

WELCH CENTER FOR GRADUATE AND PROFESSIONAL STUDIES
GOUCHER COLLEGE
ADVANCED PLACEMENT SUMMER INSTITUTE - ONLINE
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Syllabus

AP 512.300 Chemistry - Preparing Students for Advanced Placement® Chemistry

Monday, July 11 to Thursday, July 14, 2022 (8:30 a.m. - 4:00 p.m. EDT); Friday, July 15, 2022 (8:30 a.m. - 12:30 p.m. EDT)

This online, methodology course surveys the basic structure and content necessary for teaching an Advanced Placement Chemistry course. Chemistry topics such as equilibrium, kinetics, and “how to” problem solving are presented. Class size, student selection, textbooks and labs also are addressed. Special attention is paid to teaching strategies, the AP exam, and its grading. Some lab experiments suitable for AP classes are incorporated into the course. Participants receive examples of past AP exams, appropriate tests, worksheets, and lab experiments.

This institute will provide an opportunity for high school AP Chemistry teachers to observe significant teaching demonstrations, perform experimental procedures using computer interfaced equipment, and to review with presenters a variety of topics covered in AP Chemistry. Teachers will have the opportunity to discuss the methodology of converting typical cookbook labs into guided inquiry labs.

Participants will have the opportunity to perform several lab exercises that align with the College Board redesign. Best practices will be discussed. For each of the labs, an AP published related lab will be provided and reviewed. Information about the requirements for the AP Chemistry Course Audit will be shared.

Please note that this course is a methodology class for teachers. Content for teaching will be provided for study in the evening.

All participants will have access for the workshop to Sequential Course Curriculum, Links to numerous Sequenced Online Applets, Lab Activities and Class Demonstrations Sequenced by Topic, Links to numerous sequenced curriculum video clips, Class Notes and HW Samples, Various PowerPoint's, Overhead Notes, Handouts Organized by Topic, Student Study Guidelines and Data Acquisition Software.

Instructor: Professor Marsilio Mark Langella

marsilio.langelle@goucher.edu– please state “Goucher AP Chemistry” in the subject line.

Tentative Schedule - Summer 2022

Typical Schedule

- Morning session 1: 8:30AM – 10:00AM Synchronous and Breakout rooms (1.5 hrs.)
- Morning break: 10:00AM (15 Minutes)
- Morning session2: 10:15AM – 12:00PM Synchronous and Breakout rooms (1.75 hrs.)
- Lunch: 12:00PM – 12:45PM (45 Minutes)
- Afternoon session 1: 12:45PM – 2:00PM Synchronous and Breakout rooms (1.25 hrs.)
- Afternoon session 2: 2:00PM – 4:00 PM Synchronous and Breakout rooms (2.0 hrs.)

Day 1 – Focuses on Networking, Distribution of Resources, Equity and Access, Syllabus design, Exam design, Multiple choice design

Day 2-Transitioning to Guided Inquiry Experiments, Guided Inquiry Experiments,

Day 3 Kinetics and Equilibrium

Day 3– Acid Base Chemistry and Electrochemistry

Day 5– Released Exam Questions Review, Participant Free Response Lessons

Required Topic 1 – Course and Exam Description (CED) (2 hours): Discuss each section of the CED and make connections to the Curricular Requirements

Required Topic 2 – Course Introduction (1 hour): Outline the instructional plan by Unit and Topic in an academic calendar

Required Topic 3 – AP Classroom (3 hours): Discuss examples of how AP Classroom can be utilized to develop each skill/practice using example student data provided by the College Board and develop lesson plans that reinforce topic and skill connections

Required Topic 4 – Assess and Reflect (1 hour): Practice interpreting data within the Instructional Planning Report to identify student strengths and weaknesses and reflect on implications for instruction

Required Topic 5 – Strategies and Pedagogical Tools (3 hours): Identify and explain various instructional strategies and tools, in addition to AP Classroom, that teachers can incorporate in their lesson plans to teach the content and skills in the Course and Exam Description

Goals/Objectives

The institute will provide information and materials to participating teachers that will:

- **enhance your classroom presentations in many areas of the AP Chemistry program**
- **encourage teachers to use methods in their classrooms that involve new demonstration ideas**
- **expand the scope of your laboratory activities using computer interfaced equipment**
- **provide a forum for discussion and sharing of their materials and ideas**
- **refine your skills in examination preparation**
- **Assignments for the workshop will be the submission of a detailed lab write ups and calculations of problems assigned during the lab activities.**
- **Each Participant will be asked to present AP problems to all the participants**

KEY TAKEAWAYS

Understanding the Course

- 1.A AP courses focus on building conceptual understandings through the teaching of linked learning objectives and essential knowledge statements, all contextualized around course-specific Big Ideas.**
- 1.B Building understanding and teaching for transfer require the application of content in new authentic, relevant, and unfamiliar contexts and scenarios.**
- 1.C The course framework defines the scope of the course and specifies what students must know and be able to do on the AP Exam.**

