

Curriculum/Skills Alignment:

No matter if a college is using a standard instructional model, or a competency-based model, curriculum and skills alignment is a very important practice. The term alignment means that the curriculum of a course/program is aligned with what is needed by an employer in a specific job classification. The alignment of the skills that the student develops is very important.

Some college faculty may focus on using a textbook which depending on the author of the text, may focus only on the theory of operation of a technical topic or technology. As an example, if Variable Frequency Drives are explained in a textbook, the text may discuss the different types of VFD (VVI or PWM) and show the waveforms and explain how frequency controls the speed. Many times the textbook stops there. In the industrial workplace, a Maintenance Technician will need to know how to troubleshoot a VFD when it fails, to determine if the device is faulty. Then if it is determined that the VFD is faulty, what is required to replace it and recommission it back into operation. So the curriculum (instructional material, labs, assessments, etc.) should include how to determine through a method of troubleshooting, including the relationship between input signal, output frequency and output voltage. The curriculum should prepare the student through the development of knowledge and skills to troubleshoot a system. This is alignment.

How does the curriculum get aligned? Alignment is done through employer engagement, primarily industry roundtables. In this process the faculty/dean will identify a few (3-4) subject matter experts from area manufacturers who are experts on motor control and VFDs. They will meet with the faculty for approximately 1 hour to review the topics in the course. It is important not to give a person from industry a blank paper, or a book. The Project PI usually does a list on 1-2 pages, then facilitates an intense review of the topics. There is typically a recorder who captures the comments from the SME group. The curriculum adjustment is sent to the SMEs to get their final input and approval of the changes. It is very important to understand that the worst situation would be if the faculty asked for SME input, and does nothing with it.

Based on the input from the SMEs, the changes may cost the college some money. If you teach VFDs, then make sure there is an ample amount of hands-on equipment available in the labs for the students to learn on, and to be assessed on. This is important for the Dean of the Department to understand. If there is not money for new equipment, ask the industry partners if they could donate some slightly used VFDs to the college, or possibly reach out to the College Foundation to determine if there are funds available to support the program with equipment purchases.

The most important takeaway is that curriculum/skills alignment will turn out better prepared students. What is also important is to have the assessment aligned to assessing the skills required of the students, then they will focus on developing these skills.