

**DEPARTMENT OF PHARMACEUTICAL SCIENCES**  
**SAURASHTRA UNIVERSITY, RAJKOT**

<b>CREDITS</b>	<b>TOTAL LEARNING HOURS</b>	<b>TOTAL MARKS</b>	<b>PASSING MARKS</b>	<b>COURSE COMPONENT</b>
<b>02</b>	<b>30</b>	<b>50</b>	<b>18</b>	Value Added Course (VAC)

**VALUE ADDED COURSE**

**COURSE NAME: Training for handling of Sophisticated Analytical Instruments**

**Course Objectives:**

This course will discuss about basic concepts of

1. Discuss the basic principle and working of the instruments.
2. Interpret the analytical data from spectra.
3. Analyse various drugs in single and combination dosage forms.
4. Analyse herbal drugs/crude AYUSH drugs and their bio -actives. (Phytochemical analysis – qualitative and quantitative)
5. Hands-on-training sessions on LC-MS and NMR, HPTLC and GC- MS instruments

**Course Outcomes:**

Upon successful completion of this course, the students will be able to

1. Knowledge of a range of traditional analytical methods.
2. Fundamental concepts and operation of instruments including GC-MS/MS, LC-MS/MS, HPTLC, Preparative HPLC, FTIR and DSC.
3. Analytical data interpretation for spectroscopy and chromatography
4. These techniques can be used to conduct both qualitative and quantitative analyses of medicines and phytochemicals.
5. Skill development in the operation, Trouble shooting & maintenance of sophisticated Analytical instruments.

## **About Course**

This certificate course aims to equip participants with the skills required to handle and operate sophisticated analytical instruments, which are imperative in the present industrial environment. The training provides a sound background of the basic principles of analysis, an understanding of the instrumentation involved and the opportunity to become familiar with practical techniques.

## **Instruments Covered/Course Content**

Ultra-Violet (UV) Spectrophotometer, Fourier transformed Infrared (FT-IR), Spectrophotometer, High Performance Thin Layer Chromatography, High Pressure Liquid Chromatography (HPLC), Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS), Gas Chromatography Tandem Mass Spectrometry (GC-MS/MS), Differential Scanning Differential Scanning Calorimeters (DSC)

**Note:** For all instruments, basic theory, equipment operation protocols, and troubleshooting have been addressed.

## **Eligibility**

The minimum eligibility criteria for Certificate course on Training of Sophisticated Analytical Instruments include either of the following:

- Graduation in Pharma/ Medical/ Chemistry/ Biomedical/ Biotechnology/ Microbiology/ Basic Science
- Students in the final year of the courses as above are also eligible to apply
- PG Students/ Research Scholars in the field as mentioned above are also eligible.
- Candidates with work experience in Sophisticated Analytical Instruments Handling are also be eligible for this program.

## **Course structure**

- **Duration:** 30 Hrs  
Theory and Practical sessions will be conducted as per predefined schedule.
- **Batch:** Max. 20

**Course fees:** 300/- per candidate

**Why to join Training Program?**

This program is designed to provide comprehensive training in analysis of pharmaceutical products using sophisticated analytical instruments. Pharmaceutical industry demands human resources well trained to handle sophisticated analytical instruments. A person undertaking a certificate course on Training of Sophisticated Analytical Instruments is assured of great opportunities for a job in pharmaceutical industries as Trained Technician.

**Certification**

Certificate will be awarded to successful students who will attend at least 80% of scheduled activities and pass with minimum criteria.