



# 2025-2026 INDUSTRIAL TRADES PROGRAMS

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**Training for skilled trades careers including:**

*Welder • Pipefitter • Machinist • Electrician • CNC Programmer  
Tool and Die Maker • Robotics Technician • Machinery Technician  
Electronics Technician • Maintenance Mechanic • Millwright  
Heating and Cooling Technician • And More!*

For more information, please visit  
[kellogg.edu/industrial](https://kellogg.edu/industrial)

# REGIONAL MANUFACTURING TECHNOLOGY CENTER

The Regional Manufacturing Technology Center (RMTc) is an innovative, community driven training facility located in the Fort Custer Industrial Park in Battle Creek, Michigan. The facility is home to Kellogg Community College's Industrial Trades and Workforce Solutions departments. Together these departments design training programs using blended learning techniques.

Training programs are designed to meet the employee training needs of area business and industry. The innovative approach to training enables the RMTc to respond to training needs quickly and efficiently. Training is available to individuals on a walk-in basis or can be scheduled to meet production and service schedules and may be provided either at the worksite or at any remote location within the community. To find out more about training available through the RMTc, visit [kellogg.edu/rmtc](http://kellogg.edu/rmtc) or call 269-965-4137.

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# CONTENTS

## Registration and Program Information

<a href="#">Programs of Study</a> .....	4
<a href="#">Students: Getting Started</a> .....	4
<a href="#">Industrial Trades</a> .....	6
<a href="#">Youth Training Opportunities</a> .....	6
<a href="#">Apprenticeship</a> .....	7
<a href="#">Customized Training for Companies</a> .....	7
<a href="#">Drops and Withdrawals</a> .....	8
<a href="#">Satisfactory Academic Progress Standards</a> .....	8

## Industrial Trades Program Information

<a href="#">Industrial Electricity and Electronics</a> .....	9
<a href="#">Industrial Heating, Ventilation, Air Conditioning and Refrigeration - HVACR</a> .....	12
<a href="#">Industrial Trades</a> .....	14
<a href="#">Industrial Pipefitting</a> .....	14
<a href="#">Industrial Machining Technology</a> .....	16
<a href="#">Millwright</a> .....	17
<a href="#">Industrial Maintenance Technician Certificate</a> .....	17
<a href="#">Renewable Energy</a> .....	18
<a href="#">Industrial Welding</a> .....	20
<a href="#">Industrial Mechanic</a> .....	22
<a href="#">Instrumentation</a> .....	22

## Branch Area Careers Center

<a href="#">Industrial Electricity and Electronics</a> .....	23
--	----

## Hastings High School

<a href="#">Industrial Welding</a> .....	25
<a href="#">Industrial Machining Technology</a> .....	25

## Eastern Academic Center

<a href="#">Industrial Welding</a> .....	26
<a href="#">Industrial Electricity and Electronics</a> .....	27

<a href="#">Directions</a> .....	30
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# REGISTRATION & PROGRAM INFORMATION

Manufacturing, Skilled Trades  
and Applied Technology

## PROGRAMS OF STUDY

### Occupational Associate Degree Programs

- Computer Integrated Machining Associate of Applied Science
- Industrial Electricity and Electronics
- Industrial Heating, Ventilation, Air Conditioning and Refrigeration
- Industrial Mechanic
- Industrial Pipefitting
- Industrial Welding
- Millwright
- Skilled Trades

### Certificate Programs

- CNC Machinist Certificate
- Industrial Electricity and Electronics
- Industrial Heating, Ventilation, Air Conditioning and Refrigeration
- Industrial Maintenance Technician
- Industrial Mechanic Level 1
- Industrial Mechanic Level 2
- Industrial Pipefitting
- Industrial Trades
- Industrial Welding
- Machinist Certificate
- Millwright Level 1
- Millwright Level 2
- Renewable Energy

## STUDENTS: GETTING STARTED

Many Industrial Trades processes and procedures are different from standard KCC processes because of the nontraditional style of instruction. The Industrial Trades Orientation details many of these differences. **Students enrolling in Industrial Trades programs should follow the following steps.**

### Apply to KCC

Apply to KCC by completing an Application for Admission at [kellogg.edu/apply](http://kellogg.edu/apply). Submit the form at least two business days before completing the Next Generation Accuplacer assessment and registering for modules.

### Admission Criteria:

Industrial Trades students must be 18 or older or a high school graduate or have earned their GED.

**Important!** Currently enrolled high school students or currently enrolled home school students ages 14 - 17 may apply through dual enrollment (additional approvals and/or materials may be required).

### Admissions Contacts

Phone: 269-965-4153

Email: [adm@kellogg.edu](mailto:adm@kellogg.edu)

Web: [kellogg.edu/admissions](http://kellogg.edu/admissions)

### Industrial Trades Orientation

Some industrial trades programs require a program orientation prior to registration. If required for a program of study, the orientation will be listed first in the program option sheets found at [Important Industrial Trades Documents | Kellogg Community College](#)

### Industrial Trades Contacts

Phone: 269-965-4137

Email: [rmtc@kellogg.edu](mailto:rmtc@kellogg.edu)

Web: [kellogg.edu/industrial](http://kellogg.edu/industrial)

## Meet with an Academic Advisor

If considering an Associate in Applied Science degree path, students should meet with academic advisor after meeting with the program instructor and completing the Next Generation Accuplacer assessment.

KCC academic advisors are available to provide additional information on:

- Next Generation Accuplacer assessment
- Other KCC programs
- Selecting general education courses
- Graduation requirements
- Navigating the transfer process
- Accessing career resources
- Seeking college resources

### Academic Advising

Phone: 269-965-4124

Email: [advising@kellogg.edu](mailto:advising@kellogg.edu)

Web: [kellogg.edu/advising/](http://kellogg.edu/advising/)

**Important!** Industrial Trades modules may not transfer to all other educational institutions. If the student is planning to transfer to another educational institution, they should speak with an academic advisor from the transfer institution regarding transferability of Industrial Trades modules. For more information about transferability, contact the RMTc at 269-965-4137.

## Apply for Financial Aid

Industrial Trades programs may be covered by financial aid. To determine financial aid eligibility, submit the Free Application for Federal Student Aid (FAFSA) online at least three months prior to the semester in which you plan to start training. This should provide sufficient time to process the application. Go to [fafsa.gov](http://fafsa.gov) to apply.

Visit [kellogg.edu/financial-aid](http://kellogg.edu/financial-aid) for eligibility requirements and information about grants, scholarships, student loans, work-study and veterans benefits. All financial aid information will be communicated via the Financial Aid Self-Service System located in the KCC Bruin Portal. Students should periodically review financial aid information through the Bruin Portal and watch for emails, which will provide financial aid information.

### Financial Aid & Scholarships

Phone: 269-965-4123

Email: [finaid@kellogg.edu](mailto:finaid@kellogg.edu)

Web: [kellogg.edu/admissions/financial-aid](http://kellogg.edu/admissions/financial-aid)

Fill out FAFSA: [fafsa.gov](http://fafsa.gov)

## Complete Assessment Testing

Assessment testing is not required for Industrial Trades certificate programs. It is only required for Industrial Trades Associate in Applied Science degree programs. Assessment scores are a prerequisite for many general education courses required for an Industrial Trades associate in Applied Science degree. Students pursuing a degree are required to complete testing prior to seeking advising.

For more information about testing and available testing hours, please contact the KCC Testing and Assessment Office.

### Testing and Assessment

Phone: 269-965-4136

Email: [testing@kellogg.edu](mailto:testing@kellogg.edu)

Web: [kellogg.edu/testing](http://kellogg.edu/testing)

## New Student Orientation

Students pursuing an associate degree must attend New Student Orientation online. New Student Orientation helps introduce students to Kellogg Community College and prepare for successful education. Orientation is designed to give students critical information about being a Bruin. For more information about New Student Orientations, please visit [kellogg.edu/new-student-orientation](http://kellogg.edu/new-student-orientation) or contact Student Life at 269-565-2634 or at [studentlife@kellogg.edu](mailto:studentlife@kellogg.edu).

## Register for Modules

Students can register for modules any of the following ways:

- In person (recommended)
- By email to [rmtc@kellogg.edu](mailto:rmtc@kellogg.edu)
- By fax to 269-962-7370

Please visit [kellogg.edu/about/departments/industrial/documents](http://kellogg.edu/about/departments/industrial/documents) for additional information and required registration forms and/or documentation.

**Important!** See the Registrar's Office web page at [kellogg.edu/admissions/registrar/tuition/address-verification](http://kellogg.edu/admissions/registrar/tuition/address-verification) for acceptable documentation for proving your residency.

## Pay for Modules

Students (including those with awarded financial aid) have two payment options:

1. Payment in full when registering
2. Enrollment in the payment plan

After registering for classes students have 24 hours to pay in full or enroll in the payment plan. Failure to pay in full or enroll in the payment plan will result in classes being dropped. To enroll in the payment plan, log in to the Bruin Portal and choose the Student Finance option in the Self-Service Section.

***Important!** In order to take advantage of this payment plan, students must register during traditional registration periods.*

### **Records and Registration**

Phone: 269-965-5522

Email: [regoffice@kellogg.edu](mailto:regoffice@kellogg.edu)

Web: [kellogg.edu/registrar](http://kellogg.edu/registrar)

### **Business Office**

Phone: 269-965-4140

Email: [busoffice@kellogg.edu](mailto:busoffice@kellogg.edu)

## INDUSTRIAL TRADES

The Industrial Trades program design offers an innovative, nontraditional style of training which incorporates competency-based modules, individualized instruction and self-paced learning within a traditional semester. Modules are credit-based and may lead to a certificate or an Associate in Applied Science. Students may also be granted prior experiential learning.

### **Individualized Instruction**

Industrial Trades instruction is instructor-facilitated instead of instructor-led. Each module contains a list of learning activities which may include reading technical manuals or textbooks, watching videos, completing online curricula, viewing presentations, completing written exercises, completing hands-on lab activities and completing written or lab-based assessments. Instructors provide one-on-one instruction to individual students as they work through these learning activities.

### **Flexible Schedules**

Please see the lab schedule for open lab hours. Students may attend at any time during these open lab hours to work on their modules, do testing, or do hands-on lab activities for their modules. Students work through modules and learning activities at their own pace within a traditional semester.

## Credit-based

All Industrial Trades modules are credit-based, which means students earn college credit for each module successfully completed. For every 24 hours of instruction, students earn one college credit hour. The credit hours and contact hours for each module are listed in the program outlines. Minimum credit requirements for certificates vary by program.

