

Engineering Advisory Meeting Minutes

Meeting date and time: November 4, 2022 9:00am-10:00am

<https://rccd-edu.zoom.us/j/81072278467?pwd=dGRYRmxnQ2JtS2NQSERHekFJZDZ>

Attendees:

Attendee:	Company/Organization:	Attendee:	Company/Organization
Antone Andrews	Project Manager for Technical Training Dept., General Atomics-Aeronautical Systems	Joshua Gonzalez	Director of Technical Training, Target
Diana Ramirez	Reborn Cabinets, Kitchen and Remodeling	Adriana Perez	Work-based Learning Job Developer, Moreno Valley Unified
Terry Molder	Quality Manager, Eibach Inc.	Ariana Ordonez	CTE Counselor, at CNUSD
Aldo Villalpando	VP, Affordable Plastics	Hazel Walker	College Careers and Economic Development Dept. at Fontana Unified School District
Maria Lozano	College and Career Readines, Moreno Valley Unified School District	Ileidis Martinez	HR Manager, Lubrizol
Gina Boster	CNUSD		
Cristina Flores	K-12 Strong Workforce Pathway Coordinator, JUSD		
Patrick McSwain	President, Quality Inspection		

Minutes from Discussion

1. Meeting began at 9:05am
2. Welcome & Introductions
 - a. Discussion began as everyone introduced themselves and their organizations
3. Ashlee Johnson, Full-time Engineering (ENE) Professor introduces Norco College's ENE framework
 - a. Professor Johnson presented overview of ENE curriculum vision goals for a Quality Engineering Technician, importance of embedding ASQ standards and support students on the beginning of their pathway with base knowledge and understanding to prepare them to get additional ASQ career training and additional certifications.
 - b. Professor Johnson-shared new curriculum for Quality Engineering Technology program CTE pathway. (see attached curriculum sheet)
 - i. Proposed 24 units, 6 classes at (4 units each)
 1. TQM/Quality Systems
 2. Design Control
 3. Fundamentals of Manufacturing Processes and Materials
 4. Quality Assurance, Quality Control, and Regulatory

5. Statistical Analysis
 6. Technical Communication and Business Etiquette
- ii. Professor Johnson stressed how important and cool this new program is as it will be the first at Riverside Community College District and the first in our region, as Fox Valley Technical College is the only other college in the nation at this time to have a Quality Engineering Technology CTE certificate/degree pathway.
- c. Feedback from Industry partners on proposed new curriculum
 - i. Patrick McSwain (Quality Inspection) mentioned the importance of understanding what quality is. *“Classical view of quality control needs to be re-imagined and needs to be modernized and it becomes a profit center as you operate optimally with constant improvement and increasing quality. Important to spend money on quality control processes and career fields within quality control within manufacturing.”*
 - d. Professor Johnson agreed and discussed 1st class on proposed curriculum, TQM (Total Quality Management)/Quality Systems class should include an overview of the roles that it takes to bring a product to life, goals and priorities, perspectives of the roles and understand the different perspectives of these roles to look at the project from all angles. *Ashley asked for feedback on taking the ASQ approach and including in the curriculum historical references and stories of previous failures from not relying on quality control such as bridges collapsing and improper medical dosing, and other failures in the quality engineering and manufacturing space as a learning tool for students to see the importance of total quality management.*
 - i. Antone Andrews (General Atomics-Aeronautical Systems) agreed with this approach and mentioned at the 2-year schools you have, a lot of times, trade schools that often focus on a proprietary systems or a single approach and he thinks it’s important for our students to help them understand that there might be other quality approaches out there based on different histories, such as aviation, maritime, US Navy uses Sub-Safe as an example. Antone asked, *“This offers the opportunity to differentiate that while TQM is one approach, are there other approaches that are emerging? Other approaches that are left by the wayside because there are issues. Importance to teach Holistic approach and show students quality is a process that is constantly undergoing change.”*
 - e. Professor Ashlee Johnson asked of the group, *“How do we develop a program that can develop quality, well rounded quality engineering technicians that are prepared to go into different sectors?”* ISO 9000 or 9001 approach is great but it leaves out other sectors
 1. Joshua Gonzalez (Target) responded and said it might work best to anchor down to more universal methodologies, like Lean Six Sigma, universal concepts, that help build the acumen and foundational knowledge to use. Joshua asked, *“What are the universal standards of project management that Norco can take and apply to a project and quality control to teach the students universal standards?”*
 2. Based on that feedback, Professor Johnson agreed then to teach students a well- rounded base concentrating on ISO 9000 or 9001 and Lean Sciences and Project Management
 3. Patrick McSwain(Quality Inspections), *said that ISO 9001 2015 est. concentrates on risk and measuring quality and measuring process, documenting and training on machining, machine maintenance, and have metrics to tell if you are doing worse or better. He stressed Quality Dept. are in the business of communication and students need to know how to clearly communicate the data, the metrics, the measurements within departments and should be the focal point of Norco’s Quality Control/Quality Engineering Technology program.* Verification and validate the information that is being conveyed in the business environment.
 - a. Ashlee Johnson agreed and may need to add the technical communication component to the Design Control course or add a little into each of the 6 courses, so students know how to estimate measurements, get their point across to their target audience and the interdepartmental communications needed to collect the right information. *She asked the group, “Can this be taught in our Technical Communication and Business Etiquette course Or do we need to revamp our courses to include teaching the technical communication skills in a facet of all 6 courses?”*

