# CHILLANN KIRK D. ILLAGA

Phone: +639773837354
ckillaga@gmail.com/19101283@usc.edu.ph
Upper Volta Village, Pitalo
San Fernando, Cebu, Philippines, 6018

## OBJECTIVE

This internship opportunity allows me to be exposed in real-life scenarios which could enhance my theoretical knowledge, skills, and work ethics within the engineering field and work environment. This is also a good opportunity to put into practice old and new learnings for self-development and for the company as well.

## EDUCATION

**BS** **Chemical Engineering, University of San Carlos** 2019 - Present

Total Credits Earned: 173/185
Current GWA: 1.55

Specialization courses: Fuel and Energy Production i.e., *Commercial Biodiesel Production, Commercial Bioethanol Production, Hydro and Marine Renewable Energy Technologies*

## SKILLS AND ABILITIES

**Process Analysis & Design**

- Performed material and energy balances calculations.
- Reworked a model of the vapor-liquid equilibria of isopropyl-furfuryl alcohol system.
- Reworked a mathematical model of the oxygen diffusion in a pre-implantation human embryo in static culture.
- Co-designed an evaporator to concentrate seawater.
- Co-designed a plug flow reactor for the synthesis of phenol from cyclohexane.
- Worked an A.I.Ch.E student contest problem for 1948 as a design project for the dehydrogenation of isopropanol to produce acetone in an isomerization unit.
- Co-designed a continuous thickener for a wastewater treatment facility.
- Co-designed and performed material balances of a commercial biodiesel plant from coconut oil via two-step process involving acid-catalyzed esterification followed by alkali-catalyzed transesterification.
- Co-designed and performed material balances of a commercial bioethanol plant from *Ulva lactuca* via enzymatic hydrolysis and fermentation.
- Assessed the riverine energy potential of a possible run-of-river facility in Magima River for sustainable energy generation.
- Has experience in MathCAD, COCO ChemSep, 2D AutoCAD, and SketchUp.

**Investigations and Laboratory Work**

- Proposed and implemented research on simultaneously carbonized and sulfonated mango seed husk as a solid acid catalyst for the esterification of oleic acid with methanol.
- Performed laboratory experiments and unit operations and processes.
- Written pre- and post-laboratory reports which include data analysis, interpretation, and conclusion using MS Word.
- Proficient use of MS Excel in processing and analyzing data gathered from ChE-centered experiments.
- Performed proximate analysis to determine moisture, ash, volatile matter, and fixed carbon of mango seed husk.
- Performed gravimetric analysis to determine the sulfur content of a solid acid catalyst.

- Performed titration analyses to determine the total acid density of a catalyst, and the acid value of an oil sample.
- Inspected fire equipment (*Fire extinguisher, hose box)* around the USC – Talamban Campus.

**Communication**

- Presided over club and council regular meetings.
- Made oral presentations using multi-media tools including Canva, MS Powerpoint, Filmora and Adobe Photoshop.
- Undergone oral and pre- and post-laboratory questionings.
- Volunteered as a senior guide for freshmen chemical engineering students.
- Ushered the JPIChE officials during the signing of constitution and bylaws and conduct of first elections of Philippine Institute of Chemical Engineers – Cebu Chapter (PIChE-JCV).

**Management and Leadership**

- Organized and spearheaded club activities including technological transfers (*Adopt a Community: Liquid Detergent Making)*, webinar (*The Carolinian Brand of Chemical Engineers)*, week of welcome, membership and leadership trainings (*USC-ChEC Training First and Second Wave)*, tutorials (*Midterm and Final ChECtorials)*, club anniversary (*USC-ChEC Pearl Anniversary*, and fundraising activities *(Lab gown and laboratory kits)*.
- Worked collaboratively with the:
  - USC – Collegiate Engineering Council (CEC) during USC SOE Week of Welcome 2021.
  - USC – Chemical Engineering Council during the USC ChE Week of Welcome 2022.
  - Junior Philippine Institute of Chemical Engineers – Cebu Chapter (JPIChE – Cebu Chapter) during the interschool chemical engineering fellowship event *Pakighimamat 2023*.
  - UP Chemical Engineering Society, Inc. during the Student's National Chemical Engineering Conference 2022 (SNCEC)
- Participated leadership trainings and the *10th Carolinian Summit*, a two-day leadership training and experiences.

## EXPERIENCE

**MSHS Students Inspiring Greater Mathematics Association (SIGMA)**

*President* 2018–2019

Organized events that heighten mathematical understanding and appreciation in both junior and senior high school students of Minglanilla Science High School. Managed meetings of the club.

**USC - Chemical Engineering Club**

*Creative Committee* 2020–2022

Established every task involved in the creative advertising aspects of an event, such as conceptualization of promotional materials. Supervised the rest of the creative committee in the development of graphic and creative publication materials.

*Cybersecretary* 2021–2022

Consolidated the electronic documents of the organization. Administered the e-mail, group chats, and social media accounts of the organization. Promulgated important announcements of any upcoming organizational activities within and outside the organization through the online platform.

*President* 2022-2023

Administered the general supervision of the members in every activity or event proposed or implemented by the organization. Presided over all the regular and special meetings of the organization. Represented the organization in some ceremonies, transactions, and meetings within the university and co-school organizations.

**USC - Chemical Engineering Council**

*Information Committee Head* 2021–2022

Managed the group page and social media accounts of the council. Disseminated general announcements and important information to the chemical engineering student body across different platforms.

*Vice President for External Affairs* 2022–2023

Acted as an official representative of the council in all ceremonies, and transactions. Assisted the year level presidents and the standing committees of the council in every problem encountered concerning the chemical engineering body and addressing it to the president. Coordinated with other course councils within the university during events handled by the School of Engineering.