## Prior Experience

Students may be granted credit for prior learning or work experience. Many Industrial Trades students have extensive knowledge and skills, which may be equivalent to the knowledge and skills taught at the RMTC. In these cases students may apply for prior experiential credit. Students should discuss all prior learning and experience with the RMTC program instructor prior to enrollment.

## Transfer Options

Students who have completed an Associate in Applied Science degree at KCC may have options to transfer directly to a four year institution. See an academic advisor for more information.

## YOUTH TRAINING OPPORTUNITIES

The RMTC works closely with the Branch Area Careers Center and the Calhoun Area Career Center to ensure youth have pathways to manufacturing careers. Pathways may include articulation and dual enrollment opportunities.

## High School Articulation

Students interested in pursuing a career in Industrial Trades are encouraged to enroll in a program at one of the career centers during high school. Some courses taken at the career centers may be articulated with the RMTC, which means high school students may earn college credit for courses taken prior to graduation. Students must pass a KCC academic course successfully prior to being awarded articulated credit.

## Dual Enrollment/Early College

High school students may also dual enroll at the RMTC. [Dual enrolled/early college](#) students attend the RMTC and earn college credit while they are still in high school. Dedicated students can graduate from high school and an Industrial Trades program at the same time. It is important for these students to remember that the RMTC is a college-level learning environment. Its self-paced model of education

delivery offers great flexibility for students, but also requires a high level of self-direction to be successful in moving through a program. High schools with students attending the RMTC are encouraged to establish a monitoring process to make sure they are making adequate progress. KCC has an online portal through which student can track progress and make this information available to the appropriate high school personnel. For more information about youth training programs, contact the RMTC at 269-965-4137.

## APPRENTICESHIP

The RMTC works with the regional U.S. Department of Labor Office of Apprenticeship to assist companies in designing, registering and implementing apprenticeship programs. For more information about apprenticeships, contact the RMTC at [rmtc@kellogg.edu](mailto:rmtc@kellogg.edu).

## Apprenticeship Curricula

Industrial Trades curricula at the RMTC are recognized by the U.S. Department of Labor Office of Apprenticeship for registered apprenticeship programs and are used by many regional companies for related training instruction. All Industrial Trades core curricula may be used to develop an apprenticeship program:

- *Industrial Electricity and Electronics (INEL)*
- *Industrial Heating, Ventilation, Air Conditioning and Refrigeration (INHR)*
- *Industrial Machining Technology (INMT)*
- *Industrial Pipefitting (INPF)*
- *Industrial Technology (INT)*
- *Industrial Tool and Die (INTD)*
- *Industrial Welding (INWE)*
- *Instrumentation (INST)*
- *Renewable Energy (INRE)*

## Apprenticeship Programs

Apprenticeship programs are registered by companies. Students enrolled in apprenticeship programs are employed and sponsored by the registering companies. These programs are generally four years long and consist of 8,000 hours of on-the-job training and a minimum 576 hours of related training instruction. Successful completion of these programs will result in an apprenticeship certificate from the Office of Apprenticeship. Faculty at the Regional Manufacturing Technology Center will help companies develop apprenticeship programs or update existing apprenticeship programs to meet today's changing industrial standards.

## State of Michigan Electrical Licensing Requirements

Students enrolled in electrical apprenticeship programs must also be registered with the State of Michigan in order to earn an Electrical License from the State of Michigan. Contact Tim Krueger at [kruegerti@kellogg.edu](mailto:kruegerti@kellogg.edu) to learn more about state licensing requirements.

## CUSTOMIZED TRAINING FOR COMPANIES

The RMTC's unique style of training was designed specifically for the demanding and dynamic manufacturing environment. Industrial Trades programs provide a variety of training options to meet production and skilled trades training needs. The format enables companies to quickly and efficiently manage the training process. The process includes designing a training program, setting up a training account, enrolling employees in training and monitoring employee training progress.

## Design a Training Program

The topical, competency-based modules enable manufacturers to quickly and efficiently design custom training programs to meet their unique training needs with no design costs. RMTC faculty are available to consult with companies and to provide guidance on selecting modules to meet identified learning outcomes.

## Setup a Training Program

To set up a company sponsored training program, contact the RMTC at 269-965-4137. The RMTC will coordinate a meeting between RMTC faculty and company subject matter experts to outline a training program. This process may be completed in as little as 24 to 48 hours.

## Enroll Employees

Enrolling employees in a sponsored training program is just as simple. The open entry/open exit format enables companies to start students at any time during the semester without waiting for the next semester to start. It also enables companies to plan training around production schedules. To enroll an employee in a training program, both the student and the sponsor must complete the Sponsored Student Billing Authorization form. Companies are invoiced when the student enrolls in the modules.

## DROPS AND WITHDRAWALS

Students may drop or withdraw from a module during different periods. Drop and withdrawal periods are found on the lab schedule each semester. When dropping modules, students are not financially responsible for the courses. When withdrawing from modules, students are financially responsible for the courses. Withdrawing from courses affects Satisfactory Academic Progress (SAP) for financial aid recipients.

## SATISFACTORY ACADEMIC PROGRESS STANDARDS

All students receiving financial aid from federal and state sources must maintain Satisfactory Academic Progress (SAP) at Kellogg Community College. For more information, please visit [kellogg.edu/financial-aid](http://kellogg.edu/financial-aid).



# INDUSTRIAL ELECTRICITY & ELECTRONICS

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in  
Industrial Electricity and Electronics:

**60 Credits**

Certificate in Industrial Electricity  
and Electronics: **30 Credits**

Students enrolled in an Industrial  
Electricity and Electronics program will  
learn electrical safety, mathematics for  
electricians, electrical theory, the national  
electrical code, electrical motor controls,  
power distribution systems, facility  
maintenance, electrical control wiring,  
industrial electronics and programmable  
logic controllers.

**TIM KRUEGER** Professor

269-565-2818

[kruegerti@kellogg.edu](mailto:kruegerti@kellogg.edu)

**NOTE: Program information  
subject to change without notice.  
Call 269-965-4137 to verify  
current information.**

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INEL C910	<b>Electric Electronics Orientation</b>		2
INEL 05010	<b>Electrical Safety</b>	0.17	4
INEL 10010	<b>Electrical Math 1</b>	0.08	2
INEL 10020	<b>Electrical Math 2</b>	0.25	6
INEL 10030	<b>Electrical Math 3</b>	0.25	6
INEL 15010	<b>Electrical Theory</b>	0.25	6
INEL 15020	<b>Static Electricity</b>	0.25	6
INEL 15030	<b>Calculators and Electronics</b>	0.25	6
INEL 15040	<b>Devices and Symbols</b>	0.25	6
INEL 15050	<b>Multimeter</b>	0.33	8
INEL 15060	<b>Ohm's Law</b>	0.33	8
INEL 15070	<b>Series Circuits</b>	0.33	8
INEL 15080	<b>Parallel Circuits</b>	0.33	8
INEL 15090	<b>Combination Circuits</b>	0.33	8
INEL 15100	<b>Magnetism</b>	0.25	6
INEL 15110	<b>Alternating Current</b>	0.25	6
INEL 15120	<b>Oscilloscope</b>	0.33	8
INEL 15130	<b>Inductance</b>	0.42	10
INEL 15140	<b>Capacitance</b>	0.42	10
INEL 15150	<b>RLC Circuits</b>	0.33	8
INEL 15160	<b>Conduction</b>	0.33	8
INEL 15170	<b>Theory Overview</b>	0.21	5
INEL 20010	<b>Electrical Motor Controls</b>	0.42	10
INEL 20020	<b>Manual Motor Controls</b>	0.50	12
INEL 20030	<b>Control Transformers</b>	0.42	10
INEL 20040	<b>Control Ladder Logic</b>	0.67	16
INEL 20050	<b>Control Relays Motor Starters</b>	0.50	12
INEL 20060	<b>Introduction Troubleshooting</b>	0.33	8
INEL 20070	<b>Systems Troubleshooting</b>	0.42	10
INEL 20080	<b>Automatic Input Devices</b>	0.42	10
INEL 20090	<b>Electronic Sensors</b>	0.33	8
INEL 20100	<b>Basic Timer Control</b>	0.33	8
INEL 20110	<b>Timers and Counters</b>	0.25	6
INEL 25010	<b>Reversing Motor Control</b>	0.33	8
INEL 25020	<b>Braking Methods</b>	0.42	10
INEL 25030	<b>Reduced Voltage Starting</b>	0.33	8
INEL 25040	<b>Intro Frequency Drives (AC)</b>	0.33	8
INEL 25050	<b>AC Drives Speed Torque Cnt</b>	0.33	8
INEL 25060	<b>AC Drives Accel and Decel</b>	0.33	8

