CHEM 305 Survey of Chemical Analysis
Credit Hours: 3
Scheduled hours per week
Lecture: 3
Lab: 0
Other: 0

Catalog Course Description: A survey of analytical methods in chemistry, including volumetric analysis, gravimetric analysis, solution equilibria, spectrophotometry, separations, and electrochemical methods. Chromatographic and spectroscopic methods of instrumental analysis may also be included.

Pre-requisites: CHEM 116

Co-requisites: None

Course Learning Outcomes:
1. Students will demonstrate an understanding of basic theoretical and experimental concepts in chemical analysis.
2. Students will apply mathematical methods in the solution of analytical problems.
3. Students will demonstrate an ability to collect and analyze experimental data.
4. Students will use effective written and oral communication methods to discuss course concepts.

Topics to be studied:
- Volumetric analysis
- Gravimetric analysis
- Solution equilibrium and buffers
- Spectrophotometry
- Chemical separations
- Electrochemical analysis
- Chromatography (optional) Spectroscopy (optional)

Relationship of Course to Program or Discipline Learning Outcomes:

Relationship of Course to Science Learning Outcomes:	
Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.	x
Students exhibit the basic safety-related rules and regulations of working in the lab.	
Students be able to recount the basic safety tenants associated with a specific scientific discipline.	
Students will become proficient at Science Writing.	x
Students will recognize and identify the applications of their specific discipline in the 'real world.'	x
Students will accurately recount important milestones in the history of scientific inquiry in their discipline.	

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Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	x
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	x
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
5/3/2016	

Special requirements of the course:

Additional information:

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