National Science Foundation
WHERE DISCOVERIES BEGIN

AMERICAN ASSOCIATION OF COMMUNITY COLLEGES

*Mechatronics

The Foundation for Manufacturing, Supply Chain Technology and other critical industries

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Our Participants

MHI
THE INDUSTRY THAT MAKES SUPPLY CHAINS WORK™

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*What is Mechatronics?

"Mechatronics is the synergistic combination of precision **mechanical engineering**, **electronic control** and **systems** thinking in the design of products and manufacturing processes. It relates to the design of systems, devices and products aimed at achieving an optimal balance between basic mechanical structure and its overall control."

http://www.journals.elsevier.com/mechatronics/

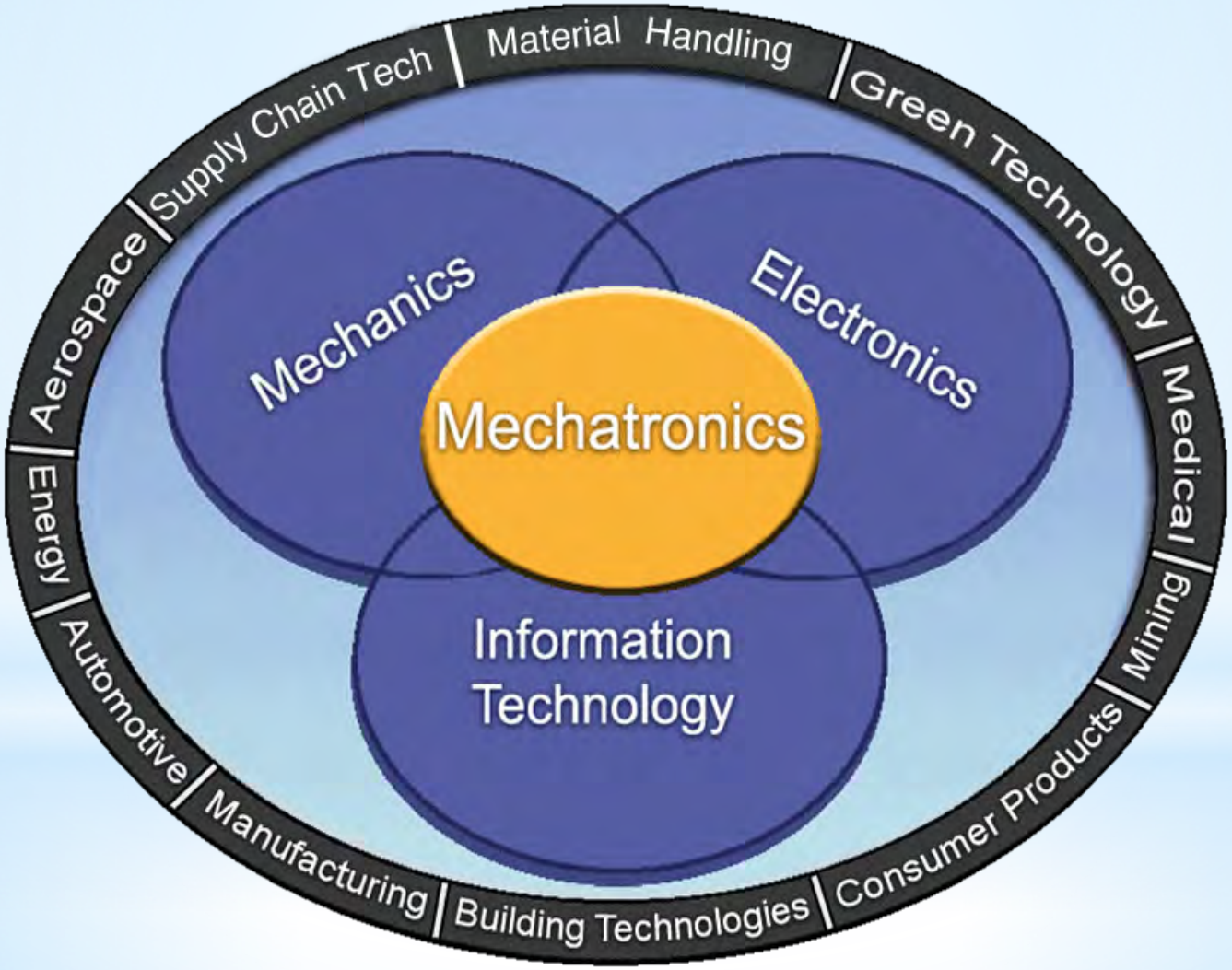
AACC Mechatronics Video

Questions for the audience?

Does your institution have a mechatronics type program?

If so, what is it called?

Mechatronics – An Integrative Discipline



*Industry Sectors Requiring Mechatronics?

Material Handling: MHI/SCTE Video

Advanced Manufacturing: Flate Video

Packaging: Invata Video

Renewable Energy: Wind turbine Video

*What type of employees have Mechatronics Skills?

In Material Handling?

In Production/Manufacturing?

*Are there relevant industry certifications?

Siemens: Mechatronics Systems Certification

The Association for Packaging and Process Technologies (PMMI) Mechatronics Certificates

Questions for our Industry Partners

Are there other certifications?

How important are certifications?

