-PO Attainment	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
Direct	2.25	2.39	2.32	2.64	2.04	2.7	2.17	2.47	2.42	2.46	2.38	2.32
Indirect	2.86	2.55	2.65	2.63	2.84	2.36	2.86	2.88	2.49	2.72	2.14	2.98
Overall	2.372	2.422	2.386	2.638	2.2	2.632	2.308	2.552	2.434	2.512	2.332	2.452



[Handwritten Signature]
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

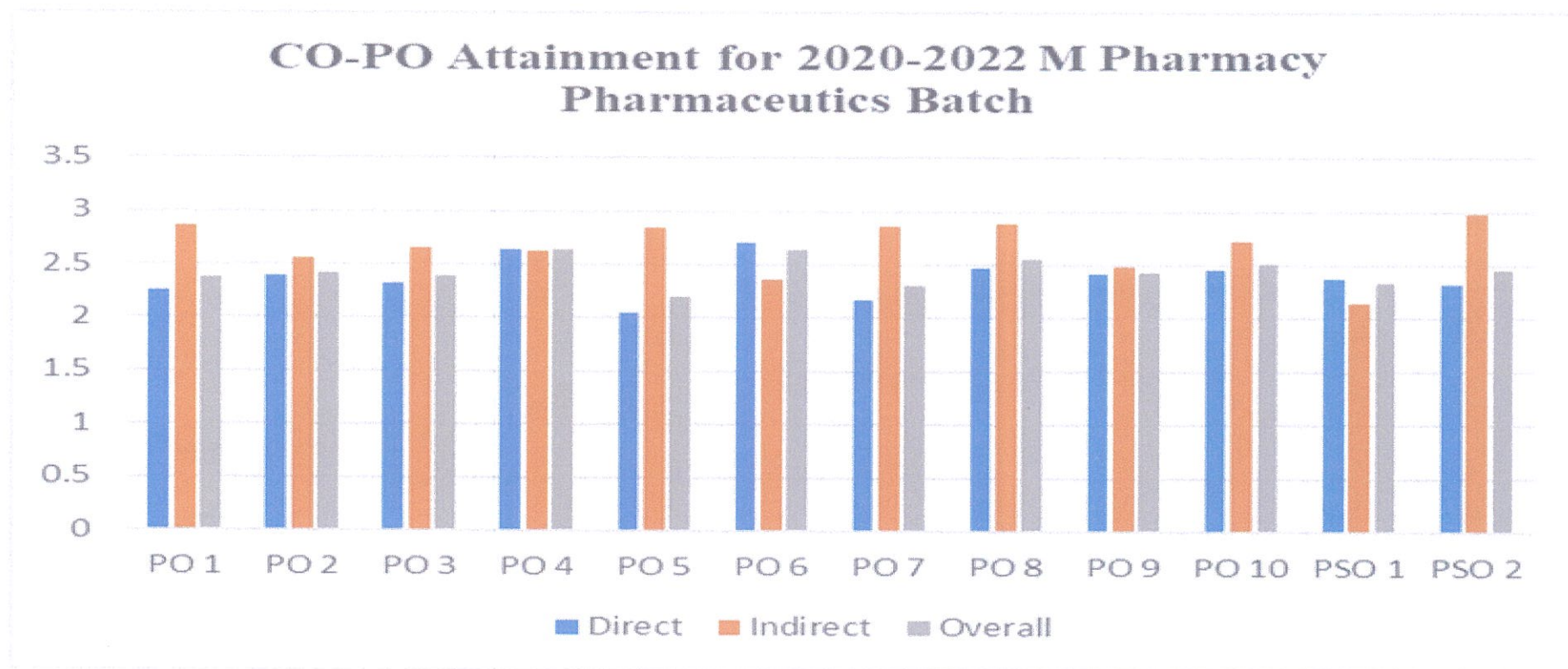


AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in



CO-PO attainment for 2020-2022 M Pharmacy Pharmaceutics Batch



[Signature]
Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Continuous Quality Improvement for PO's and PSO's:

Target= 2.3

Observation: All PO's and PSO's attained the target except PO 5 (Practical Skills).

Action Taken Report: Actions taken based on the results of evaluation of each of the COs, POs and PSOs.

POs Attainment Levels and Actions for Improvement for M Pharmacy Pharmaceutics 2020-2022 Batch

POs Target Level Attainment Level Observations

PO 1 : Scientific knowledge **2.37** **2.30**

Target level is reached with respect to course outcomes. Target was attained by applying the scientific and technological principles to design, develop effective pharmaceutical dosage forms and drug delivery systems for better therapeutic results.

The following courses did not meet the target level: MPH103T, MPH201T, MPH202T and MPH203T.

Action 1: Encouraged to participate in Seminars, Conferences and workshops to update latest scientific and technical skills.

Action 2: Initiated the effective use of the library for reference to the latest journals related to the subject and other resources among students.

Action 3: Encouraged to participate in poster presentations conducted in the college and other institutes on a yearly basis.

Action 4: Added extra lab sessions to improve practical knowledge.

Action 5: Students encouraged involving in the activities for formulation and evaluation of dosage forms.

PO2 : Technological applications **2.42** **2.30**

Target level is reached with respect to course outcomes. Target was achieved by providing technical knowledge about the formulation and





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

evaluation of novel drug delivery systems.

The following courses did not meet the target level: MPH101T, MPH103T, MPH104T, MPH201T, MPH202T, MPH203T, MPH205PA and MPH205PB.

Action 1: Students encouraged referring to international journals for real-world exposure in the tutorial hours.

Action 2: Small quizzes and group discussions are also engaged in the tutorial hour to increase the participation of students.

Action 3: Seminars/ Mini Project/Project were conducted so that they will have exposure to state of the art.

Action 4: Encouraged to participate in poster presentations conducted in the college and other institutes on a yearly basis.

Action 5: Initiated to solve more case studies and motivate the students to use library resources effectively.

PO3: Modern Tool Usage **2.38** **2.30**

Target level is reached with respect to course outcomes. Target is attained by enabling the students to utilize modern instruments and understanding the latest simulation software for quality, safety and efficacy of delivery of dosage forms.

The following courses did not meet the target level: MPH101T, MPH103T, MPH201T, MPH202T, MPH203T, MPH205PA and MPH205PB.

Action 1: Encouraged students to participate in workshops conducted in college and other institutes.

Action 2: Conduction of industrial visits and industrial training reflects the real-time situation.

Action 3: Added extra lab sessions to improve practical knowledge.

Action 4: Viva-voce was conducted to understand the capability of the students.

Action 5: Mini projects were undertaken during the course to enable the technical skills.

PO4: Entrepreneurship **2.63** **2.30**

Target level is reached with respect to course outcomes. Target is attained through combination of education, experience, and a proactive





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

approach.

The following courses did not meet the target level: MPH 104T.

Action1: Encouraging students to update existing knowledge, skills, and resources that goes beyond traditional roles for pharmacists (Eg., e- Prescription etc.)

Action 2: Involvement in HACKTHONS, TECH FEST can expose students successfully implements new ideas into practice.