<b>SUBJECT/COURSE#</b>	<b>TITLE</b>	<b>CREDIT HOURS</b>	<b>CONTACT HOURS</b>	<b>SUBJECT/COURSE#</b>	<b>TITLE</b>	<b>CREDIT HOURS</b>	<b>CONTACT HOURS</b>
INEL 25070	<b>AC Drives Troubleshooting</b>	0.38	8	INEL 45080	<b>3 Phase Transformers</b>	0.50	12
INEL 25080	<b>SCR Motor Control</b>	0.42	10	INEL 45090	<b>NEC Transformer Requirements</b>	0.25	6
INEL 30010	<b>DC Series Motors</b>	0.25	6	INEL 45100	<b>Emergency Electrical Systems</b>	0.25	6
INEL 30020	<b>DC Shunt and Compound Motors</b>	0.33	8	INEL 45110	<b>Class B Fire Alarm Systems</b>	0.33	8
INEL 30030	<b>Motor Speed and Torque</b>	0.33	8	INEL 45115	<b>Advanced Fire Alarm Systems</b>	0.42	10
INEL 30040	<b>Motor Performance</b>	0.25	6	INEL 50010	<b>Electrical Control Wiring</b>	0.42	10
INEL 30050	<b>Split Phase Motors</b>	0.25	6	INEL 50020	<b>Electrical Control Systems</b>	1.00	24
INEL 30060	<b>Capacitor Start Motors</b>	0.25	6	INEL 55010	<b>Using the Oscilloscope</b>	0.67	16
INEL 30070	<b>Permanent Capacitor Motors</b>	0.25	6	INEL 55020	<b>Meters for Electronics</b>	0.33	8
INEL 30080	<b>Three Phase Motors</b>	0.33	8	INEL 55030	<b>Electronic Soldering</b>	0.25	6
INEL 35010	<b>General Wiring Fundamentals</b>	0.25	6	INEL 55040	<b>Soldering Printed Circuit Boar</b>	0.25	6
INEL 35020	<b>Wire Raceway and Box Sizing</b>	0.33	8	INEL 55050	<b>Diodes</b>	0.25	6
INEL 35030	<b>Branch Circuits</b>	0.33	8	INEL 55060	<b>Power Supplies</b>	0.50	12
INEL 35040	<b>Service Feeder Calculations</b>	0.25	6	INEL 55070	<b>Photo Devices</b>	0.33	8
INEL 35050	<b>Grounding and Bonding</b>	0.33	8	INEL 55080	<b>Solid State Devices</b>	0.83	20
INEL 35060	<b>Overcurrent Protection</b>	0.33	8	INEL 55090	<b>Electronic Timing</b>	0.33	8
INEL 35070	<b>Motor Circuit Wiring</b>	0.25	6	INEL 55100	<b>Amplifiers</b>	0.83	20
INEL 35080	<b>Transformers</b>	0.25	6	INEL 55110	<b>Digital Logic Fundamentals</b>	0.50	12
INEL 35090	<b>General Hazardous Locations</b>	0.25	6	INEL 55120	<b>Digital Logic Applications</b>	0.42	10
INEL 35100	<b>Health Care Facilities</b>	0.25	6	INEL 55130	<b>Proximity Switching</b>	0.17	4
INEL 35110	<b>Emergency Power Systems</b>	0.33	8	INEL 55140	<b>Photoelectric Devices</b>	0.17	4
INEL 35120	<b>Industrial Applications</b>	0.33	8	INEL 55150	<b>Fiber Optic Fundamentals</b>	0.33	8
INEL 35130	<b>Special Application Wiring</b>	0.25	6	INEL 55160	<b>Fiber Optic Lab</b>	0.25	6
INEL 35140	<b>NEC Review</b>	0.17	4	INEL 60010	<b>Intro Programmable Controllers</b>	0.25	6
INEL 40010	<b>Power Generation Distribution</b>	0.33	8	INEL 60020	<b>Basic PLC Programming</b>	0.50	12
INEL 40020	<b>Electrical Wiring Techniques</b>	0.33	8	INEL 60030	<b>PLC Motor Control</b>	0.50	12
INEL 40030	<b>Wiring System Installation</b>	0.42	10	INEL 60040	<b>Discrete I/O Interfacing</b>	0.33	8
INEL 40040	<b>Introduction to Raceways</b>	0.42	10	INEL 60050	<b>Intro to PLC Troubleshooting</b>	0.33	8
INEL 40050	<b>Basic Conduit Bending</b>	0.25	6	INEL 60060	<b>PLC Systems Troubleshooting</b>	0.33	8
INEL 40060	<b>Advanced Raceways</b>	0.25	6	INEL 65010	<b>Event Sequencing</b>	0.33	8
INEL 40070	<b>Conductor Overcurrent Protect</b>	0.25	6	INEL 65020	<b>Application Development</b>	0.50	12
INEL 40080	<b>Conduit Sizing Wire Pulling</b>	0.33	8	INEL 65030	<b>PLC Timer Instructions</b>	0.50	12
INEL 45010	<b>Plans and Site Work</b>	0.25	6	INEL 65040	<b>PLC Counter Instructions</b>	0.50	12
INEL 45020	<b>Industrial Power Systems</b>	0.42	10	INEL 65050	<b>Program Control Instructions</b>	0.50	12
INEL 45030	<b>Signaling Systems</b>	0.25	6	INEL 65060	<b>Math Data Move Instructions</b>	0.58	14
INEL 45040	<b>Motors Controllers Installation</b>	0.33	8	INEL 67010	<b>Siemens 300 Intro to PLCs</b>	0.50	12
INEL 45050	<b>Special Equipment &amp; HVAC</b>	0.33	8	INEL 67020	<b>Siemens 300 Basic PLC Program</b>	0.50	12
INEL 45060	<b>Industrial Hazardous Locations</b>	0.25	6	INEL 67030	<b>Siemens 300 PLC Motor Control</b>	0.50	12
INEL 45070	<b>Single Phase Transformers</b>	0.33	8	INEL 67040	<b>Siemens 300 IO Interfacing</b>	0.50	12

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS	SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INEL 67050	Siemens 300 PLC Timers	0.50	12	INEL 95030	Mechatronics Pick Place Feed	0.21	5
INEL 67060	Siemens 300 PLC Counters	0.50	12	INEL 95040	Mechatronics Gauging	0.21	5
INEL 70010	Introduction to Panel View	0.17	4	INEL 95050	Mechatronics Indexing	0.21	5
INEL 70020	Terminal Overview	0.25	6	INEL 95060	Mechatronics Sorting Queuing	0.21	5
INEL 70030	Wiring and Set Up	0.25	6	INEL 95070	Mechatronics Servo Robotic	0.21	5
INEL 70040	Terminal Configuration	0.25	6	INEL 95080	Mechatronics Torqueing	0.21	5
INEL 70050	Troubleshooting Maintenance	0.25	6	INEL 95090	Mechatronics Parts Storage	0.21	5
INEL 70060	Programming Panel View	0.83	20	INEL 95095	Mechatronics Station Program	0.21	5
INEL 70070	Panel View PLC Applications	1.04	25	INEL 95100	Mechatronics Multi Station Cn	0.21	5
INEL 70080	Panel View PLC Communication	0.21	5	*INEL C201	SACA C-201 CERTIFICATION	0	4
INEL 75010	Intro to Compact Logix PLCs	0.25	6	*INEL C202	SACA C-202 CERTIFICATION	0	4
INEL 75020	Creating RS Logix 5000 Projec	0.25	6	*INEL C204	SACA C-204 CERTIFICATION	0	4
INEL 75030	Ethernet Communication Proto	0.42	10	*INEL C207	SACA C-207 CERTIFICATION	0	4
INEL 75040	Creating RS Logix 5000 Progra	0.42	10	*INEL C208	SACA C-208 CERTIFICATION	0	4
INEL 75050	TON TOF RTO Counter Instructi	0.42	10				
INEL 75060	CU and CD Counter Instruction	0.42	10				
INEL 76010	Intro To PLC Troubleshooting	0.33	8				
INEL 76020	PLC Systems Troubleshooting	0.33	8				
INEL 76030	Event Sequencing	0.33	8				
INEL 76040	Application Development	0.50	12				
INEL 76050	Program Control Instructions	0.50	12				
INEL 76060	Math Data Move Instructions	0.58	14				
INEL 80010	Introduction Machine Safety	0.33	8				
INEL 80020	Level 1 Machine Safety	0.25	6				
INEL 80030	Level 2 Machine Safety	0.42	10				
INEL 80040	Level 3 Machine Safety	0.50	12				
INEL 80050	Machine Survey	0.33	8				
INEL 85010	Robotics Introduction	0.67	16				
INEL 85020	Programming Robotics	1.29	31				
INEL 85030	Programming Robotics FANUC	0.75	18				
INEL 85040	Programming Robo Offline FANUC	0.58	14				
INEL 85050	Programming Robotics Motoman	1.67	40				
INEL 85060	Prog Robotics Offl Motoman	1.00	24				
INEL 85070	Programming Robotics DENSO	0.42	10				
INEL 85080	Prgm Robotics Offline DENSO	0.83	20				
INEL 85090	Maint PM Troublshoot Robotic	1.04	25				
INEL 95010	Mechatronics Automation Oper	0.21	5				
INEL 95020	Mechatronics Basic Comp Adj	0.21	5				

\*Module cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the RMTC registration desk.

# HVACR INDUSTRIAL HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in  
Industrial Heating, Ventilation,  
Air Conditioning, and Refrigeration:  
**60 Credits**

Certificate in Industrial Heating,  
Ventilation, Air Conditioning,  
and Refrigeration: **25 Credits**

Students enrolled in an Industrial HVACR program at the RMTCC will learn refrigeration tools and plant safety, refrigeration fundamentals, electrical fundamentals for HVACR, refrigeration systems and components, EPA standards and certification, heating systems and troubleshooting, hydronic systems, steam systems, heat pumps and troubleshooting, air distribution and indoor air quality, HVACR automation controls, HVACR duct systems, HVACR preventative maintenance, commissioning and conservation, water treatment, supervisory skills and writing for employment.

**ANDREW REDLON** *Professor*

269-565-2813

[redlona@kellogg.edu](mailto:redlona@kellogg.edu)

**NOTE: Program information  
subject to change without notice.  
Call 269-965-4137 to verify  
current information.**

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INHR C910	<b>HVACR Orientation</b>		2
INHR 05011	<b>HVACR Safety</b>	0.83	20
INHR 05021	<b>HVACR Tools</b>	0.08	2
INHR 10011	<b>Introduction to HVACR</b>	0.33	8
INHR 10021	<b>Trade Mathematics</b>	0.42	10
INHR 10031	<b>Copper Plastic Piping Practice</b>	0.21	5
INHR 10041	<b>Soldering and Brazing</b>	0.33	8
INHR 10051	<b>Ferrous Metal Piping Practices</b>	0.63	15
INHR 12011	<b>Elec Safety &amp; Hazard Awareness</b>	0.33	8
INHR 12021	<b>Basic Elec Theory &amp; Terminology</b>	0.67	16
INHR 12031	<b>Basic Electrical Circuits</b>	0.50	12
INHR 12041	<b>Electrical Measurement</b>	0.50	12
INHR 12051	<b>Circuit Analysis</b>	1.00	24
INHR 12061	<b>Inductance &amp; Capacitance</b>	0.67	16
INHR 12071	<b>Combination Circuits</b>	0.50	12
INHR 12081	<b>Transformers</b>	0.50	12
INHR 12091	<b>Fuses &amp; Circuit Breakers</b>	0.25	6
INHR 12101	<b>Relays &amp; Contactors</b>	0.25	6
INHR 12111	<b>Magnetism and AC Fundamentals</b>	0.50	12
INHR 12121	<b>Electric Motors &amp; Controls</b>	0.50	12
INHR 12131	<b>Symbols and Wiring Diagrams</b>	0.50	12
INHR 15011	<b>Introduction to Cooling</b>	1.25	30
INHR 15021	<b>Compressors</b>	0.63	15
INHR 15031	<b>Refrigerants and Oils</b>	0.42	10
INHR 15041	<b>Metering Devices</b>	0.33	8
INHR 15051	<b>Leak Evac Recovery Charging</b>	0.83	20
INHR 15061	<b>Troubleshooting Cooling</b>	0.83	20
INHR 15071	<b>Retail Refrigeration Systems</b>	0.83	20
INHR 15081	<b>Commercial Industrial Refrig</b>	1.00	24
*INHR C410	<b>EPA Certification</b>		3
INHR 20011	<b>Introduction to Heating</b>	0.63	15
INHR 20021	<b>Troubleshooting Gas Heating</b>	0.54	13
INHR 20031	<b>Troubleshooting Oil Heat Sys</b>	0.42	10
INHR 20041	<b>Chimneys, Vents and Flues</b>	0.21	5
INHR 20051	<b>Troubleshooting Accessories</b>	0.42	10
INHR 25011	<b>Introduction Hydronic Systems</b>	0.42	10
INHR 25021	<b>Commercial Hydronic Systems</b>	0.54	13
INHR 30011	<b>Steam Systems</b>	0.63	15