- b. Joshua Gonzalez (Target), responded and agreed with Patrick that the soft skills component of learning effective communication in a technical setting is key to being clear and anchoring back to a project management philosophy will show the students tools of how to communicate and what tools to leverage to make sure we are standardizing the communication. There is soft skills piece and more standardized piece of communication to consider and include in Norco's curriculum.
- c. Ashlee Johnson agreed there is a need for the project management skill set approach for the standardized communication that is missing from the current proposed curriculum and that aspect of project management is missing and PMP is missing.
- f. Statistics in the proposed curriculum was discussed and *Professor Johnson asked how deep and how much of the statistical analysis do we need to get into, should we make it typical Math statistics class and keep it theoretical OR make it more applied statistics and use statistical analysis software such as Minitab or what companies are using now?*
 - i. Patrick McSwain (Quality Inspections)-stressed that it is important to go back to the basics of statistics, don't generate data just to generate data. *By looking at 30 samples for plastic parts for example, he can tell how many defects they will get for millions of parts, using CP capability of a process and CPK, the process that can put the characteristic being measured into the tolerance window so it fits its mating parts or does its design function correctly. Statistical process control is important, CP and CPK is most important. Use real life statistics. Lean Six sigma helps to keep everything within the bell curve so again teach students some components. Also, trigonometry doesn't need to use radiant for this industry, but rather right-angle trigonometry, blue prints and manufacturing. Understanding how it works and which tools to pick up and why things work is so important.*

4. Workforce Needs and processes Discussion-Ashlee Johnson

- a. Titles used within the industry
 - i. Quality Inspector-Patrick McSwain uses this title and he hires employees who have good technical blue print reading, great Microsoft Excel skills, and be able to use hand tools
 - ii. Quality Control Technician-Ileidis Martinez from Lubrizol uses this title
 - iii. Quality Engineering Technician- is Norco College's proposed program title
 - iv. Quality Control Managers- *Joshua Gonzalez, said Target uses Quality Control Manager, the Engineering bucket is more for Material Handling and IT*
 - 1. Ashlee asked what is the qualifications for the Quality Control Manager position?
 - a. *Joshua Gonzalez answered that Lean Concepting, with Six Sigma, history of project management and quality control, and they pull from employees with schooling or on the job professional development within these areas. Quality Control Manager, addresses the big theme of what we are trying to solve for, and puts the correct processes in place so that the Quality Control Inspector knows the expectations and sets up for success.*
 - 2. Ashlee followed up by asking for positions that lead up to the Quality Control Manager
 - a. Joshua responded that Quality Control Inspectors is the entry level position they hire and reports to Quality Control Manager
 - b. Antone Andrews, uses Quality Control Associate to recognize students from 2-year program graduates
 - i. Skill sets they are looking for: Setup and calibrate major equipment

5. K-12 Partnerships Discussion

- a. Professor Ashlee Johnson posed the question: What activities can we do to get our students engaged early at a younger age and what type of work-based learning activities and opportunities can be do with high school and college students and what programs can we develop so students think and learn about these lean sciences?
 - i. Antone Andrews (General Atomics-Aeronautical Systems), stressed that teaching kids about the awareness of understanding the why and how we come to these correct answers is just as important as getting the right answer. Understanding the why and the process.

- ii. Patrick McSwain (Quality Inspections) agreed and added that teaching kids at a young age on how to use basic measurements, good rationale in estimating and understanding decimal points and understanding why you are off so you know if you are close in your estimation is important. Using a slide rule even might help
- iii. Annual Engineering Challenge-Lean Six Sigma Challenge?
 - 1. Joshua Gonzalez (Target), noted to be aware of the age group, HS vs. College and use real world scenarios businesses are facing and students can problem solve and use the methodologies of Lean Six Sigma to attack a problem/project Target might be facing right now
 - 2. Ashlee Johnson-sent a call out for project ideas and business partners for this year's annual engineering challenge for all to think about
- iv. Patrick McSwain (Quality Inspection)-agreed internships are extremely important and hires interns and open to business projects with Norco's ENE students potentially in the future.
- b. Professor Johnson reinforced importance of K-12 partnerships, the collaboration possibilities of our students
 - i. Introduction of K-12 partners that arrived later at the meeting, Dr. Gina Boster, Ariana Ordonez, Cristina Flores
 - ii. Dr. Gina Boster, CNUSD excited to work more with Norco College and working with Patrick McSwain and Quality Inspection that is part of the meeting today and stressed importance of math relevancy and creating these basic competencies early on in the math and lean sciences. Project Engineering and other CTE programs would be exciting to work with Norco College to help solidify those pathways.
- 6. Professor Ashlee Johnson wraps up and thanks everyone for attending, appreciates the feedback that will help her to go back and revamp some of the curriculum presented today, and got ideas for formal activities and she will draft some proposed activities and the second draft of the curriculum to then send out to the attendees of today's advisory for their feedback. And see how we can collaborate in the future and a follow up meeting
- 7. Advisory adjournment 10:00am