Action 3: Small quizzes and group discussions also engaged to increase the communication skills.

PO5 : Practical Skills 2.20 2.30

Target level is almost reached with respect to course outcomes. Target is attained by understanding human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfilment of practice, professional and societal responsibilities.

The following courses did not meet the target level: MPH 101T, MPH 103T, MPH203T, MPH205PA and MPH205PB.

Action1: Engage in research projects related to design, development and evaluation of novel drug delivery systems.

Action 2: Developing strong problem-solving skills by case studies as sample.

Action 3: Familiarized with simulation and modeling tools used in pharmaceuticals.

Action 4: Students were motivated to participate in different activities.

PO 6 : Applied Science 2.63 2.30

Target level is reached with respect to course outcomes. Achievement of target indicates that the students were getting opportunities to use their pharmacy Knowledge for the welfare of society and encouraging creative thinking, problem-solving, and the development of new solutions to address healthcare challenges.

The following courses did not meet the target level: MPH203T.

Action 1: Attended conferences and workshops focusing on applied science in pharmaceuticals.





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi. Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 2: Gained practical experience in quality control and assurance processes.

Action 3: Engaged in laboratory work that involves practical experiments related to drug formulation, development, and analysis.

PO7: Computational and statistical Methodologies 2.30 2.30

Target level is achieved with respect to course outcomes. Target was attained by combining theoretical knowledge with practical applications, engaging in research, and develops a strong foundation in computational and statistical methodologies for drug development, optimization, and analysis.

The following courses did not meet the target level: MPH103T, MPH 201T, MPH202T, MPH203T, MPH205PA and MPH205PB.

Action 1: Enrolled in advanced statistical courses like Design Expert, Minitab and Advanced Excel.

Action 2: Engaged in interdisciplinary projects that involve collaborations with other branches of pharmacy students.

Action 3: Training was given on various simulation studies that reflect the ADME characteristics of drug in our body.

Action 4: Encouraged to learn programming languages.

Action 5: Engaged in interdisciplinary projects that involve collaborations with computational scientists, bioinformaticians, or data scientists.

PO8: Pharmaceutical Ethics 2.55 2.30

Target level is reached with respect to course outcomes. Target was attained through ethical frameworks and application of ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

The following courses did not meet the target level: MPH104T and MPH202T.

Action 1: Seminars were conducted on legal and regulatory framework (Regulatory affairs and Ethics).

Action 2: Participated in case studies and practical scenarios that explore ethical dilemmas in pharmaceuticals.

PO9: Environment and Sustainability 2.43 2.30

Target level is reached with respect to course outcomes. The course provided an awareness of applying contextual knowledge to assess the societal health care needs and demonstrate effective planning abilities in order to solve problems related to health care practice.





ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

The following courses did not meet the target level: MPH104T and MPH202T.

Action 1: It is suggested to implement Green Pharmacy Design through energy-efficient lighting, heating, and cooling systems.

Action 2: Implementing programs for the safe disposal of expired or unused medications helps prevent environmental contamination.

PO10: Life Long Learning 2.51 2.30

Target level is reached with respect to course outcomes. The knowledge acquired is basically lifelong learning and at the same time, it helps in team management and thereby aid in project management.

The following courses did not meet the target level: MPH104T.

Action 1: Various training programs, Workshops were conducted to demonstrate the latest techniques in Pharmacy.

Action 2: Students were motivated to participate in different activities.

Action 3: Encouraged to participate in Seminars, Conferences and workshops to update latest scientific and technical skills.

PSOs Attainment Levels and Actions for Improvement for M Pharmacy Pharmaceutics 2020-2022 Batch

PSOs Target Level Attainment Level Observations

PSO 1 : Formulation Expertise 2.33 2.30

Target level is reached with respect to course outcomes. Target is achieved by implementing the technical skills in dispensing, compounding of drugs and medicines and expertise in designing dosage regimen, recognizing possible adverse reactions.

The following courses did not meet the target level: MPH101T, MPH103T, MPH104T, MPH201T, MPH202T, MPH203T, MPH205PA and MPH205PB.

Action 1: Various training programs and workshops were conducted to demonstrate the latest techniques in formulation and evaluation of drugs.

Action 2: Students were motivated to participate in different activities.

Action 3: Expert Sessions conducted by Industry experts.

Avanthi Institute of Pharmaceutical Sciences



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram (Dist), - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 4: Provided Collaborative interactive sessions with our functional MOU's.

PSO2: Computational Application 2.45 2.30

Target level is reached with respect to course outcomes. Students achieved the target by inculcating the practice of pharmacy for empowering the healthy living in the community by various means of awareness and health strategies.

The following courses did not meet the target level: MPH101T, MPH103T, MPH104T, MPH201T, MPH202T, MPH203T, MPH205PA and MPH205PB.

Action 1: Conducted workshops which consist of computer simulation software.

Action 2: Students were motivated to participate in different activities.

Action 3: Expert Sessions conducted by Industry experts

Action 4: Provided Collaborative interactive sessions with our functional MOU's.



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

CO - PO Attainment for 2020- 2022 M Pharmacy Pharmacology Batch

The CO and PO/PSO of all the subjects during the 2020- 2022 batch were calculated after evaluating the results. In our department of Pharmacy, 13 theory courses, 4 practical courses and One project work were conducted during the 2020- 2022 batch under PCI (R16) regulation. The following data provides the CO and PO/PSO of 2020- 2022 Batch.

S No	Course Code	Course Name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
1	MPL101T	Modern Pharmaceutical Analytical Techniques	-	1.38	1.38	1.38	-	1.38	-	1.38	-	-	1.38	1.38
2	MPL102T	Advanced Pharmacology - I	1.13	1.13	1.13	1.13	-	-	-	-	1.13	-	1.13	1.13
3	MPL103T	Pharmacological and Toxicological Screening Methods – I	2.75	-	2.75	-	-	-	-	2.75	2.75	-	2.75	2.75
4	MPL104T	Cellular and Molecular Pharmacology	-	2.63	-	2.63	2.63	2.63	-	-	-	-	2.63	2.63
5	MPL105P A	Pharmacology Practical - I	-	2.00	-	-	-	2.00	-	2.00	-	-	-	2.00
6	MPL105P B	Pharmacology Practical - II	2.00	2.00	2.00	-	-	2.00	-	2.00	-	-	2.00	2.00
7	MPL201T	Advanced Pharmacology - II	1.08	1.08	1.08	-	-	-	-	1.08	1.08	1.08	1.08	1.25
8	MPL202T	Pharmacological and Toxicological Screening Methods – II	1.08	-	1.08	-	-	-	-	1.08	1.08	1.08	1.08	1.00
9	MPL203T	Principles of Drug Discovery	2.58	2.58	2.58	2.58	-	-	-	-	2.58	-	2.58	2.50



