

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**GRADUATE SCHOOL OF PHARMACY**

**offered**

**Certificate Course**

**in**

**Training of Sophisticated Analytical Instruments Handling**



Graduate School of Pharmacy,  
Gujarat Technological University,  
K-6, Near Polytechnic campus, Gandhinagar -382028

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## Certificate course on

### Training of Sophisticated Analytical Instruments Handling

<b>1.</b>	<b>Background</b> <p>The Gujarat Technological University (GTU) has established its Constituent PG School named Graduate School of Pharmacy (GSP) in 2017 at GTU Gandhinagar Campus. Currently, GSP is running M.Pharm courses in Pharmaceutical Regulatory Affairs (PRA), Pharmaceutical Quality Assurance (PQA) and Pharmaceutics. The GTU has developed the advance research facilities at the Graduate School of Pharmacy to cater the need of Students, Faculties and Industries.</p>				
<b>2.</b>	<b>About Course</b> <p>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.</p>				
<b>3.</b>	<b>Objectives</b> <ol style="list-style-type: none"><li>1. To impart fundamental practical skills in advanced instrumental analysis.</li><li>2. Real sample analysis and hands-on training with various instruments such as UV, FT-IR, HPLC, and HPTLC, UHPLC- MS/MS and among others.</li><li>3. To train students regarding Cleaning, calibration, assay, troubleshooting and maintenance of the instruments.</li><li>4. To equip students with professional skills necessary to work in industry.</li></ol>				
<b>4.</b>	<b>Expected learning outcome / skills</b> <ol style="list-style-type: none"><li>1. Students should able to understand and prepare protocols for analysis and SOP for various instruments.</li><li>2. They should be able to use SOPs to do actual sample analysis on instruments.</li><li>3. The students are able to prepare solutions such as Primary &amp; working standard solution, test solutions, and buffers, among other things.</li><li>4. They are expected to use sophisticated instruments to demonstrate real analysis.</li><li>5. They should demonstrate troubleshooting abilities during actual analysis.</li></ol>				
<b>5.</b>	<b>Instruments Covered/Course Content</b> <table border="1"><thead><tr><th>Instrument Name</th><th>Make and Model</th></tr></thead><tbody><tr><td>Ultra-Violet (UV) Spectrophotometer</td><td>UV-1900 (Shimadzu)</td></tr></tbody></table>	Instrument Name	Make and Model	Ultra-Violet (UV) Spectrophotometer	UV-1900 (Shimadzu)
Instrument Name	Make and Model				
Ultra-Violet (UV) Spectrophotometer	UV-1900 (Shimadzu)				

	Fourier transformed Infrared (FT-IR) Spectrophotometer	IR Spirit (Shimadzu)
	High Performance Thin Layer Chromatography with Mass Detection (HPTLC-MS)	USP Compliance Model (Camag)
	High Pressure Liquid Chromatography (HPLC)	Agilent 1260 Infinity II HPLC (600 bar)
	Ultra-High Pressure Liquid Chromatography (UHPLC)	Agilent 1290 Infinity II HPLC (1300 bar)
	Liquid Chromatography Tandem Mass Spectrometry (LC-MS/MS)	Agilent 6470A QQQ

<b>6.</b>	<p><b>Eligibility</b></p> <p>The minimum eligibility criteria for Certificate course on Training of Sophisticated Analytical Instruments include either of the following:</p> <ul style="list-style-type: none"> <li>➤ Graduation in Pharma/ Medical/ Chemistry/ Biomedical/ Biotechnology/ Microbiology/ Basic Science</li> <li>➤ Students in the final year of the courses as above are also eligible to apply</li> <li>➤ PG Students/ Research Scholars in the field as mentioned above are also eligible.</li> <li>➤ Candidates with work experience in Sophisticated Analytical Instruments Handling are also be eligible for this program.</li> </ul>
<b>7.</b>	<p><b>Course structure</b></p> <p><b>Duration: 3 Months (Weekend course)</b></p> <p><b>Theory: 18 Hours</b></p> <p><b>Practical: 48 Hours</b></p> <p>Theory and Practical sessions will be conducted on weekends as per predefined schedule.</p> <p><b>Batch: Max. 15</b></p>
<b>8.</b>	<p><b>Course fees: 15000/- per candidate</b></p>
<b>9.</b>	<p><b>Why to join Training Program?</b></p> <p>This programme 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.</p>
<b>10.</b>	<p><b>Learning outcome</b></p>

	<p>At the end of the Program participants would have strong understanding of following areas</p> <ul style="list-style-type: none"><li>• Theory and Methods</li><li>• Method development and Validation</li><li>• Operating the instrument</li><li>• Qualification, Calibration and validation of Instrument</li><li>• Trouble shooting and Maintenance of instrument</li></ul>
11.	<p><b><u>Evaluation:</u></b> Through different modes like submission of assignments, Mid-course and end course examination.</p> <p><b><u>Certification:</u></b> Certificate will be awarded to successful students who will attend at least 80% of scheduled activities will qualify the examination.</p>