MECHATRONICS AND AUTOMATION COMPONENTS CERTIFICATE

Division: Technology and Engineering

PROGRAM CODE: 1C43696

The **Mechatronics and Automation Components Certificate** is designed to provide the students with comprehensive knowledge about different components used in any automated system. The components covered are pneumatic, hydraulic, mechanical, motors and PLC. The program prepares students for careers in the design, operation, and maintenance of industrial automation systems focusing on the local industries that utilize these technologies, such as food production, petroleum production, fabrication, and logistics. This program focuses on the application of electronics and computer technology to industrial automation systems, including instrumentation and control, industrial robotics, and process control systems. Significant emphasis is placed on project-based learning facilitated by significant laboratory work. This certificate requires a total of 16 units.

Code	Title	Units
Required Courses (16 units):		
Courses are listed in suggested sequence		
ENGT 115 C	Electric Motors and Controls	3
ENGT 120 C	Mechanical Systems	3
ENGT 125 C	Hydraulic and Pneumatic Systems	3
ENGT 150 C	Digital Fundamentals and PLC Programming	4
ENGT 160 C	Industrial Data Network and HMI	3
Total Units		**16**

Program Student Learning Outcomes:

OUTCOME 1: Understand an automated system's structure and the role of different components in a fully integrated system.

OUTCOME 2: Demonstrate a deep understanding of an automated manufacturing platform and automation industry, including design, operation, preventative maintenance, troubleshooting, repair, and integration.

OUTCOME 3: Apply problem-solving skills in designing an automated system and product development.

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