PEIMS Code: N1303690
Abbreviation: PROLGCNT2
Grade Level(s): 11–12
Award of Credit: 1.0

Districts must have local board approval to implement innovative courses.

In accordance with Texas Administrative Code (TAC) §74.27, school districts must provide instruction in all essential knowledge and skills identified in this innovative course.

Innovative courses may only satisfy elective credit toward graduation requirements.

Please refer to TAC §74.13 for guidance on endorsements.

The purpose of the Programmable Logic Controllers (PLC) II course is to demonstrate advanced knowledge of programming of programmable logic controllers (PLC) by incorporating the use of timers, counters, and other advanced functions. The students that complete the PLC II course will gain hands-on experience in the use of PLCs in industry and be able to troubleshoot the PLCs in common industrial applications. Additionally, the course includes an introduction to human machine interfaces (HMI) and networking. The PLC II course aligns to industry standards for various brand PLCs, and the outcomes from this course will prepare the students for postsecondary education and career readiness in the industrial maintenance/manufacturing industry.

(a)   General Requirements. This course is recommended for students in grades 11th & 12th. Recommended prerequisites: Principles of Applied Engineering or Principles of Manufacturing and Programmable Logic Controllers (PLC) I. Students shall be awarded once credit for successful completion of this course.

(b)   Introduction.

(1)   Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2)   The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3)   The Programmable Logic Controllers (PLC) II course is designed to demonstrate advanced knowledge of programming of programmable logic controllers (PLC) by

incorporating the use of timers, counters, and other advanced functions. The students that complete the PLC II course will gain hands-on experience in the use of PLCs in industry and be able to troubleshoot the PLCs in common industrial applications. Additionally, the course includes an introduction to human machine interfaces (HMI) and networking. The PLC II course aligns to industry standards for various brand PLCs, and the outcomes from this course will prepare the students for postsecondary education and career readiness in the industrial maintenance/manufacturing industry.

(4)   Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5)   Statements that contain the word "including" reference content that must be

(D)   analyze the functionality of immediate input and output instructions in time-critical applications; and

(E)   demonstrate performance of nested subroutine functions.

(4)

Programmable Logic Controller II

Write a ladder logic program to create a conveyor system that uses sensors.
Use a multimeter to troubleshoot input/output malfunctions.
Visit a site to view how PLCs are used in local industries

Written exams
Projects, presentations, and group participation
Evaluation of oral and written communication skills
Completion of class assignments
Portfolio of all class assignments
Participation in a work-