The future of jobs and workers prompts discussions among philosophers, economists and industry leaders. It stirs trepidation and hope in employers and employees alike. And in recent years, it has served as the focus of countless magazine think pieces and inspired the marketing campaigns of major corporations.

With a long-held commitment to experiential learning, Cal Poly Pomona prepares students for the working world by providing them with the practical skills and aptitudes they need to be successful in diverse professions from engineering to science to business.

That success is not tethered only to the skillsets students possess, but also to the mindset they develop. Whether it be a spirit of collaboration, the ability to solve problems creatively, or the desire to design and build projects from a place of compassion, students are getting the skills they need to make the world a better place.

A Syllabus for Success

The College of Business Administration offers a management and human resources class on organizational behavior where students learn the ins and outs of working at a company, says Olukemi Sawyerr, director of the iLab. “Business is rather unique in that we teach students about teamwork, how you deal with conflict, how you deal with team members not performing,” says Sawyerr. “They learn the theoretic but they also practice. How do you work with others? If you are a dominant team member, how do you pull back and let quiet ones talk? Students learn the value of making sure everyone contributes.”

Learning how to work collaboratively and constructively with others makes students better coworkers, team players and human beings, but that requires instruction and molding. “If you don’t give people the tools they need to work in teams, they are going to hate working in teams,” she says. “We expect students to be able to work in teams that have never worked in teams before. You have to provide tools and teach them the skills to be successful.”

Collaboration Trumps Conflict When It Comes to Innovation

On most days, particularly during the noon hour, students pack the Student Innovation Idea Lab (iLab). Teams developing products or working to come up with solutions to a complex problem huddle together in the lab on the sixth floor of the CLA classroom building, perched on the green and orange couches or gathered around tall tables with white plastic chairs. Collaboration is key, but for most of these budding entrepreneurs, especially those majoring in business, working in teams doesn’t start in the iLab.

Teamwork and team building is incorporated into the curriculum. The College of Business Administration offers a management and human resources class on organizational behavior where students learn the ins and outs of working at a company, says Olukemi Sawyerr, director of the iLab. “Business is rather unique in that we teach students about teamwork, how you deal with conflict, how you deal with team members not performing,” says Sawyerr. “They learn the theoretic but they also practice. How do you work with others? If you are a dominant team member, how do you pull back and let quiet ones talk? Students learn the value of making sure everyone contributes.”

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Professor Olukemi Sawyerr, director of the Student Innovation Idea Lab

Mechanical Engineering Professor Mariappan “Jawa” Jawaharlal can relate to students who don’t seem to have the passion and motivation that others come by naturally. “I tell them, ‘You are a perfect fit because I was like you, unsure,’” he says. “This is fertile ground for me to work on them.”

Even though he felt no pressure from his parents growing up in his native India, his desire to fit in to societal expectations provided him with three career choices: doctor, engineer or nothing at all.

A reluctant engineer was born, but it did not take long for the spark of imagination to ignite. He fell in love with the field after discovering that everything, from clothes to cups to cars, owes its existence to engineers. “There is nothing in the world that is possible without engineering,” he says. “If you took engineering away from our life, we would be naked and back in the Stone Age. Engineering makes life easier.”

Engineers are data-driven and tend to focus on objective facts, but what Cal Poly Pomona students learn goes beyond the practical. In one classroom, students work on construction of a solar-powered, low-cost, zero-emission independent water treatment system to keep water that is used in sinks, showers and washing machines from going to waste.

Jawa says many of his students are working on projects that help the disabled because not only are they data-driven, but they are passion- and people-driven too. “We do a great job helping out students to obtain a technical skill set. We must also help them develop a mindset. ... Mindset brings you a certain level of social responsibility. Engineering design has societal impact.”

Mechanical Engineering Professor Mariappan “Jawa” Jawaharlal

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EXPOSING STUDENTS TO NEW IDEAS

Perched atop a hill across Temple Avenue with a view of the main campus, the Lyle Center for Regenerative Studies features ponds, rustic wooden buildings, lush vegetation and an experimental house students constructed from “papercrete,” a mixture of cement and newspaper pulp.

There, students minoring in regenerative studies or earning a master’s degree in the subject learn to be good stewards of the environment and to apply sustainability practices to what they do and create. They also learn to master and nurture the more intangible skills that are attractive to prospective employers, says Kyle D. Brown, professor and director of the center.

“Employers who hire Lyle Center grads really like the way in which our students frame problems or issues they are working on and the way they can communicate across all disciplines on complex issues.”

Professor KYLE D. BROWN, director of the Lyle Center for Regenerative Studies

GROWING THROUGH LEADERSHIP

Engineering is a hands-on profession, so prospective employers count on graduates to be work-ready, says Winnie Dong, a professor of chemical and materials engineering, the College of Engineering’s director of projects & research, and the director of the McNair Scholars Program.

“We always hear that employers think our students are good because they hit the ground running,” Dong says. “They are not afraid to touch things or to change things. That’s good for an entry-level position. Hands-on skills can get you in the door, but they are not all you need.”

These hoping to advance need problem-solving, critical thinking and leadership skills.

“It’s not only knowing how to solve problems in engineering, but how to take the problem-solving skills they developed and transfer that to solving all kinds of problems,” she says. “Not all students get that.”

Students who develop their leadership skills by running or office or leading a team have a leg up, she adds.

“There is no characteristic to make a good leader, but students have to be open to trying things they may not be familiar with,” she says. “Two or three years in classes with students with the same mindset narrows you. Having an opportunity to take classes or do activities with students from across campus is important.”

Interdisciplinary programs such as Entrepreneurship in STEM, which Dong established with the iLab’s Olukemi Sawyerr, give students across campus an opportunity to work on problem-solving, collaboration and entrepreneurial skills by coming up with a business plan for a product or service and taking the steps to make it a reality.

“They are going through the process that teaches them how to work in interdisciplinary teams, under pressure and under budget constraints,” Dong says. “Students learn about leadership styles and what they need to work on.”

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Professor WINNY DONG, director of projects & research in the College of Engineering and director of the McNair Scholars Program