Avanthi Institute of Pharmaceutical Sciences

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

10	MPL204T	Clinical Research and Pharmacovigilance	1.79	1.79	1.79	-	-	-	-	1.79	1.79	1.79	1.79	1.79
11	MPL205P A	Pharmacology Practical - III	2.00	2.00	2.00	-	-	2.00	-	2.00	-	-	2.00	2.00
12	MPL205P B	Pharmacology Practical - IV	-	3.00	3.00	3.00	-	3.00	-	3.00	-	-	3.00	3.00
13	MRM301T	Research Methodology & Biostatistics	-	3.00	3.00	3.00	3.00	3.00	-	3.00	3.00	-	3.00	3.00
14	MPL401	Research Work	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	3.00	3.00

Principal



PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Overall Attainment

To calculate the final PO/ PSO attainments Direct and Indirect attainments are added in the proportion of 80: 20

CO-PO Attainment	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
Direct	1.93	2.13	2.34	2.38	2.87	2.37	3	2.32	2.32	1.31	2.34	2.28
Indirect	2.34	2.98	2.88	2.84	2.64	2.84	2.69	2.84	2.63	2.45	2.98	2.56
Overall	2.012	2.3	2.448	2.472	2.824	2.464	2.938	2.424	2.382	1.538	2.468	2.336


Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

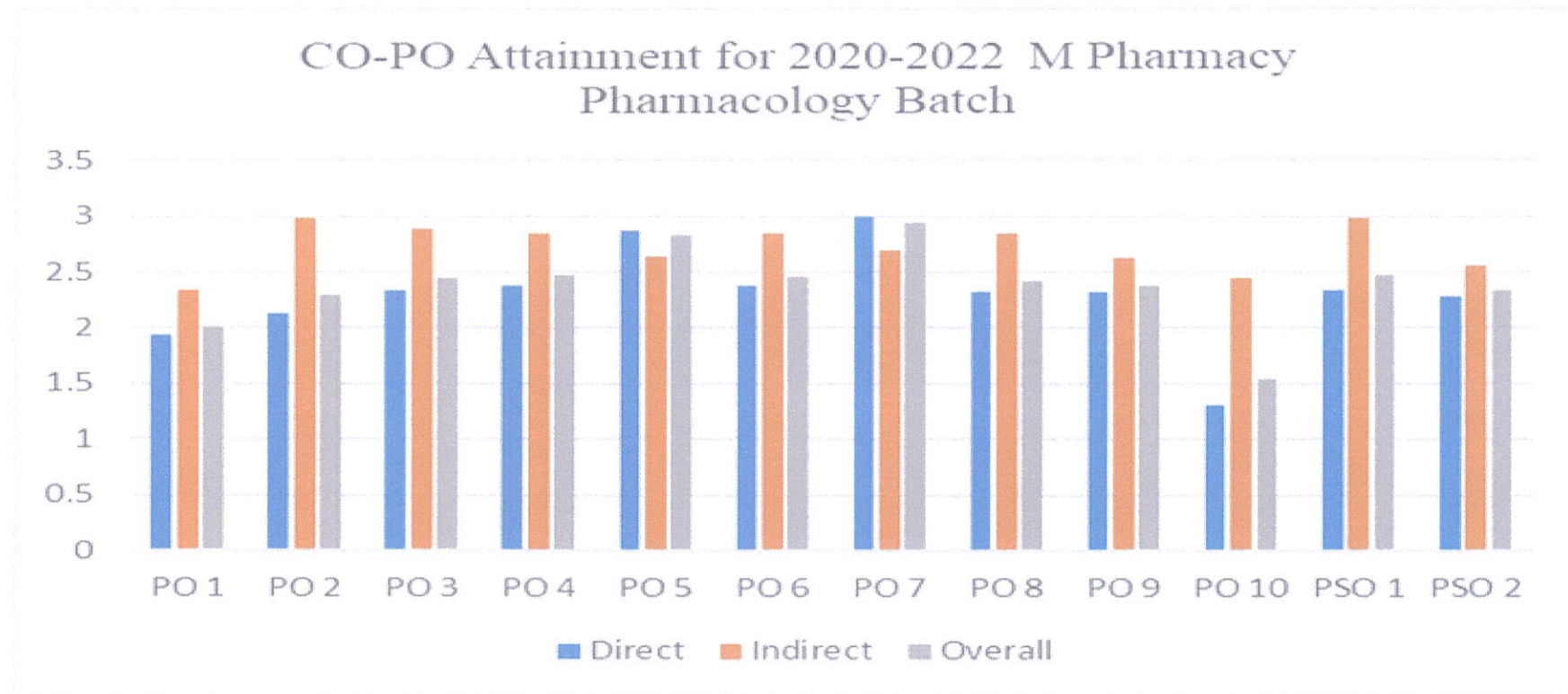


AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in



CO-PO attainment for 2020-2022 M Pharmacy Pharmacology Batch


Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Continuous Quality Improvement for PO's and PSO's:

Target= 2.3

Observation: All PO's and PSO's attained the target except PO 1 (Drug Expertise) and PO 10 (Life Long Learning).

Action Taken Report: Actions taken based on the results of evaluation of each of the COs, POs and PSOs.

POs Attainment Levels and Actions for Improvement for M Pharmacy Pharmacology 2020-2022 Batch

POs Target Level Attainment Level Observations

PO 1 : Drug Expertise 2.01 2.30

Target level is not reached with respect to course outcomes. Drug expertise, particularly in the field of pharmacology, involves a deep understanding of how drugs interact with the human body.

The following courses did not meet the target level: MPL102T, MPL105PB, MPL201T, MPL202T, MPL204T and MPL205PA.

Action 1: Workshops were conducted on new drugs, including drug discovery, preclinical testing, and clinical trials.

Action 2: Categorized drugs based on their chemical structure, mechanism of action, therapeutic use and potential side effects.

Action 3: Engaged the students in Patient Counseling mainly interact with patients about their medications, including providing information on proper usage, potential side effects, and addressing any concerns or questions they may have.

Action 4: Introductory sessions were given for each module.

Action 5: All the assignments given with more focus on analytical skills.

PO2 : Analytical reasoning: 2.30 2.30

Target level is reached with respect to course outcomes. Analytical reasoning plays a crucial role in pharmacology, which is the study of drugs





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi. Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

and their effects on living organisms, to analyze, interpret, and draw conclusions from various data and information related to drug development, drug interactions, and the effects of drugs on the body.

The following courses did not meet the target level: MPL101T, MPL102T, MPL105PA, MPL105PB, MPL201T, MPL204T and MPL205PA.

Action 1: Students encouraged in Analytical reasoning and analyze data from preclinical studies to determine the safety and efficacy of potential drug candidates

Action 2: Seminars/ Mini Project/Project were conducted so that they will have exposure to state of the art.

Action 3: Some ADR reporting questions had been given as assignments.

Action 4: Initiated to solve more problematic questions during tutorial hours and motivate the students to use library resources effectively

Action 5: Small quizzes and group discussions are also engaged in the tutorial hour to increase the participation of students.

PO3: Experimental Ethics 2.44 2.30

Target level is reached with respect to course outcomes. Experiential ethics in pharmacological studies involves learning and understanding of ethical principles through direct, hands-on experiences, often in practical or clinical settings.

