Los Angeles Pierce College Chemical Technology & Industrial Quality Control Technicians Advisory Committee Meeting

Minutes

Date: Monday, September 29, 2025

Time: 1:00 – 2:00 pm

Zoom Meeting ID: 394 324 5212

1. Call to Order

   Call to order at 1:05 pm (Benny)

2. Welcome and Introduction

   The primary objective of both the Certificate of Achievement and Associate Degree in Chemical Technology and Industrial Quality Control Technicians is to provide students with a solid foundation in chemistry principles and essential laboratory techniques, preparing them for entry-level positions as laboratory technicians.

   Looking ahead, our long-term vision is to build a strong cohort of program completers that will eventually support our proposal for a Baccalaureate Degree Program (BDP). This future BDP would include upper-division coursework in specialized areas such as:

   a. Nanotechnology
   b. Advanced instrumentation
   c. Chemical analysis
   d. Automation
   e. Other emerging chemical technology fields align with the BECAP

3. Discussion Items

   a. Coursework for Chemical Technology Certificate of Achievement and Associate Degree

      Members reviewed the course description (see Appendix 1) and syllabus of each course, which can be found in this Google Drive.

Billy asked to confirm about the course number Biotech 002 is Biotechnology 1.

Rachael mentioned that the submitted coursework are well thought out and will open the possibility of transfer pathways typically lacking in most CTE programs. Rachael suggested creating an Industrial Quality Control Technicians Certificate of Achievement and Associate Degree.

Dean Mon Khat supported the ideas to create both Chemical Technology and Industrial Quality Control Technicians Certificates of Achievement and Associate Degrees. He envisioned that Chem Tech program will be more universal and applicable across many disciplines, and the Industrial Quality Control Technician will be more specific per scripted.

Aron, Yanwei, Cameron and Sara also supported the proposed coursework for the Certificates of Achievement and Associate Degrees for both programs.

Herman thanked Benny and Aron trying to help boost the academic sciences to industry link as a whole with the integration of these certificate and degree programs. He likes that the program has a blend of solid foundational classes in chemistry and practical experience classes such as the biotech classes and statistics to interpret data. He supported the establishment of the Chemical Technology and Industrial Quality Control Technician Certificate of Achievement and Associate Degree.

4. Action Items

a. Coursework for Chemical Technology Certificate of Achievement and Associate Degree

Motion: Billy Second: Aron

Aye: 11, Nay: 0, Abstain: 0, **Motion passed.**

b. Coursework for Industrial Quality Control Technicians Certificate of Achievement and Associate Degree

Motion: Rachael Second: Herman

Aye: 11, Nay: 0, Abstain: 0, **Motion passed.**

5. Other Discussion Items

- Benny explained the stackable certificate program, and how it leads to AS degree.
- For the BDP, Rachael recommended to include capstone classes where students have to create SOPs from the water and waste water treatment standards, complete and analysis and present their findings. She also recommended a class like ELACs Chem 201 or like LATTCs Chem Tech 132/133 - if you have access to the instrumentation, which is focused on using and troubleshooting issues with HPLC, GC-MS, FTIR, NMR, AA, pH meters, conductivity meters is what I think is missing from your program.
- Herman recommended for the instrumentation course to include HPLC, Mass Spec, GCMS, Fluorescence plater, NMR, FTIR, DSC, Karl Fischer titrator, UV-Vis, etc. If these equipment aren't readily available, learning how to interpret their results would be great practice.
- Herman also suggested to increase exposure of electronic lab notebook, LIMS systems, in silico experimentation, software as a service (this could be a whole class in terms of what types of services there are available and just being able to index, or understand the breath of what is available is an extremely valuable skill).
- When we teach lab, we also need to focus on basic organization skills, which is the most important soft skill required for the industry. Just knowing how to keep your lab area organized and neat, being able to organize your data, manage projects, and be an active contributor to workflow through thoughtful consideration of project objectives rather than basic execution would be a highly valuable skill.
- Herman also mentioned that regulatory and QA compliance (cGxP) is another valuable and integral part of a lot of chemtech industries and providing knowledge and insight into these frameworks is very useful if able to integrate.
- Finally, we need to find internship opportunities for students in industry to bridge the classroom to industry gap. if there is a way to integrate that into your curriculum for credit, that would be very impactful.

