Executive Summary Program: Manufacturing Integration Project

Project Title:	Manufacturing Integration Project to Prepare Students for Real World Problem Solving
Partners:	Vocational Manufacturing CAD Academy, Electronics Technology,
	and Modern Machining Technology

Objective:

The objective of this project is to teach students how various disciplines interact to solve manufacturing problems in the working world. Our effort intends to bring together three instructors and three curricular areas to expand the knowledge of all of our students beyond their own specific skill and to help them better understand the manufacturing and design world.

Project Description:

Vocational Electronic students are assigned a senior project. They have to design and build a dual variable, DC power supply with a built in digital amp/voltmeter. Cutting out the front faceplate has always created a problem for the students so the Electronic students now work with the CAD Design students to computer draft the faceplate. The CAD students drew and designed several models.



The computer drawing of the faceplate is then transmitted to the Modern Machining students who program their CNC milling machine to manufacture the faceplate.



Due to the enhanced flexibility of the design and manufacturing phase of the project, students can now add a variety of customized faceplates to their projects. The integration of the various workers in the project created a real world scenario requiring accurate communication, problem solving, and the transference of technical knowledge among the students.

CAD students have increased their understanding of the manufacturing process, Machining students have enhanced their understanding and ability to interpret drawings into CNC programs, and electronic students have been exposed to both the design and manufacturing disciplines.





Outcome and Products:

This program intends for successful student participants to enhance their knowledge of peripheral curriculum areas: Electronics students learn more about Drafting and Manufacturing, Machining students learn more about Computerized Drafting and Electronics, and CAD students experience the manufacturing and electronic input on the integrated project. Peripheral outcomes will include: 1) increased ability to communicate across curriculum areas, 2) improved problem solving skills, 3) the development of a model for more sophisticated and complex interdisciplinary projects, and 4) the enhanced knowledge of all aspects of the industry by all of the students involved.

Contact Persons:

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