The following courses did not meet the target level : MPL101T, MPL102T, MPL105PB, MPL201T, MPL202T, MPL204T and MPL 205PA.

Action 1: Added extra lab sessions to improve practical knowledge.

Action 2 Students learn teaching ethical principles through hands-on, experiential learning.

Action 3: Students learn different aspects like Clinical Trial Design, Interprofessional Collaboration, Pharmacy Practice Simulations, and Critical Evaluation of Research Papers.

Action 4: Viva-voce was conducted to understand the capability of the students.

PO4: Interdisciplinary engagement 2.47 2.30





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Target level is reached with respect to course outcomes. Interdisciplinary engagement in pharmacology studies involves collaboration and interaction among professionals from various disciplines to address complex issues related to drugs, their effects, and their applications in healthcare.

The following courses did not meet the target level: MPL101T and MPL102T.

Action1: Students learn about Collaboration between pharmacologists and geneticists to study how genetic variations influence individual responses to drugs.

Action 2: Exposure to research is provided by encouraging students to do internships in the premier institute/industry.

Action 3: Sessions were conducted to explain the concepts.

Action 4: Tests conducted to know the level of students

Action 5: Extra material was given as handouts to understand the concepts

Action 6: Viva-voce conducted to understand the capability of the students.

PO5 : Statistical Skills 2.82 2.30

Target level is reached with respect to course outcomes. Various technical events conducted to demonstrate the latest tools used. Statistical skills play a crucial role in pharmacology, which is the study of drugs and their effects on living organisms. Here are several ways in which statistical skills are important in this field.

All courses met the target level.

PO 6 : The Professional Identity: 2.46 2.30

Target level is reached with respect to course outcomes. Achievement of target indicates that the students were getting opportunities to use their profession.

The following courses did not meet the target level: MPL101T, MPL105PA, MPL105PB and MPL205PA.





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)
Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 1: Awareness programmes were conducted on opportunities in Patient Care Advocacy, Leadership in Medication Management

Action 2: Social Service activities were conducted.

Action 3: Tutorials classes had conducted with more participation from students.

Action 4: Pharmacists can advocate for their profession at local, regional, and national levels.

PO7: Environment and Sustainability 2.96 2.30

Target level is reached with respect to course outcomes. Several subjects have an impact on the environment and sustainable development. Environmental sustainability in pharmacology refers to the responsible and ethical consideration of environmental impact throughout the lifecycle of pharmaceutical products and the practices associated with pharmacological research, development, manufacturing, and disposal.

The following courses did not meet the target level: MPL202T

Action 1: It is suggested to review Environmental aspects related to the syllabus content effectively and Safe Disposal of Pharmaceuticals, Proper disposal of expired or unused medications is crucial to prevent environmental contamination

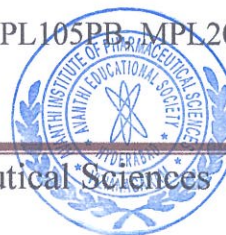
Action 2: The Activity like Tree Plantation has to be organized to encourage the students for Understanding the responsibility towards environment.

PO8: Modern tool usage 2.42 2.30

Target level is reached with respect to course outcomes. Modern tools and technologies have significantly transformed the field of pharmacology, enhancing the efficiency, precision, and scope of research, drug development, and patient care. Here are several ways in which modern tools are used in the pharmacology profession

The following courses did not meet the target level: MPL101T, MPL105PA, MPL105PB, MPL201T, MPL202T, MPL204T and MPL205PA.

Action 1: Workshops conducted on various simulation experiments.



Avanthi Institute of Pharmaceutical Sciences

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 2: On the campus, the awareness program on pharmacovigilance programs.

Action 3: Students are given a workshop and bridge course on cology equipment.

Action 4: Provided different links and guidance regarding the scope of learning designing and professional ethics.

PO9: Intellectual Flexibility **2.38** **2.30**

Target level is reached with respect to course outcomes. The individual skills in the area Intellectual flexibility in pharmacology refers to the ability to adapt, think creatively, and navigate complex and evolving challenges in the field of drug discovery, development, and healthcare.

The following courses did not meet the target level: MPL102T, MPL201T, MPL202T and MPL204T.

Action1: Students learn many professional activities through Responding to Patient Needs, Innovation in Drug Discovery.

Action 2: A bridge course on personality development was conducted for the students.

Action 3: Students were grouped for projects and mini-projects to work as a team.

Action4: Intellectual flexibility empowers students to navigate the dynamic and multifaceted nature of drug discovery and development.

PO10: Lifelong learning **1.53** **2.30**

Target level is reached with respect to course outcomes. It provided the knowledge for report writing and documentation of projects. Lifelong learning is crucial in the field of pharmacology for students to stay current with advancements, adapt to evolving technologies, and contribute to the improvement of healthcare outcomes. The role of lifelong learning in pharmacology is multifaceted and includes the following aspects:

The following courses did not meet the target level: MPL201T, MPL202T and MPL204T.

Action 1: Students were grouped for projects and mini-projects to work as a team.

Action 2: Provided updated information on changes in regulatory requirements and compliance standards.

Action 3: Encouraged students to adopt a patient-centered approach.





ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

PSOs Attainment Levels and Actions for Improvement for M Pharmacy Pharmacology 2020-2022 Batch

PSOs Target Level Attainment Level Observations

Program Specific Outcomes

PSO 1: Research Expertise 2.46 2.30

Target level is reached with respect to course outcomes. Target is achieved through comprehensive knowledge of designing, Conducting, analysis, reporting and documentation of the preclinical and clinical research studies for effective pharmacotherapy of drugs.

The following courses did not meet the target level: MPL101T, MPL102T, MPL201T, MPL202T, MPL204T and MPL205PA.

Action 1: Prepared students for careers in the dynamic and research-intensive pharmaceutical industry

Action 2: Conducted seminars and educational programs with industry needs by incorporating industry-relevant research projects.

Action 3: Provided knowledge on Simulation studies on animals.

PSO 2: Pharmacovigilance Expertise 2.33 2.3

Target level is reached with respect to course outcomes. Target is achieved through apply and appraise regulatory, computational and informatics tools and ethical concepts in preclinical and clinical research for pharmaceutical and healthcare domain in relation to society.

The following courses did not meet the target level: MPL101T, MPL102T, MPL105PA, MPL105PB, MPL201T, MPL202T, MPL204T and MPL205PA.

Action 1: Students learned to focus on monitoring and assessing the safety of medications throughout their lifecycle.

Action 2: Conducted seminars Pharmacovigilance to identify previously unknown or rare adverse effects.

Action 3: Utilized statistical and epidemiological methods to analyze large datasets of adverse event reports.



Principal

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

CO - PO Attainment for 2020- 2022 M Pharmacy Pharmaceutical Analysis Batch

The CO and PO/PSO of all the subjects during the 2020- 2022 batch were calculated after evaluating the results. In our department of Pharmacy, 13 theory courses, 4 practical courses and One project work were conducted during the 2020- 2022 batch under PCI (R16) regulation. The following data provides the CO and PO/PSO of 2020- 2022 Batch.