6. Adjournment

Meeting adjourned at 1:58 pm (Benny)

Appendix 1

Subject Name and Number	Title	Prerequisites or Corequisites	Units
CHEM 101	**General Chemistry I**	**CHEM 060 (Intro Chem) or equivalent with a grade of "C" or better, or passing the Chemistry 101 Preparedness Test.**	**5**
Course Description (3 hrs lecture + 6 hrs lab & discussion)	This course presents the principles and laws of chemistry as related to the structure of matter. Students will compare states of matter and phase changes; relate atomic structure to periodic trends; use stoichiometry in multiple chemical contexts; be introduced to thermochemistry, thermodynamics, and chemical equilibrium; explain chemical bonding and the basics of Molecular Orbital Theory; identify acids and bases and their reactions; and identify and balance oxidation-reduction reactions. In hands-on lab, students will develop skills in observation, use of chemical glassware and equipment, making deductions from observations, analyzing results and communicating them in a written laboratory report.		
CHEM 102	**General Chemistry II**	**CHEM 101 or its equivalent with a grade of "C" or better. For courses completed outside of the LACCD, proof of eligibility must be taken to Counseling**	**5**
Course Description (3 hrs lecture + 6 hrs lab & discussion)	This course is a continuation of Chemistry 101. Topics covered include a detailed study of chemical equilibrium as applied to analytical chemistry including solubility, complex ion, and redox equilibria, pH, buffers, weak acids, weak bases, monoprotic and polyprotic systems; thermodynamics; electrochemistry; the solid state; the relationship between structure and properties; kinetics; coordination chemistry and ligand field theory; visible spectroscopy; nuclear chemistry; and the chemistry of selected metals and nonmetals. From the above topics, students can apply those concepts in hands-on lab activities to calculate the concentration of an unknown acid and its acid dissociation constant, to determine the reaction order and its rate constant of a chemical reaction, and to predict redox chemical reactions occurred in an electrolytic cell.		
BIOTECH 002	**Biotechnology 1**	**None**	**4**
Course Description (2 hrs lecture + 6 hrs lab)	An introduction to the field of biotechnology, hands-on laboratory experience, the industry standard of the principle of quality, and essential workplace-readiness skills to prepare students for employment in the industry. Students focus on essential laboratory techniques used in the biotechnology industry, including pharmaceutical, food, and agriculture industries. Students engage in two hours of lecture per week on the fundamental knowledge on several laboratory techniques and perform six hours per week of hands-on laboratory activities. Upon course completion, students are prepared to determine whether completing the biotechnology certification aligns with their career goals.		

