

**School of Chemistry  
Faculty of Sciences  
University of the Punjab, Lahore  
Course Outline  
Semester-VII**



<b>Programme</b>	BS (Chemistry)	<b>Course Code</b>	<b>Chem-400</b>	<b>Credit Hours</b>	3
<b>Course Title</b>	<b>Fieldwork</b>				
<b>Course Introduction</b>					
<p>This course provides BS Chemistry students a hands-on experience in sample collection, preparation, and its analysis through fieldwork. Students will engage them in real-world applications by visiting various sectors such as industries, laboratories, and workshops. The course emphasizes practical skills in sample collection, pretreatment methodologies, instrumentation, and method validation. It culminates in the preparation of a comprehensive report based on the fieldwork performed.</p>					
<b>Learning Outcomes</b>					
<p>By the end of this course, students will have learnt how to:</p> <ol style="list-style-type: none"> <li>1. Conduct a comprehensive literature review related to sample collection and analysis.</li> <li>2. Select appropriate sites and plan fieldwork activities effectively.</li> <li>3. Collect and prepare various types of samples following standard protocols.</li> <li>4. Utilize advanced instrumentation and methodologies for sample analysis.</li> <li>5. Validate analytical methods and ensure the accuracy and reliability of results.</li> <li>6. Compile and present their findings in a well-structured scientific report.</li> </ol>					
<b>Course Content</b>				<b>Assignments/Readings</b>	
<b>Week 1</b>	<b>Literature Review, Site Selection, and Planning</b> <ul style="list-style-type: none"> <li>• Review of relevant literature on sample collection and preparation</li> <li>• Selection of appropriate field sites</li> <li>• Planning and proposing fieldwork activities</li> </ul>				
<b>Week 2</b>	Continues				
<b>Week 3</b>	Continues				
<b>Week 4</b>	Continues				
<b>Week 5</b>	<b>Sample Collection and Preparation / Synthesis</b> <ul style="list-style-type: none"> <li>• Techniques for collecting various types of samples (medicinal plants, food, environmental etc.)</li> </ul>				

	<ul style="list-style-type: none"> <li>• Methods of sample preservation and transportation</li> </ul> <p>Initial sample preparation techniques (drying, grinding, homogenization etc.)</p>	
<b>Week 6</b>	Continues	
<b>Week 7</b>	Continues	
<b>Week 8</b>	Continues	
<b>Week 9</b>	<b>Learning Relevant Methodologies for Analysis</b> <ul style="list-style-type: none"> <li>• Sample pretreatment methodologies (extraction, filtration, digestion etc.)</li> <li>• Method validation (accuracy, precision, sensitivity, specificity etc.)</li> <li>• Hands-on training in advanced laboratories and workshops</li> </ul>	
<b>Week 10</b>	Continues	
<b>Week 11</b>	Continues	
<b>Week 12</b>	Continues	
<b>Week 13</b>	<b>Writing Up a Report on the Performed Work</b> <ul style="list-style-type: none"> <li>• Structuring and writing a scientific report</li> <li>• Presentation on the performed fieldwork</li> <li>• Peer review and evaluation of reports</li> </ul>	
<b>Week 14</b>	Continues	
<b>Week 15</b>	Continues	
<b>Week 16</b>	Continues	
<b>Assessment</b>		
Evaluation of the submitted report/working paper by supervisor/supervisory committee		