S NO	Course Code	Course Name	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
1	MPA101T	Modern Pharmaceutical Analytical Techniques	-	1.38	1.38	1.38	-	1.38	-	1.38	-	-	1.38	1.38
2	MPA102T	Advanced Pharmaceutical Analysis - I	1.13	1.13	1.13	1.13	-	-	-	-	1.13	-	1.13	1.13
3	MPA103T	Pharmaceutical Validation	2.75	-	2.75	-	-	-	-	2.75	2.75	-	2.75	2.75
4	MPA104T	Food Analysis	-	2.63	-	2.63	2.63	2.63	-	-	-	-	2.63	2.63
5	MPA105PA	Pharmaceutical Analysis Practical - I	3.00	3.00	-	-	-	3.00	-	3.00	-	-	3.00	3.00
6	MPA105PB	Pharmaceutical Analysis Practical - II	3.00	3.00	-	-	-	3.00	-	3.00	-	-	3.00	3.00
7	MPA201T	Advanced Pharmaceutical Analysis - II	2.67	2.67	2.67	2.67	-	-	-	2.67	-	-	2.67	2.67
8	MPA202T	Modern Bio-Analytical Techniques	2.71	2.71	2.71	2.71	-	-	-	2.71	-	-	2.71	2.71



Avanthi Institute of Pharmaceutical Sciences

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

9	MPA203T	Quality Control and Quality Assurance	2.67	2.67	2.67	2.67	-	-	-	2.67	-	-	2.67	2.67
10	MPA204T	Herbal and Cosmetic Analysis	2.67	2.67	2.67	-	-	-	-	-	2.67	-	-	2.67
11	MPA205PA	Pharmaceutical Analysis Practical - III	3.00	3.00	-	-	-	3.00	-	3.00	-	3.00	3.00	3.00
12	MPA205PB	Pharmaceutical Analysis Practical - IV	3.00	3.00	-	-	-	3.00	-	3.00	-	-	3.00	3.00
13	MRM301T	Research Methodology & Biostatistics	-	-	3.00	-	-	3.00	-	3.00	3.00	-	3.00	3.00
14	MPA401	Research Work	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	-	3.00	3.00


Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Overall Attainment

To calculate the final PO/ PSO attainments Direct and Indirect attainments are added in the proportion of 80: 20

CO-PO Attainment	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PSO 1	PSO 2
Direct	2.69	2.57	2.44	2.31	2.87	2.75	3	2.74	2.51	3	2.61	2.61
Indirect	2.28	2.65	2.67	2.87	2.65	2.89	2.43	2.88	2.65	2.63	2.46	2.58
Overall	2.608	2.586	2.486	2.422	2.826	2.778	2.886	2.768	2.538	2.926	2.58	2.604


Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



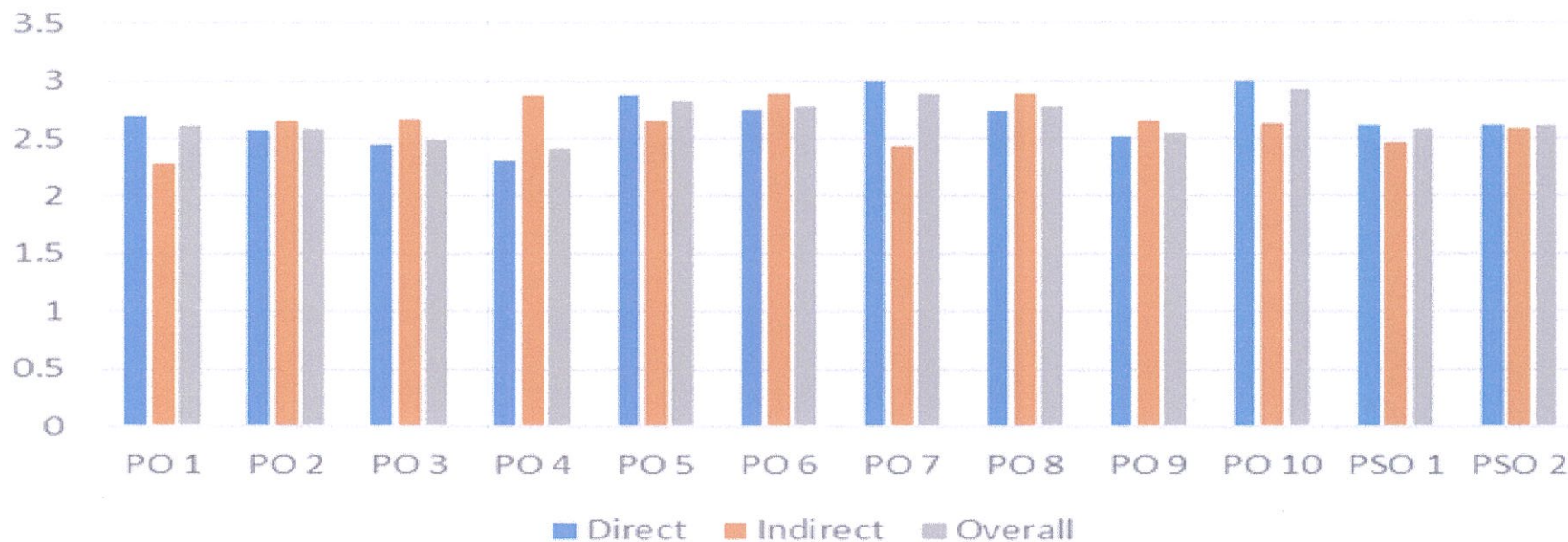
AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

CO-PO Attainment for 2020-2022 M Pharmacy Pharmaceutical Analysis Batch



CO-PO attainment for 2020-2022 M Pharmacy Pharmaceutical Analysis Batch



Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

Avanthi Institute of Pharmaceutical Sciences



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Continuous Quality Improvement for PO's and PSO's:

Target= 2.3

Observation: All PO's and PSO's attained the target.

Action Taken Report: Actions taken based on the results of evaluation of each of the COs, POs and PSOs.

POs Attainment Levels and Actions for Improvement for M Pharmacy Pharmaceutical Analysis 2020-2022 Batch

POs Target Level Attainment Level Observations

PO 1 : Analytical Knowledge 2.60 2.30

Target level is achieved with respect to course outcomes. Target was achieved through combination of academic coursework, laboratory work, hands-on experience, and continuous learning.

The following course did not meet the target level: MPA102T.

Action 1: Extra lab sessions were conducted to improve the practical knowledge.

Action 2: Small quizzes and group discussions are also engaged to increase the participation of students.

Action 3: Flipped classroom and video lectures was taken to understand the interpretation of spectra.

Action 4: Encouraged the students for the effective use of the library for reference to the latest journals related to the subject.

Action 5: Encouraged students to participate in workshops conducted in college and other institutes.

PO2 : Analytical reasoning 2.58 2.30

Target level is achieved with respect to course outcomes. PO 2 was attained because of implementation of theoretical knowledge with practical applications, staying updated on industry standards, and actively participating in laboratory work and research projects.

