New Program Proposal

Analytical Chemistry, Graduate Certificate

The graduate certificate in analytical chemistry is a 12-credit-hour program. It provides the skills and training necessary to advance in growing areas of analytical chemistry, with fields such as environmental sample testing, or verifying the quality and safety of food as well as pharmaceutical and cosmetic products. Analytical chemists also work in clinical areas, supporting the development of assays needed for disease diagnosis, assuring compliance with environmental and other regulations, or supporting the legal process. The certificate requires three analytical chemistry lecture courses. Research credits taken towards the certificate in the Department of Chemistry and Biochemistry must be completed in a research group using experimental analytical techniques. Research credits can be taken in the same or in different research groups. All students must take the three required courses subject to the Graduate School regulations.

A minimum of three of the courses must be taken at UMSL. Research credits must be taken at UMSL. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the Department of Chemistry and Biochemistry.

Certificate applicants must meet the general University of Missouri-St. Louis Graduate School admissions requirements to be admitted to the Certificate program. Students admitted to the Chemistry M.S. program are automatically eligible to pursue the Certificate; however, they must apply separately to the Certificate program. Students must maintain a minimum GPA of 3.0 to remain in the Certificate program. The certificate is awarded after completion of the 12 credit hours of courses listed below. Students must apply to be awarded the Certificate. Courses taken while enrolled as an undergraduate may not be repeated nor will they count towards the Certificate.

This 12-credit-hour certificate program also counts toward the 30-credit-hour Master of Science in Chemistry degree program requirements. Students may choose to combine this certificate with other courses and/or chemistry Certificates to obtain the Master of Science in Chemistry degree.

Required Courses		
CHEM 5212	Advanced Instrumental Analysis	3
CHEM 5652	Spectroscopic Identification of Organic Compounds	3
CHEM 5294	Special Topics in Analytical Chemistry	3
Electives Courses		3
Choose a total of 3 credit hours from the following		
CHEM 5772	Advanced Physical Biochemistry	
CHEM 6905	Graduate Research in Chemistry [1]	
CHEM 4733	Biochemistry Laboratory	

[1] If CHEM 6905 is chosen, the research project must make significant use of experimental analytical techniques.

Rationale	The greater St. Louis area is a major chemical industry center and is home of government laboratories. Analytical chemists work in a variety of industries such as pharmaceutical industry, government laboratories, as well as in the food, agriculture, and consumer sectors. Industries in the area need employees who are well-trained in analytical chemistry. Students with the analytical chemistry certificate will find employment opportunities in the St. Louis area or will be able to advance their careers within their existing employment contexts. The certificate will increase UMSL's economic impact on the St. Louis metropolitan region.