BIOTECH 006	**Biotechnology: Quality Control**	**None**	**2**
Course Description (2 hrs lecture)	Students are introduced to quality control and validation in the field of biotechnology, including the overview of good manufacturing practices and the incorporation of quality control and quality assurance in the manufacturing of biotechnology products focusing on validation of assays, system evaluations, and process testing and reporting.		
PLNT SC 103	**Introduction to Soil**	**None**	**4**
Course Description (2 hrs lecture + 4 hrs lab)	This course involves the study of the physical, chemical and biological properties of soil. Students will learn about soil classification, and its derivation, use, and function. Management issues, including erosion, moisture retention, structure, cultivation, organic matter and microbiology will also be covered. In the laboratory, students will participate in experiments involving soil type, classification, soil reaction, soil fertility and physical properties of soil. The laboratory portion is a requirement of this class.		
CHEM 211	**Organic Chemistry for Science Majors I**	**CHEM 102 or its equivalent with a grade of "C" or better. For courses completed outside of the LACCD, proof of eligibility must be taken to Counseling.**	**5**
Course Description (3 hrs lecture + 6 hrs lab & discussion)	This constitutes the first part of a two-course sequence presenting the nomenclature, structure, stereochemistry, reactions, synthesis, and their mechanisms, of aliphatic hydrocarbons, focusing on alkanes, alkenes, alkynes, alcohols and ethers. As the course progresses a multistep-synthetic approach involves the various classes of compounds. The hands-on laboratory presents the standard techniques of preparation and isolation of organic compounds as well as the analysis of the purified products involving a variety of modern equipment and instrumentation.		
CHEM 212	**Organic Chemistry for Science Majors II**	**CHEM 211 or its equivalent with a grade of "C" or better. For courses completed outside of the LACCD, proof of eligibility must be taken to Counseling.**	**5**
Course Description (3 hrs lecture + 6 hrs lab & discussion)	This constitutes the second part of a two-course sequence and continues and completes the study of organic compounds initiated in Chemistry 211. It presents the nomenclature, structure, stereochemistry, reactions, synthesis, and their mechanisms of aromatics, amines and carbonyl-containing compounds. From the onset of the course, a multi-step synthetic approach ensures the review and incorporation of all previously studied classes of organic compounds. The end of the course employs the principles learned within a biochemistry framework involving the study of biomolecules, natural and synthetic polymers. The hands-on laboratory presents more techniques of preparation, isolation and analysis of organic compounds employing modern instrumental analysis. The laboratory focuses on the preparation and isolation of natural organic compounds, employing the prior-learned standard techniques, as well as the analysis of the purified products involving a variety of modern equipment and instrumentation.		

STAT C1000 (Formerly MATH 227)	**Introduction to Statistics**	**Placement as determined by college's multiple measures assessment process or completion of a course taught at or above the level of intermediate algebra. For courses completed outside of LACCD, proof of eligibility must be taken to Counseling.**	**4**
Course Description (4 hrs lecture)	This course is an introduction to statistical thinking and processes, including methods and concepts for discovery and decision-making using data. Topics include descriptive statistics; probability and sampling distributions; statistical inference; correlation and linear regression; analysis of variance, chi-squared, and t-tests; and application of technology for statistical analysis including the interpretation of the relevance of the statistical findings. Students apply methods and processes to applications using data from a broad range of disciplines.		

LAPC Chemical Technology and Industrial Quality Control Technician Advisory Group Attendance

Name	Affiliation	Position	Sept 29				
Sara Harvey	LA Pierce College	Department Chair – Chemistry	☒	☐	☐	☐	☐
Cameron Iverson	LA Pierce College	Chemistry Faculty	☒	☐	☐	☐	☐
Benny Ng	LA Pierce College	Chemical Technology Program Lead – Chemistry Faculty	☒	☐	☐	☐	☐
Aron Kamajaya	LA Pierce College	Biotech Lead - Faculty	☒	☐	☐	☐	☐
Yanwei Cai	LA City College	Chemistry Faculty	☒	☐	☐	☐	☐
Rachael Harper Delupio	LA Trade-Technical College	Chem Tech Lead – Faculty	☒	☐	☐	☐	☐
Adam Stieg	UCLA	California NanoSystem Institute – Associate Director, BioPACIFIC Materials Innovation Platform- Executive Director, Nano and Pico Characterization Laboratory - Director	☒	☐	☐	☐	☐
William Munroe	CSU Channel Islands	Chemistry - Faculty	☒	☐	☐	☐	☐
Herman Lelie	Constitution Laboratories	CEO	☒	☐	☐	☐	☐
Mon Khat	LA Pierce College	CTE Dean	☒	☐	☐	☐	☐
Donna-Mae Villanueva	LA Pierce College	Dean of Math and Sciences	☒	☐	☐	☐	☐