

MECHATRONICS, CERTIFICATE OF PROFICIENCY



The purpose of the program is to familiarize students with supporting concepts of mechatronics which is defined as a design process that includes a combination of mechanical engineering, electrical engineering, control engineering and computer engineering. It therefore is a multidisciplinary field. Supporting courses include programming, electronics, fluid power, etc., that will provide the student with a broad familiarity with supporting topics.

Program contact: Learn more

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.

Learn more here about how certificate credits apply to the related degree.

Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Demonstrate in a lab environment using instrumentation ohms law, power laws for Direct Current (DC) and Alternation Current (AC) circuits.
2. Demonstrate welding blue print reading skills by performing stick welding operation to specification on a specimen.
3. Use instrumentation to demonstrate fluid pressure and volume in a laboratory environment and explain the relationship between hydraulic piston area and pressure.
4. Program a Programmable Logic Controller to solve a stated problem.
5. Demonstrate programming skills in a robotics environment to solve a stated problem. Use math to determine program behavior.

Suggested Semester Sequence

First Semester		Credit Hours
ISET-1101	Welding Blue Print Reading	3
ISET-1300	Mechanical/Electrical Print Reading	2
ISET-1310	Mechanical Power Transmission	2
ISET-1410	Applied Electricity I ¹	3
ISET-1420	Applied Electricity II	3
Credit Hours		13
Second Semester		Credit Hours
EET-1100	Introduction to Robotics	2
ISET-1320	Fundamentals of Fluid Power	2

ISET-2120	Shielded Metal Arc Welding (STICK)	4
ISET-2200	Industrial Motor Controls	3
Credit Hours		11
Summer Completion		
ISET-2500	Programmable Logic Controllers Maintenance I ²	3
ISET-2510	Programmable Logic Controllers Maintenance II	2
ISET-2520	Programmable Logic Controllers Maintenance III	2
Credit Hours		7
Total Credit Hours		31

¹ ISET-1410 Applied Electricity I, 1st 8 week course, must be completed before ISET-1420 Applied Electricity II. Concurrent enrollment in ISET-1300 Mechanical/Electrical Print Reading.

² ISET-2500 Programmable Logic Controllers Maintenance I, 1st 5 or 8 week course, must be completed before ISET-2510 Programmable Logic Controllers Maintenance II.