



“East Los Angeles College empowers students to achieve their educational goals, to expand their individual potential, and to successfully pursue their aspirations for a better future for themselves, their community and the world.”

**EAST LOS ANGELES COLLEGE  
CHEMICAL TECHNOLOGY ADVISORY COMMITTEE**

**MINUTES**

Monday, April 2, 2018

12pm-1pm

<b>PRESENT (IN-PERSON)</b>	<p>Rick L. Carpenter, Adjunct Faculty of Chemistry, East Los Angeles College  Philip Cherian, BioVinc LLC  Wendie Johnston, Lab Director, Pasadena Bio Collaborative Incubator  Alan T. Khuu, Associate Professor and Chair of Chemistry, East Los Angeles College  Errol Mathias, Assistant Professor of Chemistry, East Los Angeles College  Armando Rivera-Figueroa, Dean of Science, Technology, Engineering, Mathematics, East Los Angeles College  Mercy Yanez, Dean of Continuing Education and Workforce Development, East Los Angeles College</p>
<b>PRESENT (TELECONFERENCE)</b>	<p>Brian Boyle, Career Specialist and Senior Manager, LA Area Chamber of Commerce  David Gomez, Student, East Los Angeles College  Joseph Khoury, Senior Chemist, Los Angeles County Sanitation Districts  Shawn Ouyang, SUMO Biosciences  Terri Quenzer, Director and Sector Navigator, Life Sciences/Biotech Initiative at San Diego Miramar College</p>

- I. **CALL TO ORDER:** A. Khuu called the meeting to order at 12:00 pm.
- II. **INTRODUCTION:** A. Khuu thanked everyone for being able to participate. He described the structure and objectives of Career Technical Education (CTE) programs. He said CTE programs require an advisory committee, which industry partners represent an important component of the committee. Industry partners help inform the rest of the committee of current industry needs. A. Khuu explained the roles and expectations of the advisory committee. He said the committee makes recommendations to the program. The committee also meets a minimum of once a year, and many advisory committees meet at most twice a year.
- III. **PROGRAM OVERVIEW:** A. Khuu said the chemistry department at East Los Angeles College is in the process of creating a Chemical Technology program and needs the guidance from the advisory committee. The goal of the program is to prepare students to become Chemical Technicians and successfully enter the workforce with the knowledge and skills needed. A. Khuu read O-NET’s



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description for Chemical Technicians. He said Chemical Technicians conduct chemical and physical laboratory tests to assist scientists in making qualitative and quantitative analyses of solids, liquids, and gaseous materials for research and development of new products or processes, quality control, maintenance of environmental standards, and other work involving experimental, theoretical, or practical application of chemistry and related sciences.

**IV. LABOR MARKET DATA:** A. Khuu said according to the Centers of Excellence, it is projected that in the Los Angeles and Orange County region to have annual employment openings of 76. This data compared 2015 jobs against 2018 projected jobs. This is the demand data. In terms of supply data, the Centers of Excellence shows an average production of 2 job-ready Chemical Technicians per year. This is based on 2014 thru 2017 program completion data from the Los Angeles and Orange County region. The Centers of Excellence also indicated the median hourly earnings of \$19.43 for Chemical Technicians in the Los Angeles and Orange county region. A. Khuu said the salary for a Lab Technician I at J. Khoury’s facility is around \$70,000 per year. Clearly, the median hourly earnings represent a fraction of what student completers can earn; however, the Lab Technician I position requires the equivalent of an Associates degree. A. Khuu also said according to the California Community College Chancellor’s Office, no community colleges with a Chemical Technology program in the entire State show completion data between 2009 and 2017, except for Cerritos College. Cerritos College awarded 2 Associate of Arts degree and 1 certificate in the 2014-2015 year, and in the 2016-2017 year, they awarded 1 Associate of Arts degree and 1 certificate. There is definitely an employment gap, and East Los Angeles College can help fill that gap. P. Cherian asked where the industry may get people from if there is such a gap. A. Khuu said the data only represent supply data from community colleges, so the industry may get some graduates from 4-year institutions.

**V. CURRICULUM:** A. Khuu said the chemistry department would like to create a Certificate of Achievement in Chemical Technology and an Associate in Science degree in Chemical Technology.

