



# RBVRR WOMEN'S COLLEGE OF PHARMACY

Barkatpura, Hyderabad – 500027(TS), India  
(Approved by AICTE, PCI & Affiliated to Osmania University)  
Recognized under section 2(f) of UGC Act 1956



## TWO WEEK CERTIFICATE COURSE ON “ADVANCE ANALYTICAL TECHNIQUES”

October 3<sup>rd</sup> - 13<sup>th</sup>, 2023

**INAUGURAL SESSION :**

**Mr.A.Venkata Rao**

**Manager, LC-MS  
Department,  
Aurobindo Pharma  
Ltd, Hyderabad**



**Register before 30<sup>th</sup> September,  
2023**

**Registration Fee- Rs 1000/-**

**Link for Registration**

<https://forms.gle/2QX93pnTngKzbiP>



**Payment  
Phone pay  
number:-  
9494800885**



**For Queries:  
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8919889059  
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## **List of Speakers**

### **1.Mr.A.Venkata Rao**

**Manager, LC-MS department,  
Aurobindo Pharma Ltd, Hyderabad.**

### **2.Mr.R.Jagadeesh**

**Scientist –IV, FAR&D,  
Aurobindo Pharma Ltd, Hyderabad.**

### **3.Mr.Y.Ramakoti Reddy**

**Technical Head,  
Avasya Labs, Hyderabad.**

### **4.Mr.M. Soundarapandian**

**Assistant Director  
Clearsynth Pvt Ltd, Hyderabad**



**Two Days  
hands on  
training at  
Industry**

### **5. Mr.B.Sreekanth**

**AGM, Head-Quality Assurance  
Caponex Labs Pvt Ltd, Hyderabad.**

### **6.Dr.G.Jithender Reddy**

**Sr.Scientist, NMR Division  
CSIR-IICT, Tarnaka,Hyderabad.**

### **7.Ms.Swathi Undati**

**Sr.Executive, AR&D  
AET Labs Pvt Ltd,Hyderabad.**

### **8. Dr.K.Bhavyasri**

**Associate Professor & Head,Dept of  
Pharma Analysis, RBVRR Women's  
college of Pharmacy, Hyderabad.**



College Code: 1706

# RBVRR WOMEN'S COLLEGE OF PHARMACY

# 3-4-343, Barkathpura, Hyderabad - 500 027 (T.S), India

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EAMCET Code: RBVW | PGCET Code: RBVW1

www.rbvrrwcp.org | Email: rbvrrwcoph@rediffmail.com & rbvrrwcp2006@gmail.com

Value Added Course		
Course: Advance Analytical Techniques		
Code:AATCC001	Credits:2	Total No. Of Hours:30

The aim of conducting this certificate course is to impart advanced knowledge on the principles and instrumentation of spectroscopic and chromatographic hyphenated techniques. This also emphasizes on theoretical and practical knowledge on modern analytical instruments that are used for drug testing in Analytical and Bioanalytical laboratories

**Objectives:-Objectives:-** The Course Program in Advance Analytical Techniques is designed to provide participants with a comprehensive understanding of Analytical tools available and their advancements for the analysis of pharmaceutical products

## SYLLABUS

Unit1	Spectroscopic Techniques and their Advancements	8 Hours
<p><b>NMR Spectroscopy:-</b>Quantum numbers and their role in NMR,Principle, Instrumentation, Solvent requirement in NMR,Relaxation process, NMR signals in various compounds,Chemical shift, Factors influencing chemical shift, Spin-Spin coupling, Coupling constant, Nuclear magnetic double Resonance,Spin Spin and spin lattice relaxation phenomenon.</p> <p>1D- NMR and 13CNMR.</p> <p><b>Mass Spectroscopy:-</b>Principle, theory, instrumentation of mass spectrometry, different types of Ionization Techniques like Electron Impact, Chemical, Field, FAB and MALD, APCI, ESI, APPI, Mass fragmentation mechanism and its rules, meta stable ions, isotopic peaks and applications of mass spectrometry.</p>		

<b>Unit2</b>	<b>Chromatographic Techniques and their Advancements</b>	<b>6 Hours</b>
Principle, Instrumentation and Pharmaceutical applications:- HPLC,UPLC, Nano LC, HILIC, GC, SFC		
<b>Unit3</b>	<b>Hyphenated Techniques</b>	<b>6 Hours</b>
Principle, Instrumentation, Interfaces, Pharmaceutical applications:- LC-MS,GC-MS,ICP-MS, Tandem Mass systems		
<b>Unit4</b>	<b>X-ray Crystallography</b>	<b>4 Hours</b>
Production of X rays, Different X ray methods, Bragg's law, Rotating crystal technique, X ray powder technique, Types of crystals and applications of X-ray diffraction		
<b>Unit5</b>	<b>Qualification of Analytical Instruments</b>	<b>6 Hours</b>
NMR, MS,HPLC,UPLC,X-ray diffraction		

**Advance Analytical Techniques Course Outcomes:**

**After completion of this course**

- 1) The students will get adequate knowledge on recent advancement and basics of NMR and MS.
- 2) Students will know the principle and advanced applications of Nano LC, UPLC and HILIC.
- 3) Students aware of different hyphenated techniques like ICP-MS, LC-MS GC-MS etc.
- 4) Students are permitted to know in detail about the X- ray crystallography methods and application.
- 5) Students are familiar with the methods used for calibration and validations of Instruments

**Note:- Certificate will be issued based on the performance in the examination conducted at the end of the course**

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