NICOLET COLLEGE

Industrial Electronics Technician

Technical Diploma

Industrial electronics technicians work closely with engineers and electromechanical technicians to perform basic installation, maintenance, and repair activities for industrial electronic and mechanical equipment. This technical diploma will teach students industrial safety practices to include lockout/tag out, isolate faults, test fuses, wire motors, understand, and apply electrical principles to solve failures in the field. Students integrate these concepts with hydraulic, pneumatic, and mechanical systems. An introduction of programmable logic controllers help students develop entry-level skills in manufacturing.

Program Outline

TERM 1

Course #	Course Title	Credits
1010311500	MS Word Beginning This course will cover creating a flyer, research paper, and business letter using Microsoft Word.	1.00
1010312600	MS Excel Beginning This course will cover creating a worksheet and chart; application of formulas, functions, and formatting; and working with large worksheets, charting, and what-if analysis using Microsoft Excel.	1.00
1044910000	Industrial Safety Fundamentals Introduces general safety for a manufacturing environment while raising the awareness of the worker to the hazards around them, and how to best protect themselves while working safely. Students will earn an OSHA 30 card and confined space certificate upon completion.	2.00
1046211500	Basic Electrical Circuits Students will learn how to measure voltage, current and resistance in an electrical circuit.	1.00
1046211700	Inductance and Capacitance Students will learn how to define and calculate incuctance and capacitance in an electrical circuit.	1.00
1046211900	Analyze Transformers Students will learn how to size a transformer and how to identify the step up and step down transformers.	1.00
1062010200	Hydraulic and Pneumatic Operation Students will learn basic hydraulic and pneumatic fundamentals with associated symbology.	1.00
1062010600	Ladder Logic Elements and Control Logic Students will learn the basics of sequencing and devices used in hydraulics and pneumatics machines.	1.00
1062010900	Analyze Directional Control Valves Students will utilize the DCV's to control sequencing , timing and pressure control in hydraulic and pneumatic systems.	1.00
1062011200	PLC Fundamentals and Basic Instructions Student will learn the components of the plc and beginning level programming.	1.00

Course #	Course Title	Credits
1080119500	Written Communication Develops writing skills which include prewriting, drafting, revising, and editing. A variety of writing assignments is designed to help the learner analyze audience and purpose, research and organize ideas, and format and design documents based on subject matter and content. Also develops critical reading and thinking skills through the analysis of a variety of written documents.	3.00

TERM 2

Course #	Course Title	Credits
1046212100	Mechanical Drive Systems Students will learn how to install a drive and properly align a shoaft.	1.00
1046212400	Belt and Chain Drives Students will learn how to properly install and adjust drive components.	1.00
1062011600	Analyze the Use of Oscilloscopes Students will learn the use of the oscillope to test electronic circuits beginning with common power supply systems.	1.00
1062011800	Analyze Sensing Devices and Op Amps Students will learn the operation and troubleshooting of inductive, capacitive, optical and hall effect sensors.	1.00
1062012000	Analyze SSRs and Switching Circuits Students will learn about and troubleshoot solid state relays and switching circuits commonly used.	1.00
1062012300	Three Phase Electric Motor Control Students will learn about safety, 3 phase power transformation and manual control of three phase motor control systems.	1.00
1062012500	Investigate Troubleshooting Methods Students will learn about the types and methods of troubleshooting for 3 phase motor control systems.	1.00
1062012700	Troubleshooting Common Motor Circuits Students will examine the function and troubleshooting of reversing, automatic and timer controlled industrial motor control systems.	1.00
1062012900	PLC Timers Counters and Program Controls Students will learn the operation and the use of timer, counter, MCR and first scan program instructions	1.00
1062013300	PLC Sequencing and Data Function Blocks Students will learn the operation of event sequencing, addition, subtraction, multiplication and division function blocks.	1.00
1080413	Math with Business Applications This course integrates algebraic concepts, proportions, percents, simple interest, compound interest, annuities, and basic statistics with business/consumer scenarios. It also applies math concepts to the purchasing/buying and selling processes.	3.00
1080919900	Psychology of Human Relations Focuses on improving personal and job-related relationships through understanding and applying sound psychological principles. Topics include self-concept, motivation, emotions, stress management, conflict resolution, and human relation processes.	3.00

Total Credits: 30.00

Talk with a Success Coach about the program outline. Together, you will determine if credits you've already earned satisfy any requirements, discuss possible alternative courses, and choose the best classes if you're thinking of transferring.

At A Glance

How You'll Learn

Next Academic Start Dates

11
JAN

Spring 2027 Term Starts

15
MAR

Additional Spring 2027 Start for Select Courses

VIEW FULL CALENDAR

Program Tuition*

$6,610

Books & Supplies*

$525

*Total cost for degree completion is estimated by current course requirements, books, and supplies. Tuition and fees are set by the Wisconsin Technical College System and subject to change.

Financial Aid Eligible

▸ Potential Indirect Costs

What You'll Learn

What You'll Learn

- Perform work safely
- Troubleshoot basic electrical and mechanical systems
- Repair basic electrical and mechanical systems
- Communicate technical information
- Integrate basic electrical and mechanical systems

Your Potential Careers

- Electrical or Electronic Maint
- Field Service Technician

Median Annual Salary

Local	State	National
$47,064	$46,110	$48,445

EMSI 2022.1

Get Started

Your application can be submitted online, it takes just a few minutes to complete.

APPLY NOW