<b>SUBJECT/COURSE#</b>	<b>TITLE</b>	<b>CREDIT HOURS</b>	<b>CONTACT HOURS</b>
INHR 35011	<b>Heat Pumps</b>	0.83	20
INHR 35021	<b>Troubleshooting Heat Pumps</b>	0.54	13
INHR 40011	<b>Indoor Air Quality</b>	0.63	15
INHR 40021	<b>Air Distribution Systems</b>	0.63	15
INHR 40031	<b>Commercial Airside Systems</b>	0.54	13
INHR 40041	<b>Air Quality Equipment</b>	0.33	8
INHR 40051	<b>System Balancing</b>	0.83	20
INHR 45011	<b>Digital Controls HVAC Techs</b>	0.21	5
INHR 45021	<b>Building Management Systems</b>	0.75	18
INHR 50011	<b>Sheet Metal Duct Systems</b>	0.42	10
INHR 50021	<b>Fiberglass Flexible Duct Sys</b>	0.21	5
INHR 55011	<b>Installation and Maintenance</b>	0.92	22
INHR 55021	<b>Planned Maintenance</b>	0.83	20
INHR 55031	<b>Construction Drawings Specifi</b>	1.04	25
INHR 60011	<b>System Startup and Shutdown</b>	0.96	23
INHR 60021	<b>Heating Cooling System Design</b>	1.04	25
INHR 60031	<b>Energy Conservation Equipment</b>	0.42	10
INHR 60041	<b>Alternative Heat Cool Systems</b>	0.42	10
INHR 65011	<b>Water Treatment</b>	0.42	10
INHR 70011	<b>Intro to Supervisory Skills</b>	0.63	15
INHR 75011	<b>Writing for Employment</b>	0.50	12

*\*Module cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the RMTC registration desk.*

# INDUSTRIAL TRADES

These courses provide a foundation of basic skills and knowledge for those entering construction and trades industries. The standardized curriculum covers essential topics like safety, math, hand and power tools, and employability skills.

**MATTHEW CRONKHITE** *Instructor*  
269-565-7854  
[cronkhitem@kellogg.edu](mailto:cronkhitem@kellogg.edu)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INTR 101	<b>Industrial Trades Core</b>	4	96
INTR 102	<b>Industrial Safety</b>	4	96
INTR 103	<b>Safety for Industrial</b>	4	96
INTR 104	<b>Safety for Construction Superv</b>	4	96
INTR 111	<b>Forklift</b>	0.5	12
INTR 112	<b>Power Engineering Funds 1</b>	3	72
INTR 113	<b>Power Engineering Funds 2</b>	3	72

# INDUSTRIAL PIPEFITTING

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in  
Industrial Pipefitting: **60 Credits**  
Certificate in Industrial Pipefitting:  
**25 Credits**

This program covers key concepts of installation and repair of high- and low-pressure pipe systems used in manufacturing, in the generation of electricity and in the heating and cooling of buildings. NCCER-Accredited.

**MATTHEW CRONKHITE** *Instructor*  
269-565-7854  
[cronkhitem@kellogg.edu](mailto:cronkhitem@kellogg.edu)

*\*See KCC Academic Catalog for  
graduation requirements.*

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INPF 101	<b>Pipefitting Fundamentals 1</b>	4	96
INPF 102	<b>Pipefitting Fundamentals 2</b>	3	72
INPF 103	<b>Pipefitting Fundamentals 3</b>	3	72
INPF 111	<b>Intro to Piping Fabrication</b>	4	96
INPF 112	<b>Piping Install &amp; Support</b>	3	72
INPF 211	<b>Advanced Pipefitting Apps 1</b>	4	96
INPF 212	<b>Advanced Pipefitting Apps 2</b>	4	96

**NOTE: Program information subject to  
change without notice. Call 269-965-4137  
to verify current information.**



# INDUSTRIAL MACHINING TECHNOLOGY

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in  
Computer Integrated Machining:  
**60 Credits**  
CNC Machinist Certificate: **31 Credits**  
Machinist Certificate: **16 Credits**

Students enrolled in an Industrial  
Machining Technology program will  
learn machine tool safety, precision  
measurement, lathe turning, vertical  
milling, grinding, CNC programming,  
CAM, and electronic discharge  
machine operation.

**JASON MOORE** *Professor*  
269-565-2852  
[moorej@kellogg.edu](mailto:moorej@kellogg.edu)

*\*See KCC Academic Catalog for  
program map, graduation requirements,  
and prerequisite information.*

**NOTE: Program information  
subject to change without notice.  
Call 269-965-4137 to verify  
current information.**

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INMT 100	<b>Intro to Machining Technology</b>	1	24
INMT 101	<b>Applied Technical Mathematics</b>	3	72
INMT 102	<b>Intro to Technical Drawings</b>	2	48
INMT 103	<b>Materials &amp; Process Planning</b>	1	24
INMT 104	<b>Precision Measurement 1</b>	1	24
INMT 105	<b>Precision Measurement 2</b>	2	48
INMT 120	<b>Lathe 1</b>	2	48
INMT 130	<b>Mill 1</b>	2	48
INMT 140	<b>Surface Grinding 1</b>	2	48
INMT 150	<b>CNC Mill Setup and Operation</b>	1	24
INMT 151	<b>CNC Mill Programming 1</b>	2	48
INMT 160	<b>CNC Lathe Setup and Operation</b>	1	24
INMT 161	<b>CNC Lathe Programming 1</b>	2	48
INMT 175	<b>Wire EDM Setup and Operation</b>	1	24
INMT 200	<b>Coordinate Measuring Machine (CMM)</b>	2	48
INMT 250	<b>CNC Mill Programming 2</b>	2	48
INMT 260	<b>CNC Lathe Programming 2</b>	2	48
INMT 275	<b>Wire EDM Programming</b>	2	48

# MILLWRIGHT

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science  
in Millwright: **60 Credits**  
Certificate Level 1: **17 Credits**  
Certificate Level 2: **30 Credits**

This program prepares learners for a career as skilled professionals in the millwright field. The curriculum places strong emphasis on safe work practices during installation, alignment, troubleshooting and maintenance of machinery and equipment. Coverage of math, drawings, specifications and measures are integrated throughout to ensure learners are prepared for safe and productive careers. NCCER-Accredited.

**MATTHEW CRONKHITE** *Instructor*  
269-565-7854  
[cronkhitem@kellogg.edu](mailto:cronkhitem@kellogg.edu)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INMW 101	<b>Millwright Fundamentals 1</b>	4	96
INMW 102	<b>Millwright Fundamentals 2</b>	3	72
INMW 111	<b>Millwright Applications 1</b>	3	72
INMW 112	<b>Millwright Applications 2</b>	3	72
INMW 201	<b>Pneumatics &amp; Drawings</b>	3	72
INMW 202	<b>Pumps and Fluid Power</b>	3	72
INMW 203	<b>Intro to Precision Alignment</b>	3	72
INMW 211	<b>ADV Millwright Apps 1</b>	4	96
INMW 212	<b>ADV Millwright Apps 2</b>	4	96

\*See KCC Academic Catalog for graduation requirements.

# INDUSTRIAL MAINTENANCE TECHNICIAN CERTIFICATE

## Offered at the Regional Manufacturing Technology Center

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Certificate in Industrial Maintenance  
Technician: **16 Credits**

This program is an accelerated program designed for individuals who are currently in or seeking to enter Industrial Maintenance fields. This Program provides learners with the opportunity to develop basic mechanical and electrical maintenance, troubleshooting, and repair skills en route to obtaining a Certificate in Industrial Maintenance Technician.

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INMC 101	<b>Industrial Mechanic Funds 1</b>	3	72
INMC 102	<b>Industrial Mechanical Funds 2</b>	3	72
INTR 102	<b>Industrial Safety</b>	4	96
INHR C910	<b>HVAC-R Orientation</b>		2
INHR 12011	<b>Elec Safety &amp; Hazard Awareness</b>	0.33	8
INHR 12021	<b>Basic Elec Theory &amp; Terminology</b>	0.67	16
INHR 12031	<b>Basic Electrical Circuits</b>	0.5	12
INHR 12041	<b>Electrical Measurement</b>	0.5	12
INHR 12051	<b>Circuit Analysis</b>	1	24
INHR 12071	<b>Combination Circuits</b>	0.5	12
INHR 12081	<b>Transformers</b>	0.5	12
INHR 12091	<b>Fuses &amp; Circuit Breakers</b>	0.25	6
INHR 12101	<b>Relays &amp; Contactors</b>	0.25	6
INHR 12111	<b>Magnetism and AC Fundamentals</b>	0.5	12
INHR 12121	<b>Electric Motors &amp; Controls</b>	0.5	12
INHR 12131	<b>Symbols and Wiring Diagrams</b>	0.5	12

# RENEWABLE ENERGY

## Offered at the Regional Manufacturing Technology Center

For complete information visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

### Certificate in Renewable Energy: 25 Credits

Students enrolled in the Renewable Energy Program will learn renewable energy and energy conservation, photovoltaic (PV) theory, PV system components, PV system installation, wind energy theory, wind system components and wind system installation.

