COLTON REDLANDS YUCAIPA
REGIONAL OCCUPATIONAL PROGRAM
Inspiring Possibilities

2017-2018
STEAM Shop Advisory

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Industry Advisors

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Curriculum Review by Unit

Unit 1– Well covered no suggestions at this time.

Unit 2– Well covered. Suggested instructor find ways to stress competencies E and I. The ability to identify your role and the role of others helps to minimize stress in teams in the engineering field. Felt this unit is extremely important to developing client relationships and should be emphasized.

Unit 3– In items B and E it may be helpful to stress the importance of identifying transferrable skills.

Unit 4– Good content no suggestions.

Unit 5– Suggested adding MSDS location, proper use, update and importance of proper documentation. Also, safety of intellectual property or trade secrets this would apply to government and small businesses (i.e. patents, recipes, procedures) and helps companies maintain competitiveness.

Unit 6 – Add competency: Explain and identify the scientific method. Add competency: Identify the cause of the problem. Add competency: Identify the short and long term effects of the problem. Competency A. is an important skill to develop in staying up to date with current trends in industry this should be stressed.

Unit 7 – D. Add (short-term and long-term) after the word impact. Add competency: Recognize cost, time, schedule, and manpower constraints for each concept.

Unit 8 – Add competency: Design multiple iterations, if applicable.

Unit 9 – Add competency: Determine if multiple iterations are required.

Unit 10 – Add competency: Provide analysis in all relevant mediums (i.e. cost, schedule, materials).

2017-2018 STEAM Shop Advisory (10/25/2016)

To validate the new STEAM Shop curriculum, CRY-ROP educators met with business partners from the Manufacturing and Product Development and Fashion and Interior Design industry sectors both of which use the design process. Discussion topics at this advisory meeting focused on workforce trends, hiring practices, entry level skills, and training and certification requirements for students who have knowledge and experience in the design process.

Question 1

What does your hiring process look like?

Question 2

What interpersonal skills are lacking in today's workforce?

Question 3

What foundational skills are necessary for entry level positions within your industry?

Question 4

What skills/knowledge is being required of new employees to address the latest trends in technology, equipment, regulations, laws, etc.?

Question 5

What skills have become obsolete in your industry due to changes in technology, equipment, regulations, laws, etc.?

Question 6

What are your projected labor needs in the next few years?

Manufacturing and Product Development

Question 1: What does your hiring process look like?

Small or independent company: resume, interview, portfolio, experience, degree may not be as important. Large or incorporated company: application, resume, interview, certifications, portfolio, experience, degree.

Applications are submitted online through Boeing's career website for open requisitions. (Note: A PDF or Word Document cannot be submitted as a resume; all applications for requisitions are pre-determined fields that you fill in based on the information from your resume.) If this electronic application is selected, there will be a follow-up application to fill out in greater detail (I believe at this point, a PDF/Word resume can be submitted). Thereafter, either an in-person or phone interview may be scheduled. Afterward, you will receive confirmation that you have been awarded the position (I do not know if they inform you if you did not receive it.)

Question 2: What interpersonal skills are lacking in today's workforce?

Face to face communication, ability to build relationships, collaboration, and problem solving skills.

The ability to transfer skills from one job to another, work in groups and problem solve effectively.

Question 3: What foundational skills are necessary for entry level positions within your industry?

Entry level employees should have basic writing, math skills. Electrical knowledge is highly desirable.

First and foremost, you need to have a Bachelor's degree in engineering or STEM. This is a minimum. Thereafter, entry level positions require a combination of experience and skills. This experience does not necessarily need to be related to the job, but that does help (i.e. research lab experience, STEM clubs and projects, internships). What's more relevant are the skills obtained from this experience. For example: adaptability, leadership, being able to work with a team, being able to work independently, being able to take direction from superiors, communications skills (verbal and written), conflict resolution, integrity, efficiency, forward-thinking, self-improvement.

Question 4: What skills/knowledge is being required of new employees to address the latest trends in technology, equipment, regulations, laws, etc.?

In the manufacturing products that are directly linked to popular movies etc. a strong knowledge of copyright law is a must. Keeping up with current technology in the industry is also imperative. A few trends in technology and equipment are: motion sensing, Micro pcbs, LEDS, safer battery cells, R&D, 3D Molders, 5 axis programming, master cam gauge systems, reverse engineering, and 3D gauge arms.

