

## Master

### M.Sc. in pharmaceutical sciences (Pharmaceutical Analytical Chemistry)

1. Duration of program	Minimum of two years
2. Language of study	English
3. Academic reference standards	-National Academic Reference Standards (NARS) for postgraduate studies, 1 <sup>st</sup> Edition, February 2009 ( <i>National Authority for Quality Assurance and Accreditation</i> ).
4. Aims of the programme(s)	<p>The MSc program in pharmaceutical <b>Analytical Chemistry</b> aims to</p> <ul style="list-style-type: none"><li>• Demonstrate competence in advanced knowledge and understanding of principles in theory and practice of pharmaceutical analytical sciences.</li><li>• Discuss current knowledge in the area of spectroscopic, chromatographic, electrochemical techniques and applications relating to analytical chemistry <b>or</b> pharmaceutical analysis.</li><li>• Provide industrially relevant courses in which post-graduates can easily relate their current work and/or experience to their studies to benefit both in quality control and validation of analytical methods.</li><li>• equip post-graduates with key problem-solving, practical , computing and information technology skills in preparation for their careers in a variety of work environments;</li><li>• provide the skills required for self-management and autonomy in the planning, organization and conduct of an independent research project;</li><li>• provide post-graduates with further opportunities to develop their written and oral communication skills;</li><li>• Apply analytical and critical thinking in reviewing literature.</li><li>• Exhibit professionalism and the highest ethical standards.</li><li>• Offer the opportunity for post-graduates to express originality and creativity in the quest for new knowledge, the application of current knowledge to new situations or the analysis of knowledge from a novel standpoint.</li><li>• Provide a broad and balanced training in laboratory and research skills.</li><li>• Foster the ability to work independently and as part of a group, and to develop presentation skills, both written and oral.</li></ul>

Name of course	Credit Hour	Description
<b>0907702</b> Advanced chromatographic methods of analysis I	<b>Lectures: 3</b> <b>Seminars / Tutorial: --</b> <b>Practical: --</b> <b>Others: --</b> <b><u>Total: 3</u></b>	This course aims to: -Give post-graduates a more specified knowledge on HPLC and HPTLC techniques and their applications in pharmaceutical analysis, environmental analysis and drug analysis in biological fluids. -equip them also with key problem-solving in these chromatographic techniques -Apply the specialized knowledge and integrate them with related knowledge in professional practice.
<b>0907703</b> Advanced Electrochemical Methods of Analysis	<b>Lectures: 3</b> <b>Seminars / Tutorial: --</b> <b>Practical: --</b> <b>Others: --</b> <b><u>Total: 3</u></b>	This course aims to: -Demonstrate competence in knowledge and understanding of principles in theory and practice of most common electrochemical methods of analysis. -Identify appropriate electrochemical methods for certain chemical analysis. -Effectively communicate results of scientific inquiries orally and in writing. -provide the skills required for self-management and autonomy in the planning, organization and conduct of an independent research project -Apply analytical and critical thinking in reviewing literature. -Exhibit professionalism and the highest ethical standards.
<b>0907701</b> Advanced spectroscopic methods of analysis	<b>Lectures: 3</b> <b>Seminars / Tutorial: --</b> <b>Practical: --</b> <b>Others: --</b> <b><u>Total: 3</u></b>	This course aims to: -Demonstrate competence in knowledge and understanding of principles in theory and practice of most common spectroscopic methods of analysis. -Identify appropriate spectroscopic methods for

		<p>certain chemical analysis.</p> <ul style="list-style-type: none"> <li>- Effectively communicate results of scientific inquiries orally and in writing.</li> <li>- Design experiment, implement analysis using the relevant chemical literature, process and analyze the data and, effectively, communicate results orally and in writing.</li> <li>- Cultivate a professional attitude and develop skills relative to communication, team work, time management and responsibility for individual learning.</li> </ul>
<p><b>0907704</b> Quality control of pharmaceutical products and validation of analytical methods.</p>	<p><b>Lectures: 3</b> <b>Seminars / Tutorial: --</b> <b>Practical: --</b> <b>Others: --</b> <b><u>Total: 3</u></b></p>	<p>This course aims to:</p> <ul style="list-style-type: none"> <li>-Provides postgraduates with basic and advanced knowledge in the area of quality control and validation of analytical methods.</li> <li>-Equip post graduates with skills and experience to benefit across their studies and / or their current work. Based on the cited theoretical knowledge, the acquisition of analytical research skills for the control of bulk products and of finished medicament preparations</li> </ul>