*Note: The courses shown are the Electricity/Electronics and Renewable Energy courses needed to complete the Renewable Energy Certificate.*

**TIM KRUEGER** Professor  
269-565-2818  
[kruegerti@kellogg.edu](mailto:kruegerti@kellogg.edu)

**NOTE: Program information subject to change without notice. Call 269-965-4137 to verify current information.**

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INRE C910	Renewable Energy Orientation		2
INEL C910	Electric Electronics Orientation		2
INEL 05010	Electrical Safety	0.17	4
INEL 10020	Electrical Math 2	0.25	6
INEL 10030	Electrical Math 3	0.25	6
INEL 15010	Electrical Theory	0.25	6
INEL 15020	Static Electricity	0.25	6
INEL 15030	Calculators and Electronics	0.25	6
INEL 15040	Devices and Symbols	0.25	6
INEL 15050	Multimeter	0.33	8
INEL 15060	Ohm's Law	0.33	8
INEL 15070	Series Circuits	0.33	8
INEL 15080	Parallel Circuits	0.33	8
INEL 15090	Combination Circuits	0.33	8
INEL 15100	Magnetism	0.25	6
INEL 15110	Alternating Current	0.25	6
INEL 15120	Oscilloscope	0.33	8
INEL 15130	Inductance	0.42	10
INEL 15140	Capacitance	0.42	10
INEL 15150	RLC Circuits	0.33	8
INEL 15160	Conduction	0.33	8
INEL 15170	Theory Overview	0.21	5
INEL 35010	General Wiring Fundamentals	0.25	6
INEL 35020	Wire Raceway and Box Sizing	0.33	8
INEL 35030	Branch Circuits	0.33	8
INEL 35040	Service Feeder Calculations	0.25	6
INEL 35050	Grounding and Bonding	0.33	8
INEL 35060	Overcurrent Protection	0.33	8
INEL 35130	Special Application Wiring	0.25	6
INEL 40010	Power Generation Distribution	0.33	8
INEL 40020	Electrical Wiring Techniques	0.33	8
INEL 40030	Wiring System Installation	0.42	10
INEL 40040	Introduction to Raceways	0.42	10
INEL 40050	Basic Conduit Bending	0.25	6
INEL 40060	Advanced Raceways	0.25	6
INEL 40070	Conductor Overcurrent Protect	0.25	6
INEL 40080	Conduit Sizing Wire Pulling	0.33	8
INRE 05010	Modern Energy Sources	0.25	6

<b>SUBJECT/COURSE#</b>	<b>TITLE</b>	<b>CREDIT HOURS</b>	<b>CONTACT HOURS</b>
INRE 05020	<b>Personal Energy Use</b>	0.67	16
INRE 05030	<b>Industrial Energy Use</b>	0.50	12
INRE 05040	<b>Traditional Energy Sources</b>	0.33	8
INRE 05050	<b>Exotic Energy Production</b>	0.33	8
INRE 10010	<b>Intro to Photovoltaic Systems</b>	0.50	12
INRE 10020	<b>Solar Radiation</b>	0.50	12
INRE 15010	<b>Cells Modules and Arrays</b>	0.88	21
INRE 15020	<b>Inverters</b>	0.25	6
INRE 15030	<b>Batteries Charge Controllers</b>	0.33	8
INRE 15040	<b>Balance of System</b>	0.25	6
INRE 15050	<b>System Types</b>	0.67	16
INRE 20010	<b>Photovoltaic Safety</b>	0.21	5
INRE 20020	<b>Electrical NEC Requirements</b>	0.75	18
INRE 20030	<b>Site Evaluation and Sizing</b>	0.67	16
INRE 20040	<b>Construct Commissioning Troubl</b>	0.75	18
INRE 20050	<b>Photovoltaic System Project</b>	1.00	24
INRE 25010	<b>Wind System Introduction</b>	0.33	8
INRE 25020	<b>History of Wind</b>	0.42	10
INRE 25030	<b>Meteorology and Geography</b>	0.33	8
INRE 25040	<b>Mechanics of the Wind</b>	0.33	8
INRE 30010	<b>Turbine Technology</b>	0.67	16
INRE 30020	<b>DC Generation Principles</b>	0.58	14
INRE 30030	<b>AC Generation Principles</b>	0.42	10
INRE 30040	<b>Towers</b>	0.25	6
INRE 35010	<b>Wind Safety</b>	0.33	8
INRE 35020	<b>Wind Application</b>	0.33	8
INRE 35030	<b>Buying a Wind System</b>	0.50	12
INRE 35040	<b>Siting</b>	0.58	14
INRE 35050	<b>System Installation</b>	0.67	16
INRE 35060	<b>System Operation</b>	0.33	8

# INDUSTRIAL WELDING

## Offered at the Regional Manufacturing Technology Center

For complete information visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in Industrial Welding:

**60 Credits**

Certificate in Industrial Welding:

**25 Credits**

Students enrolled in an Industrial Welding program at the RMTC will learn about gases used in welding, cutting processes, brazing and soldering, joints, shielded metal arc welding, advanced arc welding, welding metallurgy, gas metal arc welding, gas tungsten arc welding and pipe welding.

**STEVE CASSELMAN** *Professor*

269-565-2832

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**BRANDON MCALLISTER**

*Instructional Assistant*

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**NOTE: Program information subject to change without notice. Call 269-965-4137 to verify current information.**

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INWE C910	<b>Welding Orientation</b>		2
INWE 05010	<b>Welding Shop Safety Rules</b>	0.17	4
INWE 05020	<b>Joints Welds Positions</b>	0.13	3
INWE 05030	<b>Rules and Squares</b>	0.13	3
INWE 10010	<b>Oxy-Fuel Welding Terms</b>	0.17	4
INWE 10020	<b>Set Up Oxy-Fuel Weld Stat</b>	0.08	2
INWE 10030	<b>Run Beads w/wo Fill</b>	0.29	7
INWE 10040	<b>Weld Joints Flat Position</b>	1.00	24
INWE 15010	<b>Basic Cutting Practices</b>	0.13	3
INWE 15020	<b>Cut Ferrous Met w Oxy Fuel</b>	0.33	8
INWE 15030	<b>Cutting Metals w Plasma</b>	0.33	8
INWE 20010	<b>Braz Joints Flat Position</b>	0.33	8
INWE 20020	<b>Braz V-Groove Joints</b>	0.21	5
INWE 20030	<b>Silver Braz Dissimilar Metals</b>	0.13	3
INWE 20040	<b>Lead Soldering Seams</b>	0.25	6
INWE 25010	<b>SMAW Terms Definitions</b>	0.17	4
INWE 25020	<b>Electrodes for SMAW</b>	0.21	5
INWE 25030	<b>Strike Arc Run Beads</b>	0.67	16
INWE 25040	<b>Analyze Weld Characteristics</b>	0.13	3
INWE 25050	<b>Multipass Fillet Welds</b>	0.50	12
INWE 25060	<b>Weld Size Weave Technique</b>	0.50	12
INWE 25070	<b>Corner Joint Flat Position</b>	0.67	16
INWE 25080	<b>V-Groove Butt w Backing</b>	0.50	12
INWE 25090	<b>V-Groove Butt w/o Backing</b>	0.67	16
INWE 30010	<b>Tee Joints Vertical Up</b>	0.58	14
INWE 30020	<b>Butt w Back Vertical Up</b>	0.46	11
INWE 30030	<b>Butt w/o Back Vertical Up</b>	0.75	18
INWE 30040	<b>Tee Joints Vertical Down</b>	0.29	7
INWE 30050	<b>Butt w Back Vertical Down</b>	0.42	10
INWE 30060	<b>Butt w/o Back Vertical Down</b>	0.33	8
INWE 30070	<b>Butt w Back Horizontal</b>	0.50	12
INWE 30080	<b>Butt w/o Back Horizontal</b>	0.50	12
INWE 30090	<b>Tee Joints Overhead</b>	0.50	12
INWE 30100	<b>Butt w Back Overhead</b>	0.58	14
INWE 30110	<b>Butt w/o Back Overhead</b>	0.83	20
INWE 35010	<b>Intro to Metallurgy</b>	0.46	11
INWE 35020	<b>Examine Identify Metals</b>	0.13	3
INWE 35030	<b>Metallurgy Fund Cast Iron</b>	0.13	3

<b>SUBJECT/COURSE#</b>	<b>TITLE</b>	<b>CREDIT HOURS</b>	<b>CONTACT HOURS</b>
INWE 35040	<b>Metallurgy Fund Stainless</b>	0.13	3
INWE 35050	<b>Testing Metals</b>	0.42	10
INWE 40010	<b>Explaining GMAW</b>	0.29	7
INWE 40020	<b>Start Arc Run Beads GMAW</b>	0.17	4
INWE 40030	<b>GMAW FCAW Weld All Positions</b>	1.67	40
INWE 40040	<b>GMAW of Aluminum</b>	0.67	16
INWE 45010	<b>Explaining GTAW</b>	0.42	10
INWE 45020	<b>Start Arc Run Beads GTAW</b>	0.42	10
INWE 45030	<b>GTAW Aluminum Flat Position</b>	1.25	30
INWE 45040	<b>Basic Joints Stainless</b>	1.25	30
INWE 45050	<b>GTAW Aluminum Out Position</b>	1.67	40
INWE 50010	<b>Identifying Pipe Welding</b>	0.21	5
INWE 50020	<b>2G Fixed Position</b>	0.83	20
INWE 50030	<b>5G Fixed Vertical Up</b>	1.25	30
INWE 50040	<b>5G Fixed Vertical Down</b>	1.04	25
INWE 50050	<b>6G Fixed Position</b>	1.04	25
INWE 55010	<b>Welding Blueprint Reading</b>	0.17	4
INWE 55020	<b>Fabricating a Project</b>	0.50	12
INWE 55030	<b>Cast Iron Repair</b>	0.17	4
INWE 55040	<b>Hardsurfacing</b>	0.17	4
INWE 55050	<b>Tool and Die Welding</b>	0.67	16
*INWE C710	<b>Basic Welding Project</b>		2
*INWE C720	<b>Intermediate Welding Project</b>		4
*INWE C730	<b>Advanced Welding Project</b>		6

*\*Module cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the RMTC registration desk.*



# INDUSTRIAL MECHANIC

Offered at the  
**Regional Manufacturing  
Technology Center**

For complete information  
visit [kellogg.edu/industrial](http://kellogg.edu/industrial)

Associate in Applied Science in  
Industrial Mechanic: **60 Credits**  
Certificate Level 1: **17 Credits**  
Certificate Level 2: **30 Credits**

The rigorous Industrial Maintenance Mechanic curriculum prepares learners for a career as skilled industrial maintenance mechanics. It covers the concepts professional maintenance mechanics need to safely install, maintain, repair, and dismantle equipment in a range of applications, from assembly plants to power manufacturers. NCCER-Accredited.

