

Hands-On Workshop Report: HPLC, UV-VIS Spectroscopy, and Dissolution Apparatus

Introduction

SMES's Mahavir Institute of Pharmacy, in collaboration with Reliable's Shree Industrial Training Centre, organized a five-day hands-on workshop focusing on three essential laboratory techniques: High-Performance Liquid Chromatography (HPLC), UV-VIS Spectroscopy, and Dissolution Apparatus. The workshop aimed to provide students of Third year B.Pharm & Final year B.Pharm with in-depth knowledge and practical experience using these analytical instruments.

Workshop Objectives

- To introduce participants to the theoretical and practical aspects of HPLC, UV-VIS Spectroscopy, and Dissolution Apparatus.
- To enable participants to gain hands-on experience with the operation and maintenance of these instruments.
- To enhance participants' understanding of the applications of these instruments in pharmaceutical and research settings.

Workshop Schedule

Day 1: Introduction and HPLC

- **Morning Session:**
 - Welcome and opening remarks by the organizers.
 - Introduction to High-Performance Liquid Chromatography (HPLC):
 - Overview of HPLC principles and applications.
 - Components of an HPLC system.
 - Live demonstration of HPLC setup and calibration.
- **Afternoon Session:**
 - Hands-on practice with HPLC:
 - Sample preparation and injection.

- Method development and optimization.
- Data interpretation and troubleshooting.

Day 2: UV-VIS Spectroscopy

- **Morning Session:**
 - Introduction to UV-VIS Spectroscopy:
 - Overview of UV-VIS Spectroscopy principles and applications.
 - Components of a UV-VIS spectrophotometer.
 - Live demonstration of UV-VIS spectrophotometer setup and calibration.
- **Afternoon Session:**
 - Hands-on practice with UV-VIS Spectroscopy:
 - Sample preparation and analysis.
 - Data acquisition and interpretation.
 - Calibration and validation exercises.

Day 3: Dissolution Apparatus

- **Morning Session:**
 - Introduction to Dissolution Apparatus:
 - Overview of dissolution testing principles and applications.
 - Types of dissolution apparatus and their components.
 - Live demonstration of dissolution apparatus setup and calibration.
- **Afternoon Session:**
 - Hands-on practice with dissolution apparatus:
 - Sample preparation and testing.
 - Data collection and analysis.
 - Troubleshooting common issues.

Day 4: Application and Conclusion

- **Morning Session:**
 - Integrated exercises:
 - Participants use HPLC, UV-VIS Spectroscopy, and Dissolution Apparatus to analyze a provided sample.
 - Emphasis on data correlation and interpretation.
 - Group discussions and presentations on findings.
- **Afternoon Session:**
 - Review and recap of workshop activities.
 - Feedback and Q&A session.
 - Closing remarks and certificates distribution.

Day 5: Outcomes and Feedback

- Review and recap of workshop activities.
- Practical demonstration thought selected students
- Feedback and Q&A session.
- **Participants' Feedback:**
 - Feedback collected by google forms from participants indicated high satisfaction with the workshop.
 - Participants appreciated the practical approach and hands-on experience with the instruments.
 - Suggestions for future workshops included more advanced topics and longer duration for certain sessions.
- **Organizers' Feedback:**
 - Organizers noted active participation and engagement from attendees.
 - Overall, the workshop was deemed successful in achieving its objectives.

Conclusion

The five-day workshop successfully introduced the students of third year and final year B.Pharm to the practical aspects of HPLC, UV-VIS Spectroscopy, and Dissolution Apparatus. By combining theoretical knowledge with hands-on practice, participants gained valuable experience that will benefit them in their academic and professional careers. This collaborative effort between SMES's Mahavir Institute of Pharmacy and Reliable's Shree Industrial Training Centre set a strong foundation for future workshops and training programs.





Prepared by:

Ms. Nikita Rathod

Principal