**A) CERTIFICATE OF ACHIEVEMENT:** The Certificate of Achievement will consist of 6 courses with a total of 28 units: Chem 100, CQIA and the Industry; Chem 101, General Chemistry I; Chem 102, General Chemistry II; Chem 201, Quantitative Analysis; Chem 211, Organic Chemistry for Science Majors I; Chem 212, Organic Chemistry for Science Majors II. The Certificate of Achievement will consist of many core courses offered at the college. A. Khuu said students are currently already enrolled in Chem 101, 102, 211, and 212. He said the department will unarchive Chem 201 and make several changes. Chem 201 will change from 4 units to 5 units, since additional techniques and instruments will be included in the course. E. Mathias said the proposed quantitative analysis course includes the standard wet-chemistry techniques like gravimetric analysis, various titrimetric analysis, Ion Selective Electrodes, and spectrophotometric assays. But we have also included advanced instrumental techniques like GC-MS, HPLC and Atomic Absorption Spectroscopy. J. Khoury suggested to change the name of the course from Quantitative Analysis to Quantitative and Instrumental Analysis, since the course will contain content and instruments beyond the original quantitative analysis course. J. Khoury also asked if there could possibly be a course on using computers and software. He said his facility uses computers and specialized software for laboratory automation like LIMS. W. Johnston said this may not be needed. She said the use of computers and software can be embedded within the proposed curriculum. A. Khuu said this is true, since the department already has computers attached to instruments such as an FT-IR, which students uses the software to generate and analyze data. A. Khuu said it would be great if



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specialized instruments with computer and software that the industry uses can be purchased, so that students can be trained with these devices at East Los Angeles College. A. Khuu said he hopes the new program can be funded to purchase an LC-MS, since this is widely used in the industry. J. Khoury agrees and said his facility has 3 LC-MS units that are used very often. A. Khuu said the Chem 100 course will be a new creation. CQIA stands for Certified Quality Improvement Associate. A. Khuu said the course will prepare students to become certified through the ASQ, American Society for Quality. W. Johnston said she is happy to see quality packaged into the program. A. Khuu said the department plans to adopt Citrus college’s CQIA course curriculum that was fortunately shared with him. However, the emphasis of the course will be in chemical technology and not biotechnology as written by Citrus College. D. Gomez said that as a student, he thinks that because most students are already taking most of the chemistry sequence in the proposed curriculum, students won’t mind taking two additional courses to complete the program.

**B) ASSOCIATE IN SCIENCE DEGREE:** A. Khuu said the Associate in Science degree in Chemical Technology will consist of the same 28 units from the 6 core courses of the Certificate of Achievement, 10 units of electives courses, and 22 units from the LACCD general education courses as described from the college catalog. T. Quenzer asked if the Associates degree will allow students to transfer. A. Rivera-Figueroa said except for Chem 100, all of the courses listed in the proposed curriculum are transferrable. A. Khuu said students have the option to take additional general education courses to fulfill their IGETC requirements to transfer; however, students will have completed the bulk of IGETC courses. A. Rivera-Figueroa asked if it is mandatory for students to take the specific elective courses shown. A. Khuu said although students can take other courses as electives, the Chem 221: Biochemistry for Science Majors and Math 227: Statistics courses will be highly valuable for students, as students will be equipped with additional skills and knowledge to gain greater options of employment opportunities. W. Johnston said it makes sense that students take a statistics course, as this knowledge is much needed in the field. A. Khuu received consensus from the committee to accept and recommend the proposed curriculum.

**V. EQUIPMENT:** A. Khuu said the department has most of the instruments listed while some of them are on order. He said most, if not all, of the listed instruments are used in the industry. J. Khoury agrees.

**VI. SURVEY:** A. Khuu thanked everyone for participating, and requested for the industry partners to complete the survey questions and email the responses to him. J. Khoury asked when the responses were needed. M. Yanez said it would be great to receive the responses by the end of the week, as this information may be included in the document to request for program approval. B. Boyle also inquired if we had any outreach plan for surrounding high schools and our present students once we had the program in place. A. Khuu responded that he was actually going to seek B. Boyle’s help in this regard, to which B. Boyle responded that he would gladly help.

**VII. ADJOURNMENT:** The meeting was adjourned at 1:05 pm.