Avanthi Institute of Pharmaceutical Sciences



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

The following courses did not meet the target level: MPA101T and MPA102T.

Action 1: Participate in laboratory sessions that provide hands-on experience with analytical instruments and techniques.

Action 2: Conduction of industrial visits and industrial training reflects the real-time situation.

Action 3: Added extra lab sessions to improve practical knowledge.

Action 4: Viva-voce was conducted to understand the capability of the students.

Action 5: Mini projects were undertaken during the course to enable the technical skills.

PO3: Problem Solving 2.48 2.30

Target level is achieved with respect to course outcomes. Problem analysis is achieved through the utilization of the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. The course helps the student in the design of formulation of drugs and Pharmaco-therapy of diseases. PO3 was attained since the overall concepts of the subject helped the student in the quality control of dosage forms.

The following courses did not meet the target level: MPA101T and MPA102T.

Action 1: Case studies was provided as handouts for understanding the concepts.

Action 2: Methods were adopted to identify weaker students and remedial sessions were conducted to improve their performance.

Action 3: Extra lab sessions were conducted to improve the practical knowledge.

Action 4: Various technical fests and events conducted to explore the profession of pharmacy.

Action 5: Viva-voce was conducted to understand the capability of the students.

PO4: Modern Techniques 2.42 2.30

Target level is achieved with respect to course outcomes. PO4 was achieved through a combination of cognitive skills, critical thinking,





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

problem-solving, and specific educational and experiential activities.

The following courses did not meet the target level: MPA101T and MPA102T.

Action1: Challenging assignments had been given to each student and performance was monitored.

Action 2: Flipped classroom and video lectures was taken to understand the working and interpretation of drugs.

Action 3: Select a few students to conduct seminars about the advanced topics apart from the syllabus.

Action 4: Workshops were conducted for acquiring knowledge about utilization of modern instruments.

PO5 : Experimental Ethics 2.82 2.30

Target level is achieved with respect to course outcomes. Target was attained through ethical frameworks and application of ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.

All the courses met the target level.

PO 6 : Interdisciplinary Commitment 2.77 2.30

Target level is achieved with respect to course outcomes. Achievement of target indicates that the students were understanding, analyzing and communicating the value of their professional roles in the society with the other departments of pharmacy for the uplift or augmentation of the safety of environment and health.

The following course did not meet the target level: MPA101T.

Action 1: Encouraged the students to do value added courses.

Action 2: Encouraged students to participate in workshops, seminars and conferences conducted in college and other institutes.

Action 3: Various technical fests and events conducted to explore the profession of pharmacy.

Action 4: Tutorials classes had conducted with more participation from students.





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 5: Engaged in interdisciplinary projects that involve collaborations with computational scientists, bioinformaticians, or data scientists.

PO7: Professional Identity 2.80 2.30

Target level is achieved with respect to course outcomes. Professional identity was achieved through continuous process that involves a combination of education, experience, networking, and personal development.

All the courses met the target level.

PO8: Statistical Skills 2.70 2.30

Target level is reached with respect to course outcomes. Target was attained by combining theoretical knowledge with practical applications, engaging in research, and develops a strong foundation in computational and statistical methodologies for drug development, optimization, and analysis.

The following courses did not meet the target level: MPA101T.

Action 1: Enrolled in advanced statistical courses like Design Expert, Minitab and Advanced Excel.

Action 2: Engaged in interdisciplinary projects that involve collaborations with other branches of pharmacy students.

Action 3: Training was given on various simulation studies that reflects the quality control of drugs.

PO9: Rational Flexibility 2.53 2.30

Target level is reached with respect to course outcomes. Target was achieved through collaborative efforts and performing various initiatives to strengthen pharmacist-society relationship.

The following course did not meet the target level: MPA102T.

Action 1: Students were grouped for projects and mini-projects to work as a team.

Action 2: A bridge course on personality development was conducted for the students

Action 3: Small quizzes and group discussions are also engaged in the tutorial hours to increase the participation of students.





ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

PO10: Life-Long Learning 2.92 2.30

Target level is not reached with respect to course outcomes. In-house student projects were promoted, so as to enhance awareness on sustainability and related aspects. Several subjects have an impact on the environment and sustainable development related to environment.

All the courses met the target level.

PSOs Attainment Levels and Actions for Improvement (2020-2022)

PSOs Target Level Attainment Level Observations

PSO 1: Advanced Analytical Proficiency 2.58 2.30

Target level is achieved with respect to course outcomes.

The following courses did not meet the target level: MPA101T and MPA102T.

Action 1: Various training programs, Workshops were conducted to demonstrate the latest techniques in Pharmacy.

Action 2: Students were motivated to participate in different activities.

Action 3: Expert Sessions conducted by Industry experts.

Action 7: Initiated to conduct seminars and assignments regarding the documentation of design decisions

Action 5: Participated in industrial Training Programmes.

PSO2: Entrepreneurship 2.60 2.30

Target level is reached with respect to course outcomes. Target is achieved by creating awareness on Independent analytical consultant services and analytical laboratory.

The following courses did not meet the target level: MPA101T and MPA102T.

Action 1: Expert Sessions conducted by Industry experts.



Avanthi Institute of Pharmaceutical Sciences

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

Action 2: Provide Collaborative interactive sessions with our functional MOU's.




Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences

Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

(Approved by A.I.C.T.E, P.C.I, New Delhi, Recognized by the Govt. of A.P. & Affiliated to JNTU-GV, Vizianagaram)

Cherukupally (Village), Chittivalasa (SO), Bhogapuram (Mandal), Vizianagaram (Dist) -531162.

www.avanthipharma.ac.in, principal@avanthipharma.ac.in

The Department of Pharmacy, CO and PO/PSO of all the subjects during the 2020-2022 all branches of M Pharmacy Batches were calculated after evaluating the results.

We are furnishing the details of the CO and PO/PSO attainments of a select theory and Practical courses as Sample copies, the details of the subject, lab are:

- 1) Advanced Pharmaceutical Analysis – II
- 2) Pharmaceutical Analysis Practical - I




Principal

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES
Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162
Regulation : PCI (R16), Subject : Advanced Instrumental Analysis - II Year & Sem : I-II
Faculty : Mrs. Chaitanya Bangari, Associate Professor

Course Outcomes

CO201.1	Recall principle, operation and applications of HPLC.
CO201.2	Gain knowledge on Biochromatography for the separation of compounds.
CO201.3	Understand the concept of separation and identification of compounds by Gas chromatographic techniques.
CO201.4	Elaborate the Principles, instrumentation, pharmaceutical applications of Supercritical fluid chromatography.
CO201.5	Build the analytical understanding in the level of ion, atom, group and molecular structure of organic and inorganic compounds with different functional groups by Mass spectroscopy and their applications in pharmacy.
CO201.6	Elaborate principle, theory and instruments employed for the analysis of drugs by NMR Spectroscopy.