**MATTHEW CRONKHITE** *Instructor*  
269-565-7854  
[cronkhitem@kellogg.edu](mailto:cronkhitem@kellogg.edu)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INMC 101	<b>Industrial Mechanic Funds 1</b>	3	72
INMC 102	<b>Industrial Mechanical Funds 2</b>	3	72
INMC 103	<b>Industrial Mechanic Funds 3</b>	2	48
INMC 111	<b>Piping Systems &amp; Applications</b>	3	72
INMC 112	<b>Thermal Power Applications</b>	4	96
INMC 201	<b>Industrial Mechanic Apps 1</b>	3	72
INMC 202	<b>Industrial Mechanic Apps 2</b>	3	72
INMC 211	<b>ADV Ind Mech Applications 1</b>	3	72
INMC 212	<b>ADV Ind Mech Applications 2</b>	4	96

*\*See KCC Academic Catalog for graduation requirements.*

# INSTRUMENTATION

These courses cover the use of instruments and devices to measure, monitor, and control industrial processes such as temperature, pressure, flow, and level. These instruments ensure that processes operate efficiently, safely, and within set parameters by providing real-time data and feedback to control systems, and they play a crucial role in industries like oil and gas, chemical manufacturing, power generation, and water treatment.

**MATTHEW CRONKHITE** *Instructor*  
269-565-7854  
[cronkhitem@kellogg.edu](mailto:cronkhitem@kellogg.edu)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INST 101	<b>Instrumentation Fundamentals</b>	4	96
INST 102	<b>Instrumentation Applications</b>	4	96

**NOTE: Program information subject to change without notice. Call 269-965-4137 to verify current information.**

# OTHER LOCATIONS

Various modules from some programs are offered at other locations, including the Branch Area Careers Center (Coldwater), the Eastern Academic Center (Albion) and Hastings High School (Hastings).

For more information, please contact the following:

**BRANCH AREA CAREERS CENTER  
INFORMATION – CONTACT THE RMTCC**  
269-965-4137

**EASTERN ACADEMIC CENTER**  
517-630-8169

**HASTINGS HIGH SCHOOL  
INFORMATION - CONTACT THE RMTCC**  
269-965-4137

# ARTICULATION

High school students can earn college credit toward a certificate or degree while still in high school through their local career center. For more information, call 269-965-4137.

**CALHOUN AREA CAREER CENTER**  
475 E. Roosevelt Avenue  
Battle Creek, MI 49017  
269-968-2271  
[calhounisd.org/CACC](http://calhounisd.org/CACC)

**BRANCH AREA CAREERS CENTER**  
366 Morse Street  
Coldwater, MI 49036  
517-279-5721  
[branch-isd.org/BACC](http://branch-isd.org/BACC)

Note: Articulated credit is not awarded until an academic KCC course is successfully completed.

**NOTE: Program information subject to change without notice. Call 269-965-4137 to verify current information.**

# Industrial Electricity/ Electronics Modules offered at the Branch Area Careers Center\*

*\*Availability of this program is dependent on enrollment.*

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INEL C910	<b>Electric Electronics Orientation</b>		2
INEL 05010	<b>Electrical Safety</b>	0.17	4
INEL 10010	<b>Electrical Math 1</b>	0.08	2
INEL 10020	<b>Electrical Math 2</b>	0.25	6
INEL 10030	<b>Electrical Math 3</b>	0.25	6
INEL 15010	<b>Electrical Theory</b>	0.25	6
INEL 15020	<b>Static Electricity</b>	0.25	6
INEL 15030	<b>Calculators and Electronics</b>	0.25	6
INEL 15040	<b>Devices and Symbols</b>	0.25	6
INEL 15050	<b>Multimeter</b>	0.33	8
INEL 15060	<b>Ohm's Law</b>	0.33	8
INEL 15070	<b>Series Circuits</b>	0.33	8
INEL 15080	<b>Parallel Circuits</b>	0.33	8
INEL 15090	<b>Combination Circuits</b>	0.33	8
INEL 15100	<b>Magnetism</b>	0.25	6
INEL 15110	<b>Alternating Current</b>	0.25	6
INEL 15120	<b>Oscilloscope</b>	0.33	8
INEL 15130	<b>Inductance</b>	0.42	10
INEL 15140	<b>Capacitance</b>	0.42	10
INEL 15150	<b>RLC Circuits</b>	0.33	8
INEL 15160	<b>Conduction</b>	0.33	8
INEL 15170	<b>Theory Overview</b>	0.21	5
INEL 20010	<b>Electrical Motor Controls</b>	0.42	10
INEL 20020	<b>Manual Motor Controls</b>	0.50	12
INEL 20030	<b>Control Transformers</b>	0.42	10
INEL 20040	<b>Control Ladder Logic</b>	0.67	16
INEL 20050	<b>Control Relays Motor Starters</b>	0.50	12
INEL 20060	<b>Introduction Troubleshooting</b>	0.33	8
INEL 20070	<b>Systems Troubleshooting</b>	0.42	10
INEL 20080	<b>Automatic Input Devices</b>	0.42	10
INEL 20090	<b>Electronic Sensors</b>	0.33	8
INEL 20100	<b>Basic Timer Control</b>	0.33	8
INEL 20110	<b>Timers and Counters</b>	0.25	6

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS	SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INEL 35010	<b>General Wiring Fundamentals</b>	0.25	6	INEL 55040	<b>Soldering Printed Circuit Boar</b>	0.25	6
INEL 35020	<b>Wire Raceway and Box Sizing</b>	0.33	8	INEL 55050	<b>Diodes</b>	0.25	6
INEL 35030	<b>Branch Circuits</b>	0.33	8	INEL 55060	<b>Power Supplies</b>	0.50	12
INEL 35040	<b>Service Feeder Calculations</b>	0.25	6	INEL 55070	<b>Photo Devices</b>	0.33	8
INEL 35050	<b>Grounding and Bonding</b>	0.33	8	INEL 55080	<b>Solid State Devices</b>	0.83	20
INEL 35060	<b>Overcurrent Protection</b>	0.33	8	INEL 55090	<b>Electronic Timing</b>	0.33	8
INEL 35070	<b>Motor Circuit Wiring</b>	0.25	6	INEL 55100	<b>Amplifiers</b>	0.83	20
INEL 35080	<b>Transformers</b>	0.25	6	INEL 55110	<b>Digital Logic Fundamentals</b>	0.50	12
INEL 35090	<b>General Hazardous Locations</b>	0.25	6	INEL 55120	<b>Digital Logic Applications</b>	0.42	10
INEL 35100	<b>Health Care Facilities</b>	0.25	6	INEL 55130	<b>Proximity Switching</b>	0.17	4
INEL 35110	<b>Emergency Power Systems</b>	0.33	8	INEL 55140	<b>Photoelectric Devices</b>	0.17	4
INEL 35120	<b>Industrial Applications</b>	0.33	8	INEL 55150	<b>Fiber Optic Fundamentals</b>	0.33	8
INEL 35130	<b>Special Application Wiring</b>	0.25	6	INEL 55160	<b>Fiber Optic Lab</b>	0.25	6
INEL 35140	<b>NEC Review</b>	0.17	4				
INEL 40010	<b>Power Generation Distribution</b>	0.33	8				
INEL 40020	<b>Electrical Wiring Techniques</b>	0.33	8				
INEL 40030	<b>Wiring System Installation</b>	0.42	10				
INEL 40040	<b>Introduction to Raceways</b>	0.42	10				
INEL 40050	<b>Basic Conduit Bending</b>	0.25	6				
INEL 40060	<b>Advanced Raceways</b>	0.25	6				
INEL 40070	<b>Conductor Overcurrent Protect</b>	0.25	6				
INEL 40080	<b>Conduit Sizing Wire Pulling</b>	0.33	8				
INEL 45010	<b>Plans and Site Work</b>	0.25	6				
INEL 45020	<b>Industrial Power Systems</b>	0.42	10				
INEL 45030	<b>Signaling Systems</b>	0.25	6				
INEL 45040	<b>Motors Controllers Installation</b>	0.33	8				
INEL 45050	<b>Special Equipment &amp; HVAC</b>	0.33	8				
INEL 45060	<b>Industrial Hazardous Locations</b>	0.25	6				
INEL 45070	<b>Single Phase Transformers</b>	0.33	8				
INEL 45080	<b>3 Phase Transformers</b>	0.50	12				
INEL 45090	<b>NEC Transformer Requirements</b>	0.25	6				
INEL 45100	<b>Emergency Electrical Systems</b>	0.25	6				
INEL 50010	<b>Electrical Control Wiring</b>	0.42	10				
INEL 50020	<b>Electrical Control Systems</b>	1.00	24				
INEL 55010	<b>Using the Oscilloscope</b>	0.67	16				
INEL 55020	<b>Meters for Electronics</b>	0.33	8				
INEL 55030	<b>Electronic Soldering</b>	0.25	6				

*Please note: Kellogg Community College offers additional Industrial Electricity/Electronics modules at the Regional Manufacturing Technology Center in Battle Creek and the Eastern Academic Center in Albion.*

## Industrial Welding Modules offered at Hastings High School\*

\*Availability of this program is dependent on enrollment.

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INWE C910	<b>Welding Orientation</b>		2
INWE 05010	<b>Welding Shop Safety Rules</b>	0.17	4
INWE 05020	<b>Joints Welds Positions</b>	0.13	3
INWE 05030	<b>Rules and Squares</b>	0.13	3
INWE 10010	<b>Oxy-Fuel Welding Terms</b>	0.17	4
INWE 10020	<b>Set Up Oxy-Fuel Weld Stat</b>	0.08	2
INWE 10030	<b>Run Beads w/wo Fill</b>	0.29	7
INWE 10040	<b>Weld Joints Flat Position</b>	1.00	24
INWE 15010	<b>Basic Cutting Practices</b>	0.13	3
INWE 15020	<b>Cut Ferrous Met w Oxy Fuel</b>	0.33	8
INWE 15030	<b>Cutting Metals w Plasma</b>	0.33	8
INWE 20010	<b>Braz Joints Flat Position</b>	0.33	8
INWE 20020	<b>Braz V-Groove Joints</b>	0.21	5
INWE 20030	<b>Silver Braz Dissimilar Metals</b>	0.13	3
INWE 20040	<b>Lead Soldering Seams</b>	0.25	6
INWE 25010	<b>SMAW Terms Definitions</b>	0.17	4
INWE 25020	<b>Electrodes for SMAW</b>	0.21	5
INWE 25030	<b>Strike Arc Run Beads</b>	0.67	16
INWE 25040	<b>Analyze Weld Characteristics</b>	0.13	3
INWE 25050	<b>Multipass Fillet Welds</b>	0.50	12
INWE 25060	<b>Weld Size Weave Technique</b>	0.50	12
INWE 25070	<b>Corner Joint Flat Position</b>	0.67	16
INWE 25080	<b>V-Groove Butt W Backing</b>	0.50	12
INWE 25090	<b>V-Groove Butt wo Backing</b>	0.67	16
INWE 30010	<b>Tee Joints Vertical Up</b>	0.58	14
INWE 30020	<b>Butt w Back Vertical Up</b>	0.46	11
INWE 30030	<b>Butt w/o Back Vertical Up</b>	0.75	18
INWE 30040	<b>Tee Joints Vertical Down</b>	0.29	7
INWE 30050	<b>Butt w Back Vertical Down</b>	0.42	10
INWE 30060	<b>Butt w/o Back Vertical Down</b>	0.33	8
INWE 30070	<b>Butt w Back Horizontal</b>	0.50	12
INWE 30080	<b>Butt w/o Back Horizontal</b>	0.50	12
INWE 30090	<b>Tee Joints Overhead</b>	0.50	12
INWE 30100	<b>Butt w Back Overhead</b>	0.58	14
INWE 30110	<b>Butt w/o Back Overhead</b>	0.83	20
INWE 35010	<b>Intro to Metallurgy</b>	0.46	11
INWE 35020	<b>Examine Identify Metals</b>	0.13	3
INWE 35030	<b>Metallurgy Fund Cast Iron</b>	0.13	3
INWE 35040	<b>Metallurgy Fund Stainless</b>	0.13	3
INWE 35050	<b>Testing Metals</b>	0.42	10
INWE 40010	<b>Explaining GMAW</b>	0.29	7
INWE 40020	<b>Start Arc Run Beads GMAW</b>	0.17	4
INWE 40030	<b>GMAW FCAW Weld All Positions</b>	1.67	40
INWE 45010	<b>Explaining GTAW</b>	0.42	10
INWE 45020	<b>Start Arc Run Beads GTAW</b>	0.42	10
INWE 45030	<b>GTAW Aluminum Flat Position</b>	1.25	30
INWE 45040	<b>Basic Joints Stainless</b>	1.25	30
INWE 45050	<b>GTAW Aluminum Out Position</b>	1.67	40