Leadership has been the most critical skill that employers are looking for. Companies are interested in hiring someone who they believe will lead change and improvement in technology/equipment/etc. Having a technical background in these areas is a plus, but each of these areas is specific to the position, and the majority of that knowledge will be transferred on the job. If you can demonstrate in an interview or on a resume that you have leadership skills and experience, this will increase your chances of being hired.

Question 5: What skills have become obsolete in your industry due to changes in technology, equipment, regulations, laws, etc.?

While some skills are used less frequently do to emerging technology manual skills still need to be used to complete tasks at times. Skills are ever changing, but never obsolete.

The only skill I can think of is, specifically, the ability to create engineering drawings on paper. Drafting classes are still taught at some universities, and do present tremendous value in terms of learning how to design and prototype. However, this specific skill is no longer used because everything is done using 3D modeling and computers. Regardless, having the skill in your back packet can be helpful as a reference.

Question 6: What types of training, education, certifications, or credentials are desirable for entry level positions in your field?

Small or independent company many not require any specific training or certification. However, industry certifications and training can assist in giving an applicant an added advantage.

Certifications commonly earned for entry level positions are: Into to Solidworks, Nim, HVAC, and CNC.

Again, minimum educational requirement is a Bachelor's degree in engineering or STEM. Training includes having some kind of work experience and the skills previously mentioned. There are additional certifications/credentials that are helpful to other jobs in my field (not mine position specifically). For other positions, completing an FE exam (Fundamental Engineering) related to your specific major is very useful, and required by some companies. For positions like mine, having completed a minor in business was not required, but did contribute significantly to a large portion of the work that I perform daily. I would recommend for any job at all to complete a minor in business (perhaps even double-major) because the content taught at that

level is universally applicable to all entry-level positions (and sets you apart from most other applicants who have a single major).

Fashion and Interior Design

Question 1: What does your hiring process look like?

Multiple career paths exist with in the fashion design industry, most of which require a portfolio review. The portfolio may include physical sewn samples, photos of finished work and the interview may include hands on assessment of skills depending on the position being applied for.

Question 2: What interpersonal skills are lacking in today's workforce?

Independence and problem solving are missing components.

Question 3: What foundational skills are necessary for entry level positions within your industry?

Basic knowledge of garment construction, patternmaking, understanding the properties of fabric and how the different types of fabrics drape are important in an entry level clothing design position.

Question 4: What skills/knowledge is being required of new employees to address the latest trends in technology, equipment, regulations, laws, etc.?

Employers require knowledge of software commonly used in the industry such as: CAD, Adobe Illustrator, and Photoshop. Knowledge of the laws regulating the types of fabrics allowed for use in children's wear would be required by an agency or manufacturer who specializes in children's wear.

Question 5: What skills have become obsolete in your industry due to changes in technology, equipment, regulations, laws, etc.?

The skill of quality work and materials is becoming obsolete, creating products with shorter lifespans than ever before. Knowledge of couture (hand sewing) and fine garment construction is becoming obsolete.

Question 6: What types of training, education, certifications, or credentials are desirable for entry level positions in your field?

The fashion industry generally accepts experience over any degree, whereas some art colleges have a reputation of not providing the skills needed to work in the industry. A designer will usually need to take on other duties as assigned, drawing is 1/10 of the design position, 50% of the position is pattern knowledge and 40% is other duties such as, business management.

Industrial Engineer

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Industrial Engineers	241,100	243,200	+1%	7,280
California	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Industrial Engineers	24,700	27,200	+10%	980

Industrial Engineer Technicians

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Industrial Engineering Technicians	66,500	63,500	-5%	1,630
California	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Industrial Engineering Technicians	4,100	4,400	+7%	130

Manufacturing Engineers

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Engineers, All Other	136,900	142,300	+4%	3,300
California	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Engineers, All Other	18,500	21,100	+14%	630

ENGINEERING TECHNICIANS

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Engineering Technicians, Except Drafters, All Other	70,100	69,900	0%	1,710
California	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Engineering Technicians, Except Drafters, All Other	9,200	10,200	+11%	320

COMMERCIAL AND INDUSTRIAL DESIGNERS: CALIFORNIA

State and National Trends

United States	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Commercial and Industrial Designers	38,400	39,200	+2%	990
California	Employment		Percent Change	Projected Annual Job Openings [1]
	2014	**2024**		
Commercial and Industrial Designers	5,300	5,600	+6%	160