CO-PO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2
CO201.1	1	1	1	2	-	-	-	1	-	-	2	1
CO201.2	1	1	1	2	-	-	-	1	-	-	2	1
CO201.3	1	1	1	2	-	-	-	1	-	-	2	1
CO201.4	1	1	1	2	-	-	-	1	-	-	2	1
CO201.5	1	1	1	2	-	-	-	1	-	-	2	1
CO201.6	1	1	1	2	-	-	-	1	-	-	2	1
	1	1	1	2	-	-	-	1	-	-	2	1

B. Chaitanya

Faculty



Principal
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally (Village), Near Thagarapavalasa Bridge, Vizianagaram (Dist)-531162

Regulation : PCI (R16), Subject : Advanced Instrumental Analysis - II Year & Sem : I-II

Faculty: Mrs. Chaitanya Bangari, Associate Professor

Calculation standards

	<i>1:Low (40%)</i>	<i>2:Medium (60%)</i>	<i>3: High (75%)</i>
Lab Internal (30 M)	12	18	22.5
Continuous Mode (10M)	4	6	7.5

B. Chaitanya
Faculty

[Signature]
Principal



PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



ESTD : 2005

AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Branch : Pharmaceutics / Pharmaceutical Technology

Regulation:PCI , Subject: Advanced Instrumental Analysis - II Year & Sem: I - II (MID-I)

Calculation standards of attainment

	1:Low (40%)	2:Medium (60%)	3:High (75%)												
Descriptive (30M)	12	18	22.5												
Continuous Mode (10M)	4	6	7.5												
S.NO	Roll No	CO1 (15 M)		CO2 (15M)		CO3(15 M)		Total Marks (30M)	Mid I Theory Marks (15 M)	Continuous Mode (10 M)	Attainment for continuous mode Level (Avg of CO1, CO2, CO3)	Final Mid I Marks (25 M)	CO1 Average Attainment Level	CO2 Average Attainment Level	CO3 Average Attainment Level
		Q1	Att level	Q2	Att level	Q3	Att Level								
1	20T51S1601	0	0	0	0	0	0	0	0	10	3	10	1.5	1.5	1.5
2	20T51S1602	13	3	0	0	13	3	26	13	10	3	23	3	1.5	3
3	20T51S1603	0	0	14	3	12	3	26	13	10	3	23	1.5	3	3
4	20T51S1604	12	3	0	0	12	3	24	12	10	3	22	3	1.5	3
5	20T51S1605	12	3	0	0	14	3	26	13	10	3	23	3	1.5	3
6	20T51S1606	0	0	12	3	12	3	24	12	10	3	22	1.5	3	3



PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
 Cherukupally (V), Bhogapuram Mandal
 Vizianagaram Dt., - 531162

Attainment Level Summary	CO1	CO2	CO3
Maximum Attainment Level	3	3	3
Cut-off Attainment Level(60%)	1.8	1.8	1.8
No.of Student >=Cut-off	3	2	5
% of students >=cut-off	50	33	83.33
Level Attained	1	1	3
Level of Attained			
% of students	<60	60-79	>=80
Level	1	2	3

B. Chaitanya
Faculty



[Signature]
Principal

PRINCIPAL

Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES


Branch : Pharmaceutics / Pharmaceutical Technology

ation:PCI , Subject: Advanced Instrumental Analysis - II Year & Sem: I - II (MID-II)

Calculation standards of attainment

	<i>1:Low (40%)</i>	<i>2:Medium (60%)</i>	<i>3:High (75%)</i>												
Descriptive (30 M)	12	18	22.5												
Continuous Mode (10M)	4	6	7.5												
S.NO	Roll No	CO1 (15 M)		CO2 (15M)		CO3(15 M)		Total Marks (30M)	Mid I Theory Marks (15 M)	Continu ous Mode (10 M)	Attainm ent for continuo us mode Level (Avg of CO1, CO2, CO3)	Final Mid I Marks (25 M)	CO1 Averag e Attain ment Level	CO2 Averag e Attain ment Level	CO3 Averag e Attain ment Level
		Q1	Att level	Q2	Att level	Q3	Att Level								
1	20T51S1601	12	3	0	0	12	3	24	12	10	3	22	3	1.5	3
2	20T51S1602	0	0	14	3	12	3	26	13	10	3	23	1.5	3	3
3	20T51S1603	13	3	0	0	13	3	26	13	10	3	23	3	1.5	3
4	20T51S1604	12	3	0	0	12	3	24	12	10	3	22	3	1.5	3
5	20T51S1605	0	0	12	3	14	3	26	13	10	3	23	1.5	3	3
6	20T51S1606	0	0	12	3	12	3	24	12	10	3	22	1.5	3	3




PRINCIPAL
 Avanthi Institute of Pharmaceutical Sciences
 Cherukupally (V), Bhogapuram Mandal
 Vizianagaram Dt., - 531162

Attainment Level Summary	CO4	CO5	CO6
Maximum Attainment Level	3	3	3
Cut-off Attainment Level(60%)	1.8	1.8	1.8
No.of Student \geq Cut-off	3	3	6
% of students \geq cut-off	50	50	100
Level Attained	1	1	3
Level of Attained			
% of students	<60	60-79	\geq 80
Level	1	2	3

B-Chaitanya
Faculty



Hynd
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

**AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES**

Cherukupally (Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation : PCI , Subject : Advanced Instrumental Analysis - II Year & Sem : I - II

Faculty: Mrs. Chaitanya Bangari, Associate Professor

SL.NO	REGD.NO	Grade	GRADE WEIGHTAGE	60% of External Attainment
1	20T51S1601	C	6	3.60
2	20T51S1602	B	7	4.20
3	20T51S1603	B	7	4.20
4	20T51S1604	F	0	0.00
5	20T51S1605	A	8	4.80
6	20T51S1606	A	8	4.80

Attainment Level Summary	CO1 to CO6		
Maximum Attainment Level	3		
Cut-off Attainment Level(1.8-Passed)	5		
No.of Student \geq Cut-off	5		
% of students \geq cut-off	83		
Level Attained	3		
Level of Attained			
% of students	<50	50-79	\geq 80
Level	1	2	3

B. Chaitanya
Faculty



[Signature]
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI , Subject: Advanced Pharmaceutical Analysis - II Year & Sem: I-II

Faculty: Mrs. Chaitanya Bangari, Associate Professor

Particulars	Overall Attainment					
	CO1	CO2	CO3	CO4	CO5	CO6
Internal Attainment Level (INT)	1	1	3	1	1	3
External Attainment Level (EXT)	3	3	3	3	3	3
TOTAL = INT * 0.25 + EXT * 0.75	2.5	2.5	3.00	2.5	2.5	3
Target Level is 2.2(75%)						

Action taken: Suggestions for further Improvement by Course Teacher

Continuous Quality Improvement for COs:

Target =2.2

Observation: All COs are marginally attained.

To strengthen CO1: Students to be made practice more analysis questions for achieving higher levels of target.