Please note: Kellogg Community College offers additional Industrial Welding modules at the Regional Manufacturing Technology Center in Battle Creek and the Eastern Academic Center in Albion.

## Industrial Machining Technology Modules offered at Hastings High School\*

\*Availability of this program is dependent on enrollment.

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INMT C910	<b>Machining Tech Orientation</b>		2
INMT 05010	<b>Machinery's Handbook</b>	0.17	4
INMT 10010	<b>Machine Tool Safety</b>	0.17	4
INMT 15010	<b>Machine Tool Blueprint Read</b>	0.83	20
INMT 15020	<b>Geometric Dimension Tolerance</b>	0.33	8
INMT 20020	<b>Machine Tool Math</b>	0.75	18
INMT 20030	<b>Machinist Scale</b>	0.08	2
INMT 20060	<b>Combination Square</b>	0.08	2
INMT 20080	<b>Surface Gage</b>	0.08	2
INMT 20090	<b>Identify Surface Finishes</b>	0.08	2
INMT 25010	<b>Micrometer</b>	0.13	3
INMT 25020	<b>Caliper Digital Vern Dial</b>	0.17	4
INMT 25030	<b>Telescoping Gages</b>	0.13	3
INMT 25040	<b>Depth Micrometer</b>	0.13	3
INMT 25050	<b>Dial Indicators</b>	0.13	3
INMT 25060	<b>Gage Blocks</b>	0.13	3
INMT 25070	<b>Machine Shop Trigonometry</b>	0.67	16
INMT 25080	<b>Height Gage</b>	0.17	4
INMT 25090	<b>Sine Bar</b>	0.17	4
INMT 30010	<b>Shop Math Speeds and Feeds</b>	0.21	5
INMT 30020	<b>Sharpening Drill Bits</b>	0.25	6
INMT 30030	<b>Drilling on the Drill Press</b>	0.17	4
INMT 30040	<b>Reaming on the Drill Press</b>	0.13	3
INMT 30050	<b>Counterbore Spotface Countersi</b>	0.21	5
INMT 30060	<b>Hand Tap on the Drill Press</b>	0.21	5
INMT 30070	<b>Power Tap on the Drill Press</b>	0.25	6
INMT 30080	<b>Drill Press Project</b>	0.58	14
INMT 30090	<b>Band Saw Blade Welding</b>	0.25	6
INMT 30100	<b>Vertical Band Saw Project</b>	0.25	6
INMT 35010	<b>Maintaining the Lathe</b>	0.17	4
INMT 35020	<b>Grinding Lathe Tools</b>	0.25	6
INMT 35030	<b>Facing on the Lathe</b>	0.21	5
INMT 35040	<b>Aligning Lathe Centers</b>	0.17	4
INMT 35050	<b>Parallel Turning on the Lathe</b>	0.21	5
INMT 35070	<b>Cut Radii and External Tapers</b>	0.5	12
INMT 35080	<b>Knurling on the Lathe</b>	0.13	3
INMT 45010	<b>Dial in Vise Tram in Head</b>	0.21	5
INMT 45020	<b>Fly Cutter End Mill Sq Block</b>	0.21	5
INMT 45030	<b>Tilt Head Turn Vise Cut V</b>	0.5	12
INMT 45040	<b>Digital Read Drill Tap Ream</b>	0.25	6
INMT 45090	<b>Indexing Head to Cut Keyways</b>	0.17	4

Please note: Kellogg Community College offers additional Industrial Machining Technology modules at the Regional Manufacturing Technology Center in Battle Creek.

# Industrial Welding Courses offered at the Eastern Academic Center

For more information visit  
[kellogg.edu/industrial](http://kellogg.edu/industrial)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INWE C910	<b>Welding Orientation</b>		2
INWE 05010	<b>Welding Shop Safety Rules</b>	0.17	4
INWE 05020	<b>Joints Welds Positions</b>	0.13	3
INWE 05030	<b>Rules and Squares</b>	0.13	3
INWE 10010	<b>Oxy-Fuel Welding Terms</b>	0.17	4
INWE 10020	<b>Set Up Oxy-Fuel Weld Stat</b>	0.08	2
INWE 10030	<b>Run Beads w/wo Fill</b>	0.29	7
INWE 10040	<b>Weld Joints Flat Position</b>	1.00	24
INWE 15010	<b>Basic Cutting Practices</b>	0.13	3
INWE 15020	<b>Cut Ferrous Met w Oxy Fuel</b>	0.33	8
INWE 15030	<b>Cutting Metals w Plasma</b>	0.33	8
INWE 20010	<b>Braz Joints Flat Position</b>	0.33	8
INWE 20020	<b>Braz V-Groove Joints</b>	0.21	5
INWE 20030	<b>Silver Braz Dissimilar Metals</b>	0.13	3
INWE 20040	<b>Lead Soldering Seams</b>	0.25	6
INWE 25010	<b>SMAW Terms Definitions</b>	0.17	4
INWE 25020	<b>Electrodes for SMAW</b>	0.21	5
INWE 25030	<b>Strike Arc Run Beads</b>	0.67	16
INWE 25040	<b>Analyze Weld Characteristics</b>	0.13	3
INWE 25050	<b>Mulitpass Fillet Welds</b>	0.50	12
INWE 25060	<b>Weld Size Weave Technique</b>	0.50	12
INWE 25070	<b>Corner Joint Flat Position</b>	0.67	16
INWE 25080	<b>V-Groove Butt w Backing</b>	0.50	12
INWE 25090	<b>V-Groove Butt w/o Backing</b>	0.67	16
INWE 30010	<b>Tee Joints Vertical Up</b>	0.58	14
INWE 30020	<b>Butt w Back Vertical Up</b>	0.46	11
INWE 30030	<b>Butt w/o Back Vertical Up</b>	0.75	18
INWE 30040	<b>Tee Joints Vertical Down</b>	0.29	7
INWE 30050	<b>Butt w Back Vertical Down</b>	0.42	10
INWE 30060	<b>Butt w/o Back Vertical Down</b>	0.33	8
INWE 30070	<b>Butt w Back Horizontal</b>	0.50	12
INWE 30080	<b>Butt w/o Back Horizontal</b>	0.50	12
INWE 30090	<b>Tee Joints Overhead</b>	0.50	12

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INWE 30100	<b>Butt w Back Overhead</b>	0.58	14
INWE 30110	<b>Butt w/o Back Overhead</b>	0.83	20
INWE 35010	<b>Intro to Metallurgy</b>	0.46	11
INWE 35020	<b>Examine Identify Metals</b>	0.13	3
INWE 35030	<b>Metallurgy Fund Cast Iron</b>	0.13	3
INWE 35040	<b>Metallurgy Fund Stainless</b>	0.13	3
INWE 35050	<b>Testing Metals</b>	0.42	10
INWE 40010	<b>Explaining GMAW</b>	0.29	7
INWE 40020	<b>Start Arc Run Beads GMAW</b>	0.17	4
INWE 40030	<b>GTAW FCAW Weld All Positions</b>	1.67	40
INWE 40040	<b>GMAW of Aluminum</b>	0.67	16
INWE 45010	<b>Explaining GTAW</b>	0.42	10
INWE 45020	<b>Start Arc Run Beads GTAW</b>	0.42	10
INWE 45030	<b>GTAW Aluminum Flat Position</b>	1.25	30
INWE 45040	<b>Basic Joints Stainless</b>	1.25	30
INWE 45050	<b>GTAW Aluminum Out Position</b>	1.67	40
INWE 50010	<b>Identifying Pipe Welding</b>	0.21	5
INWE 50020	<b>2G Fixed Position</b>	0.83	20
INWE 50030	<b>5G Fixed Vertical Up</b>	1.25	30
INWE 50040	<b>5G Fixed Vertical Down</b>	1.04	25
INWE 50050	<b>6G Fixed Position</b>	1.04	25
INWE 55010	<b>Welding Blueprint Reading</b>	0.17	4
INWE 55020	<b>Fabricating a Project</b>	0.50	12
INWE 55030	<b>Cast Iron Repair</b>	0.17	4
INWE 55040	<b>Hardsurfacing</b>	0.17	4
INWE 55050	<b>Tool and Die Welding</b>	0.67	16
*INWE C710	<b>Basic Welding Project</b>		2
*INWE C720	<b>Intermediate Welding Project</b>		4
*INWE C730	<b>Advanced Welding Project</b>		6

## PRESTON GRAHAM

*Instructor*

517-629-7548

[grahamp@kellogg.edu](mailto:grahamp@kellogg.edu)

*\*Module cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the EAC registration desk.*

# Industrial Electricity and Electronics Modules offered at the Eastern Academic Center

For more information visit  
[kellogg.edu/industrial](http://kellogg.edu/industrial)

SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS	SUBJECT/COURSE#	TITLE	CREDIT HOURS	CONTACT HOURS
INEL C910	Electric Electronics Orientation		2	INEL 35050	Grounding and Bonding	0.33	8
INEL 05010	Electrical Safety	0.17	4	INEL 35060	Overcurrent Protection	0.33	8
INEL 10010	Electrical Math 1	0.08	2	INEL 35070	Motor Circuit Wiring	0.25	6
INEL 10020	Electrical Math 2	0.25	6	INEL 35080	Transformers	0.25	6
INEL 10030	Electrical Math 3	0.25	6	INEL 35090	General Hazardous Locations	0.25	6
INEL 15010	Electrical Theory	0.25	6	INEL 35100	Health Care Facilities	0.25	6
INEL 15020	Static Electricity	0.25	6	INEL 35110	Emergency Power Systems	0.33	8
INEL 15030	Calculators and Electronics	0.25	6	INEL 35120	Industrial Applications	0.33	8
INEL 15040	Devices and Symbols	0.25	6	INEL 35130	Special Application Wiring	0.25	6
INEL 15050	Multimeter	0.33	8	INEL 35140	NEC Review	0.17	4
INEL 15060	Ohm's Law	0.33	8	INEL 50010	Electrical Control Wiring	0.42	10
INEL 15070	Series Circuits	0.33	8	INEL 50020	Electrical Control Systems	1.00	24
INEL 15080	Parallel Circuits	0.33	8	INEL 55010	Using the Oscilloscope	0.67	16
INEL 15090	Combination Circuits	0.33	8	INEL 55020	Meters for Electronics	0.33	8
INEL 15100	Magnetism	0.25	6	INEL 55030	Electronic Soldering	0.25	6
INEL 15110	Alternating Current	0.25	6	INEL 55040	Soldering Printed Circuit Boar	0.25	6
INEL 15120	Oscilloscope	0.33	8	INEL 55050	Diodes	0.25	6
INEL 15130	Inductance	0.42	10	INEL 55060	Power Supplies	0.50	12
INEL 15140	Capacitance	0.42	10	INEL 55070	Photo Devices	0.33	8
INEL 15150	RLC Circuits	0.33	8	INEL 55080	Solid State Devices	0.83	20
INEL 15160	Conduction	0.33	8	INEL 55090	Electronic Timing	0.33	8
INEL 15170	Theory Overview	0.21	5	INEL 55100	Amplifiers	0.83	20
INEL 20010	Electrical Motor Controls	0.42	10	INEL 55110	Digital Logic Fundamentals	0.50	12
INEL 20020	Manual Motor Controls	0.50	12	INEL 55120	Digital Logic Applications	0.42	10
INEL 20030	Control Transformers	0.42	10	INEL 55130	Proximity Switching	0.17	4
INEL 20040	Control Ladder Logic	0.67	16	INEL 55140	Photoelectric Devices	0.17	4
INEL 20050	Control Relays Motor Starters	0.50	12	INEL 55150	Fiber Optic Fundamentals	0.33	8
INEL 20060	Introduction Troubleshooting	0.33	8	INEL 55160	Fiber Optic Lab	0.25	6
INEL 20070	Systems Troubleshooting	0.42	10	INEL 75010	Intro to Compact Logix PLCs	0.25	6
INEL 20080	Automatic Input Devices	0.42	10	INEL 75020	Creating RS Logix 5000 Projec	0.25	6
INEL 20090	Electronic Sensors	0.33	8	INEL 75030	Ethernet Communication Proto	0.42	10
INEL 20100	Basic Timer Control	0.33	8	INEL 75040	Creating RS Logix 5000 Progra	0.42	10
INEL 20110	Timers and Counters	0.25	6	INEL 75050	TON TOF RTO Counter Instructi	0.42	10
INEL 25010	Reversing Motor Control	0.33	8	INEL 75060	CU and CD Counter Instruction	0.42	10
INEL 25020	Braking Methods	0.42	10	INEL 76010	Intro To PLC Troubleshooting	0.33	8
INEL 25030	Reduced Voltage Starting	0.33	8	INEL 76020	PLC Systems Troubleshooting	0.33	8
INEL 25040	Intro Frequency Drives (AC)	0.33	8	INEL 76030	Event Sequencing	0.33	8
INEL 25050	AC Drives Speed Torque Cnt	0.33	8	INEL 76040	Application Development	0.50	12
INEL 25060	AC Drives Accel and Decel	0.33	8	INEL 76050	Program Control Instructions	0.50	12
INEL 25070	AC Drives Troubleshooting	0.33	8	INEL 76060	Math Data Move Instructions	0.58	14
INEL 25080	SCR Motor Control	0.42	10	INEL 70010	Introduction to Panel View	0.17	4
INEL 35010	General Wiring Fundamentals	0.25	6	INEL 70020	Terminal Overview	0.25	6
INEL 35020	Wire Raceway And Box Sizing	0.33	8	INEL 70030	Wiring and Set Up	0.25	6
INEL 35030	Branch Circuits	0.33	8	INEL 70040	Terminal Configuration	0.25	6
INEL 35040	Service Feeder Calculations	0.25	6	INEL 70050	Troubleshooting Maintenance	0.25	6
				INEL 70060	Programming Panel View	0.83	20
				INEL 70070	Panel View PLC Applications	1.04	25
				INEL 70080	Panel View PLC Communication	0.21	5

\*Module cannot be paid for using certain types of financial aid. Please direct all inquiries to the staff at the EAC registration desk.



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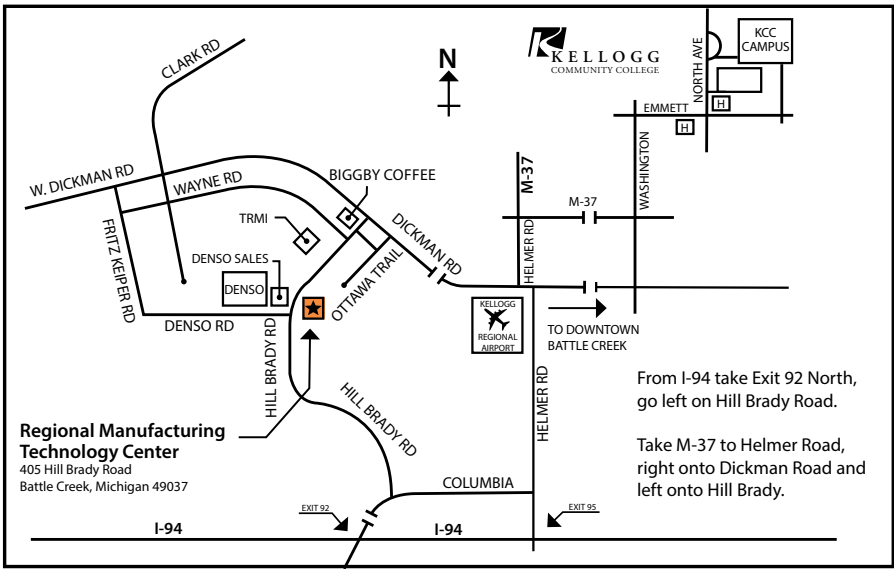
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# DIRECTIONS

## DIRECTIONS TO RMTC

### FROM M-37/HASTINGS

Drive south on M-37 to Dickman Road/M-96. Turn west/right on Dickman Road/M-96. Drive west on Dickman Road/M-96 to Hill Brady Road. Turn south/left on Hill Brady Road. Drive approximately 0.5 miles to the RMTC on the east/left-hand side of the road.

### FROM I-94 EASTBOUND OR WESTBOUND

Follow I-94 to Exit 92. Turn north/right on Dr. Martin Luther King Memorial Skyway and continue to Hill Brady Road. Turn northwest/left on Hill Brady Road. Travel approximately 2 miles to the RMTC on the east/right hand side of the road.

### FROM M-96 GALESBURG/AUGUSTA

Drive east on M-96 to Hill Brady Road. Turn south/right on Hill Brady Road. Drive approximately 0.5 miles on Hill Brady Road to the RMTC on the east/left-hand side of the road.

### FROM DICKMAN ROAD DOWNTOWN BATTLE CREEK

Drive west on Dickman Road/M-96 to Hill Brady Road. Turn south/left on Hill Brady Road. Drive approximately 0.5 miles on Hill Brady Road to the RMTC on the east/left-hand side of the road.

## DIRECTIONS TO KCC NORTH AVE CAMPUS

### FROM I-94 EASTBOUND OR WESTBOUND

Take exit 98B (downtown exit) into town where it blends with Division Street. Remain on Division Street to Van Buren Street (fourth signal light). Turn left on Van Buren Street to Capital Avenue (first light), turn right at the light and stay in the left lane. The road will curve to the left and become North Avenue. Continue on North Avenue through fourth light (after Battle Creek Health System). The College is located on the right.

### FROM HASTINGS

Take M-37 to its junction with Morgan Road (just inside Battle Creek city limits). Turn left onto Morgan Road and proceed to North Avenue (signal light). Turn right (south) and continue to College. Circle Drive entrance is beyond Spring Lake.

### FROM LANSING

Take I-69 to M-78 exit (Bellevue) and proceed through and beyond (about six miles) to M-66. Turn left on M-66 and proceed south to Roosevelt Avenue (third signal light). Turn right and continue to North Avenue. Turn left and proceed to College. Circle Drive entrance is beyond Spring Lake.

### BETWEEN RMTC AND KCC NORTH AVE CAMPUS

From Hill Brady Road turn north/right onto Hill Brady Road. Drive west on Dickman Road/M-96 to Washington Avenue. Turn north/left onto Washington Avenue. Drive north on Washington Avenue to Emmett Street. Turn east/right on Emmett Street. Drive east on Emmett to North Avenue. Turn north/left on North Avenue. Campus in on the east/right-hand side of North Avenue.

# CENTER FOR STUDENT SUCCESS

## Free Educational Services

The Center for Student Success provides free educational services to all KCC students.

### SERVICES INCLUDE:

- Professional and Peer Tutoring (in-person and virtual)
- Disability Services
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- Proctored Testing for Non-KCC Students
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Contact us today to see how we can help you succeed. KCC's Center for Student Success can be reached at [css@kellogg.edu](mailto:css@kellogg.edu) or 269-660-2296. **Go Bruins!**

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Visit us online to learn more!  
[kellogg.edu/CSS](http://kellogg.edu/CSS)

KCC North Ave Campus  
Ohm Building, Room 207  
269-660-2296 [css@kellogg.edu](mailto:css@kellogg.edu)





Regional Manufacturing Technology Center  
405 Hill Brady Road  
Battle Creek, MI 49037