Is an Associate degree of similar or equal value?

*Questions for the audience?

Do your industry partners require certifications?

How important are the certifications?

Is an Associate degree of similar or equal value?

*Mechatronics and the curriculum

How can industry specific awareness and mechatronic applications be included in an integrated curriculum?

Chattanooga State (auto)

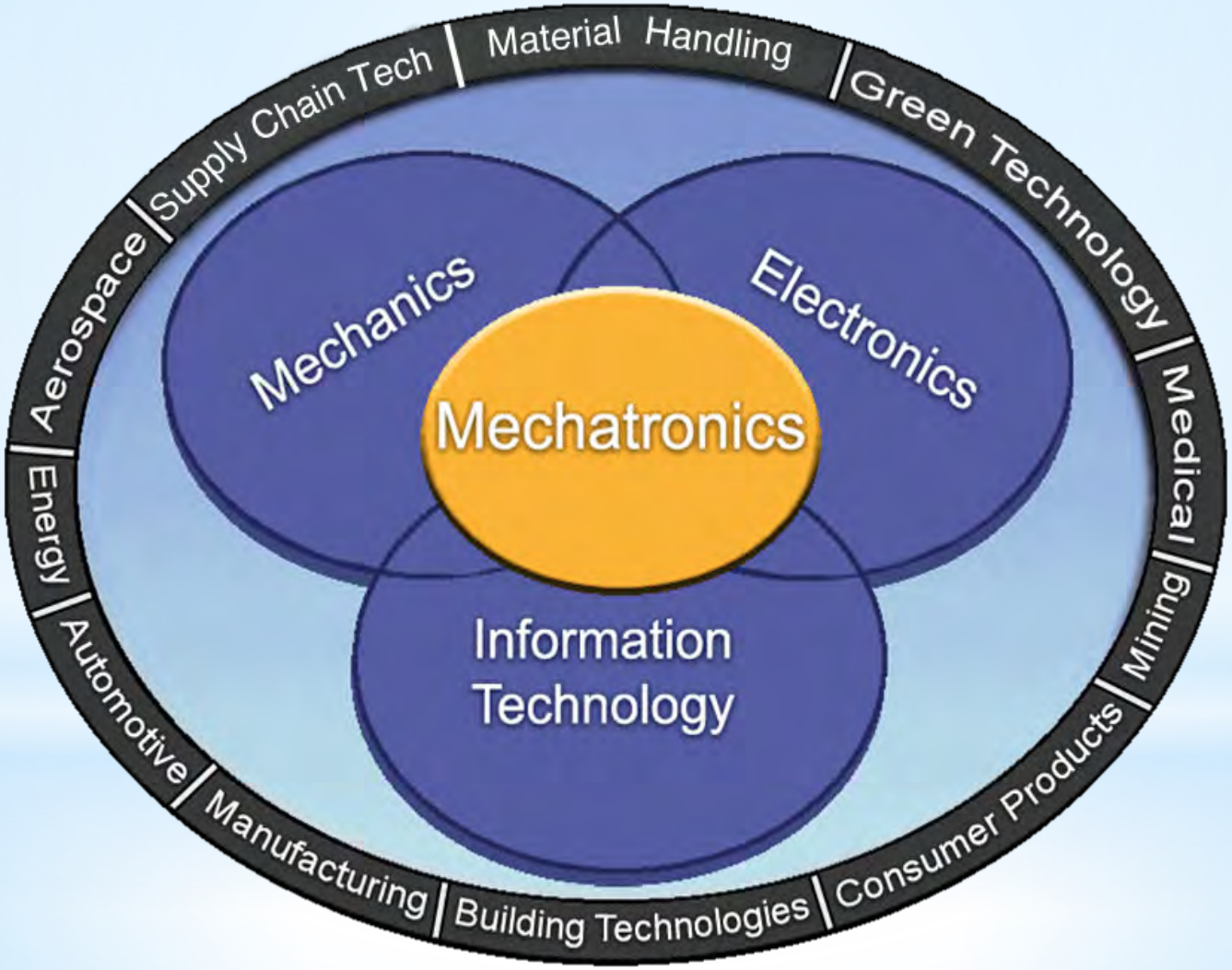
St. Clair College (automation, energy)

Gateway Technical College (general)

Two Example Curricula

Advanced Manufacturing	Supply Chain Technology
Electrical Systems	AC/DC Theory and Service
Mechanical Systems	General Mechanics
Pneumatics and Hydraulics	Pneumatics and Hydraulics
PLCs	PLC Theory & Maintenance
Robotics	Math for eng. technology
Mechatronics Capstone	Technical communication
Electives (Choose 3)	
High Tech Manufacturing	Introduction to automated warehousing
Manufacturing Processes	
Eng. CAD and Drafting	Blueprint reading
Advanced PLC	Micro Processors & controls
Industrial Robotics	
Industrial Safety	OSHA Safety standards
Welding	Welding

Mechatronics – An Integrative Discipline



Let's Discuss

Other ideas how industry specific awareness and applications be included in the curriculum?

Examples of strategies that have worked?

Concluding thoughts…

Mechatronics is a growing skill set

These skills are transferable across many industries

Educational institutions must better understand how these skill sets can be integrated in curricula offerings

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