Update #: 20
Title: **New Degree in Mechatronics**
Type: PDCCC, the VCCS, the State Board, and SCHEV have approved PDCCC's proposal for an Associate of Applied Science Degree in Mechatronics
Effective: Fall 2016

MECHATRONICS

Program: Mechatronics
Award: Associate of Applied Science Degree
Plan Code: 736
Length: 68 credits, 2 years
Lead Faculty: David Lorenz

Purpose: The Associate in Applied Science Degree curricula is designed to introduce students to the field's central concept: how mechanics, electronics and computers are integrated through the use of automated hydraulic and pneumatic control systems. The curriculum is designed to challenge the student with hands-on instruction based around this central concept. Instruction focuses on developing knowledge of theory and a hands-on approach to learning. This program is committed to preparing students to be successful in the workplace as leaders and members of a team.

Occupational Objectives: To prepare students to become mechanical operators, mechanical service technicians, maintenance and manufacturing technicians, robot product consultants in the fields of electronics, mechanics, software tech, math, physics and medicine.

Program Student Learning Outcomes:

Upon successful completion of the Mechatronics AAS Program, students will be able to:

1. Demonstrate the ability to select and apply the knowledge, techniques, skills, and modern tools of mechatronics engineering technology to broadly-defined engineering technology activities including proficiency in mechanical design, materials, manufacturing processes and automation;
2. Demonstrate and ability to select and apply knowledge of science, technology, engineering and mathematics to engineering technology problems that require the application of principles and applied procedures or methodologies;
3. Demonstrate an ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
4. Demonstrate an ability to design systems, components, or processes of broadly-defined engineering technology problems;
5. Demonstrate an ability to identify, analyze and solve broadly-defined engineering technology problems;
6. Demonstrate an ability to function effectively as a member or leader on a technical team;
7. Demonstrate an ability to apply written, oral and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;

8. Demonstrate knowledge of the impact of engineering solutions in a societal and global context;
9. Demonstrate a commitment to quality, timeliness and continuous improvement

Admission Requirements: In addition to the general admission requirements of the College, entry into the Mechatronics Degree program requires proficiency in basic arithmetic and English.

Program Requirements: The curriculum for the Mechatronics Degree program combines general academic instruction in mathematics, science, and communication with technical instruction geared toward gaining competence for entry-level and mid-level positions within business, industry, and government.

MECHATRONICS (736)

Sample Schedule

FIRST YEAR

Fall Term

CST 100	Principles of Public Speaking	3
DFT 175	Schematics and Mechanical Diagrams	2
IND 195	Introduction to Automation	2
MEC 126	Computer Program for Technologists	3
MEC 140	Introduction to Mechatronics	3
SAF 126	Principles of Industrial Safety	3
SDV 100	College Success Skills	1
Total		17

Spring Term

ENG 111	College Composition	3
ETR 286	Principles & Applications of Robotics	3
IND 113	Materials and Processing of Manufacturing	3
MTH 121	Fundamentals of Mathematics	3
SOC SCI	Social Science elective	3
Total		15

SECOND YEAR

Fall Term

ELE 150	AC and DC Fundamentals	3
ETR 203	Electronic Devices	4
ETR 221	Electronic Controls	4
HLT	Health/PE elective	2
IND 165	Principles of Industrial Technology I	4
Total		17

Spring Term

ELE 216	Industrial Electricity	3
ELE 239	Programmable Controllers	3
INS 110	Instrumentation	3
MEC 161	Basic Fluid Mechanics Hydrauulics/Pneumatics	4
MEC 230	Mechatronic Process Control	3
SOC SCI	Social Science elective	3
Total		19
Minimum Credits Required		68