To strengthen CO2: Conduct more number of assignments and practice session to attain the target

To strengthen CO4: Conduct guest lectures to attain the target

To strengthen CO5: Conduct guest lectures to attain the target

B. Chaitanya
Faculty

Principa
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162





AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI , Subject:Advanced Pharmaceutical Analysis - II Year & Sem: I-II

Faculty: Mrs. Chaitanya Bangari, Associate Professor

The Mapping of CO and PO on 3 point scale{high-3,Medium-2,Low-1} is:

CO Attainment Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	
CO-1	2.5	1	1	1	2	-	-	-	1	-	-	2	1	1
CO-2	2.5	1	1	1	2	-	-	-	1	-	-	2	1	-
CO-3	3	1	1	1	2	-	-	-	1	-	-	2	1	-
CO-4	2.5	1	1	1	2	-	-	-	1	-	-	2	1	-
CO-5	2.5	1	1	1	2	-	-	-	1	-	-	2	1	-
CO-6	3	1	1	1	2	-	-	-	1	-	-	2	1	-
PO/PSO Weightage	6	6	6	12	0	0	0	6	0	0	12	6	1	
PO/PSO Co-relation weightage all Cos(1-5)	16	16	16	32	0	0	0	16	0	0	32	16	2.5	
PO/PSO Attainment Level	2.67	2.67	2.67	2.67	-	-	-	2.67	-	-	2.67	2.67	2.50	

B-Chaitanya
Faculty




Principal
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

Faculty: Mrs. B Chaitanya, Associate Professor

Course Outcomes

CO105.1	Able to perform the calibration of Glassware and Instruments.
CO105.2	Estimate the amount of Impurity for the given drugs.
CO105.3	Examine the purity of official compounds by instrumental techniques and different titrations.
CO105.4	Identify the Quantitative determination of functional groups and drugs by using different reagents.

CO-PO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PS01	PS02
CO105.1	3	2	-	-	-	1	-	3	-	-	2	1
CO105.2	3	2	-	-	-	1	-	3	-	-	2	1
CO105.3	3	2	-	-	-	1	-	3	-	-	2	1
CO105.4	3	2	-	-	-	1	-	3	-	-	2	1
	-	2	-	-	-	1	-	3	-	-	-	2

B. Chaitanya
Faculty

[Signature]
Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

Faculty: Mrs. B Chaitanya, Associate Professor

Calculation standards of attainment For Lab

	<i>1:Low (40%)</i>	<i>2:Medium (60%)</i>	<i>3: High (75%)</i>
Lab Internal (25 M)	10	15	18.75
Lab External (Grade-10)	4	6	7.5

B. Chaitanya
Faculty

[Signature]
Principal



PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

Calculation standards of attainment				Faculty: Mrs. B Chaitanya, Associate Professor												
	1:Low(40%)	2:Medium (60%)	3:High (75%)													
Lab Internal (25 M)	10	15	18.75													
Lab External (Grade -10)	4	6	7.5													
S.NO	REGD.NO	Lab Internal - I (Max : 30M)	Lab Internal - I (Reduced to 15M)	Continuous Mode (10 M)	Total Lab Internal - I (25 M)	Att. Level	Lab Internal - II (Max:30 M)	Lab Internal - II (Reduced to 15M)	Continuous Mode (10 M)	Total Lab Internal -II (Max: 25 M)	Att. Level	Average Lab Internal I (Max:2 5M)	Att. Level	Lab External (Max: Grade -10)	As per CGPA calculation- Lab External I (Max:Grade-10)	Att. Level
1	20T51S1601	24	12	8	20	3	26	15	9	22	3	21	3	A	8	3



tyanz
PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162

2	20T51S1602	26	13	8	21	3	28	14	8	22	3	22	3	O	10	3
3	20T51S1603	28	14	8	22	3	28	14	9	23	3	23	3	O	10	3
4	20T51S1604	26	13	8	21	3	26	13	8	21	3	21	3	A	8	3
5	20T51S1605	28	14	8	22	3	28	14	9	23	3	23	3	O	10	3
6	20T51S1606	26	13	8	21	3	28	14	8	22	3	22	3	O	10	3

Attainment Level Summary	Internal	External
Maximum Attainment Level	3	3
Cut-off Attainment Level (60%Internal,80%)	1.8	2.4
No.of Student >=Cut-off	6	6
% of students >=cut-off	100	100
Level Attained	3	3

Level of Attained-Internal			
% of students	<60	60-79	>=80
Level	1	2	3

Level of Attained-External			
% of students	<60	60-79	>=80
Level	1	2	3

B-Chaitanya
Faculty



Principal
Principal

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

Cherukupally (Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

CGPA CALCULATION

Marks Range Theory	Marks Range Lab	Letter Grade	Level	Grade Point
≥ 90	≥ 90	O	Outstanding	10
≥ 80 to < 90	≥ 80 to < 90	S	Excellent	9
≥ 70 to < 80	≥ 70 to < 80	A	Very Good	8
≥ 60 to < 70	≥ 60 to < 70	B	Good	7
≥ 50 to < 60	≥ 50 to < 60	C	Fair	6
≥ 40 to < 50	≥ 40 to < 50	D	Satisfactory	5
< 40	< 40	F	Fail	0
			Absent	0

B. Chaitanya
Faculty



[Signature]
Principal

PRINCIPAL
Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally, Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

ESTD : 2005

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

Faculty: Mrs. B Chaitanya, Associate Professor

Particulars	Overall Attainment
Internal Attainment Level (INT)	3
External Attainment Level (EXT)	3
TOTAL = INT * 0.4 + EXT * 0.6	3

Target level is 2.2

Target level is attained

B. Chaitanya
Faculty



[Signature]
Principal

PRINCIPAL
Avanathi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162



AVANTHI INSTITUTE OF PHARMACEUTICAL SCIENCES

Cherukupally(Village), Near Thagarapuvalasa Bridge, Vizianagaram (Dist)-531162

Regulation:PCI (R16) , Subject:Pharmaceutical Analysis Practical - I Year & Sem: I-I

Faculty: Mrs. B Chaitanya, Associate Professor

The Mapping of CO and PO on 3 point scale{high-3,Medium-2,Low-1} is:

	CO Attainment Level	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PSO-1	PSO-2
CO105.1	3	3	2	-	-	-	1	-	3	-	-	2	1
CO105.2	3	3	2	-	-	-	1	-	3	-	-	2	1
CO105.3	3	3	2	-	-	-	1	-	3	-	-	2	1
CO105.4	3	3	2	-	-	-	1	-	3	-	-	2	1
PO/PSO Weightage		12	8	0	0	0	4	0	12	0	0	8	4
PO/PSO Co-relation weightage all Cos(1-6)		36	24	0	0	0	12	0	36	0	0	24	12
PO/PSO Attainment Level		3.00	3.00	-	-	-	3.00	-	3.00	-	-	3.00	3.00

B. Chaitanya
Faculty



[Signature]
Principal

PRINCIPAL

Avanthi Institute of Pharmaceutical Sciences
Cherukupally (V), Bhogapuram Mandal
Vizianagaram Dt., - 531162