Planning the Course

- 2.A Sequencing, pacing, and scaffolding are essential for building students' understanding and their ability to transfer and apply knowledge and skills to new contexts.**
- 2.B Helping students develop mastery of the course skills requires careful planning to sequence skills in a developmentally appropriate way so that students master prerequisite skills before being asked to complete more complex tasks.**
- 2.C The needs of all willing and academically prepared students should be considered when planning, sequencing, pacing, and scaffolding the course.**

Teaching the Course

- 3.A Teachers need a deep understanding of content and its applications to adapt their instructional strategies to address the different needs of students.**
- 3.B Utilizing effective instructional strategies, like debriefing, helps develop the course skills and content knowledge.**
- 3.C Students need multiple opportunities, in different settings or modes, to practice skills to develop mastery over time.**
- 3.D Creating community within a classroom through collaborative discourse and shared experiences is essential to building student confidence and fostering student progress.**

Assessing Student Progress and Understanding

- 4.A Assessments, instruction, and resources should be aligned to learning goals and matched to performance standards.**
- 4.B Students should be progressively challenged, just beyond where they are, to apply their knowledge and skills in different contexts to deepen their understanding.**
- 4.C Learning requires time, practice, and regular feedback.**
- 4.D Understanding is earned over time.**

Becoming a Member of the AP Community

5.A The curricular requirements ensure that all AP course instructors teach a college-level course.

5.B Professional networking can provide teachers with opportunities to discuss teaching strategies, share resources, and connect with each other.

5.C At the start of the year, teachers and students will complete a short digital activation process that will allow them immediate access to classroom resources.

Assignments/Requirements

Required Texts/Reading

At the workshop, I will distribute to each of participants a Digital Copy of the grading standards for the recent free-response questions as well as a compilation of free-response questions from previous years. Participants will be assigned AP problems for homework. Lab data and calculations will be collected and used as part of your assessment.

Content Support

Graduate Programs in Education Outcomes:

- GPE001: Knowledge - Theory: Apply knowledge of psychological and educational theory, research, and/or philosophy related to the area of specialization or certification.
- GPE002: Knowledge - Assessments: Demonstrate understanding and use of the types of assessments appropriate to the area of specialization or certification.
- GPE005: Skills - Theory: Demonstrate the ability to incorporate theory and research into practice related to the area of specialization.
- GPE006: Skills - Data: Demonstrate the ability to gather appropriate data and use data in problem analysis and decision-making related to the area of specialization.
- GPE007: Skills - Problem Solving: Use problem solving/critical thinking strategies appropriate to the area of specialization.
- GPE008: Skills - Reflection: Use reflective practice within the area of specialization.
- GPE009: Skills - Communication: Demonstrate effective communication and presentation skills related to the area of specialization.
- GPE010: Skills - Technology: Use a variety of technologies appropriate for working in the area of specialization.
- GPE012: Dispositions - Diversity: Demonstrate positive dispositions toward diversity and equity.
- GPE013: Dispositions - Professionalism: Demonstrate professionalism in one's demeanor, behavior, conduct, decision-making, and interactions with colleagues.

Bibliographical references and complimentary textbooks will be shared in class. Please plan to share activities, websites, and strategies during the institute. All submissions will be compiled and distributed to all.

Requirements for Graduate Credit – all documents must be submitted electronically at the end of the institute or within two weeks of the completion of the institute. Use the email address listed above.

- Create an outline of how this CED will change the content of your course with reference to the Big Ideas of AP Chemistry
- Creation of an action plan for implementation of new instructional strategies for your course next year.
- Evaluation of the course.
 - What did you like?
 - What did you not like?
 - What should I do differently next time?

***If you are taking the course for credit, no absences are permitted.
You must attend full time on all Five days to receive graduate credit.***

Instructions to receive a copy of Credits Earned after the completion of the course:

Grading and Transcript Information

- Goucher College does not issue grade reports. You can obtain your grade approximately 3 weeks after concluding the course by going to the myGoucher website (myGoucher) and following the prompts to receive your grade. If you have misplaced your password, please contact the help desk (helpdesk@goucher.edu) and they will help you through this procedure.
- If you need a paper copy of grades for tuition reimbursement, you will need to request a transcript in writing. You can fax your request to 410-337-6504 or mail to:

Goucher College
Registrar's Office
1021 Dulaney Valley Road
Baltimore, MD 21204

There is no charge for this request. Please allow 3-5 working days to process. To access the transcript request form, please go to [Transcript-Request.pdf \(goucher.edu\)](#).

Questions? Please call the Welch Center Office at 410-337-6200.