



Industrial Trades Programs

2019-2020



TRAINING FOR SKILLED TRADES CAREERS
WELDER • PIPEFITTER • MACHINIST • ELECTRICIAN
CNC PROGRAMMER • TOOL AND DIE MAKER
ROBOTICS TECHNICIAN • MACHINERY TECHNICIAN
ELECTRONICS TECHNICIAN • MAINTENANCE MECHANIC
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For more information or a free consultation contact:
Kellogg Community College, Workforce Solutions
269-565-2828
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Workforce Solutions

Developing and delivering workforce solutions for your business needs!



Regional Manufacturing Technology Center

The Regional Manufacturing Technology Center (RMTC) is an innovative, community driven training facility located in Fort Custer Industrial Park in Battle Creek, Michigan. The facility is home to Industrial Trades and Workforce Solutions. 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, at the RMTC, or at any remote location within the community. To find out more about training available through the RMTC, please spend a few minutes reviewing the website at www.kellogg.edu/rmtc or contact the RMTC directly at 269.965.4137.

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REGISTRATION & GENERAL PROGRAM INFORMATION

Programs of Study

Occupational Associate Degree Programs

Industrial Electricity and Electronics
Industrial Heating, Ventilation,
Air Conditioning, and Refrigeration
Industrial Machining Technology
Industrial Pipefitting
Industrial Technology
Industrial Welding
Skilled Trades

Certificate Programs

Industrial Electricity and Electronics
Industrial Heating, Ventilation,
Air Conditioning, and Refrigeration
Industrial Machining Technology
Industrial Pipefitting
Industrial Technology
Industrial Trades
Industrial Welding
Renewable Energy

Students – Getting Started

Many Industrial Trades processes and procedures are different from standard KCC processes and procedures because of the non-traditional style of instruction. The Industrial Trades Orientation details many of these differences.

The steps for enrolling in Industrial Trades programs also differ from the KCC 6 Steps to Registration. Students enrolling in Industrial Trades Programs should follow these steps:

Apply to Kellogg Community College

Apply to KCC by completing an Application for Admissions at apply.kellogg.edu.

Submit the form at least 24 hours before completing the Next Generation Accuplacer® assessment and registering for modules.

Admission Criteria:

- Adults 18 years of age or older,
- High school graduates (or high school equivalency certificate [GED]), or
- Completion of a home school program.

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 Contact Information

Phone — 269.965.4153
Email — adm@kellogg.edu
Web — www.kellogg.edu/admissions

Complete the Industrial Trades Orientation

Industrial Trades students are required to complete an Industrial Trades program orientation.

There is one Orientation Module for each of the Industrial Trades Programs. These modules are free and must be done in-person at the RMTCC.

The Program Orientation Module is a pre-requisite for program modules. Industrial Trades students must meet this pre-requisite in order to register for modules within their chosen program of study.

Industrial Trades Department

Phone — 269.965.4137
Email — rmtc@kellogg.edu
Web — www.kellogg.edu/industrial

Meet with a Program Instructor

After applying to KCC, meet with an Industrial Trades program instructor to learn more about the Industrial Trades Program selected. If considering an Associate in Applied Science, meet with academic advisor after meeting with the Industrial Trades program instructor and completing the Next Generation Accuplacer® assessment.

KCC academic advisors are available to provide additional information on:

- Next Generation Accuplacer® assessment scores
- Obtain information other KCC programs

- Select appropriate general education courses
- Graduation requirements
- Navigate the transfer process
- Identify and access career resources
- Seek appropriate college resources

Academic Advising Contact Information

Phone — 269.965.4124

Email — advising@kellogg.edu

Web — www.kellogg.edu/services/academic-advising

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 the FAFSA website at www.fafsa.ed.gov to apply.

Go to the KCC web site at www.kellogg.edu/admissions/financial-aid for eligibility requirements and information on grants, scholarships, student loans, work-study, and veteran's benefits.

All financial aid information will be communicated via the Financial Aid Self Service System located within the KCC Bruin Portal. Students should periodically review financial aid information through the KCC Bruin Portal and watch for emails, which will provide financial aid information.

Financial Aid & Scholarships Contact Information

Phone — 269.965.4123

Email — finaid@kellogg.edu

Web — www.kellogg.edu/admissions/financial-aid

Fill out FAFSA — www.fafsa.ed.gov

Complete Assessment Testing

The 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.

Assessment testing at the Battle Creek campus is done on a walk-in basis. You may take the test any time during these hours: Monday through Thursday: 9 a.m. to 4 p.m.

Testing and Assessment Contact Information

Phone — 269.965.4136

Email — testing@kellogg.edu

Web — www.kellogg.edu/admissions/testing-assessment

New Student Orientation

Students pursuing an associate degree should attend a New Student Orientation on Kellogg Community College's North Avenue campus. New Student Orientation will help to introduce you to Kellogg Community College and help to prepare you for your education. Orientation is designed to give you critical information about being a Bruin. Not only is orientation important, but it's a fun way to meet new students and KCC Staff. Orientation will occur the week before classes begin, giving you an opportunity to see the campus and figure out where our classrooms, and offices are located. Orientation also gives you important skills for your path through your education. For more information or to sign up for an orientation please contact Student Life at 269-565-2634 or at StudentLife@kellogg.edu

Register for Modules

Industrial Trades students may register for modules online via the KCC Bruin Portal at www.kellogg.edu. Assistance registering online is available at the RMTc.

Important! Students must establish residency prior to registration. See the KCC College Catalog for acceptable documentation for establishing and proving your residency.

Pay for Modules

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

- Payment in full when registering for classes
- 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, login 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 Contact Information

Phone — 269.965.5522

Email — regoffice@kellogg.edu

Web — www.kellogg.edu/admissions/registrar

Business Office Contact Information

Phone — 269.965.4140

Email — busoffice@kellogg.edu

Youth Training Opportunities

The RMTC works closely with both 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.

Articulation

Students interested in pursuing a career in Industrials Trades are encouraged to enroll in a program at one of the career centers during high school. Courses taken at the

career centers may be articulated with the RMTC, which means high schools students may earn college credit prior to graduation.

Bruin Bots

Bruin Bots is a robotics program for middle school aged youth coordinated by Lifelong Learning and offered in partnership with the RMTC. Using specialized Lego kits and materials, the program is working to build community capacity to engage more youth in exciting hands-on STEM (science, technology, engineering, and math) learning. It is also providing participants access to KCC Industrial Trades faculty and the RMTC facility in learning about the great local STEM careers that can be accessed through a KCC education. Visit the Bruin Bots website to learn more about this program or contact Lifelong Learning at 269.965.4134

Dual Enrollment/Early College

High school students may also dual enroll at the RMTC. Dual Enrolled/Early College students actually 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 path. 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 on youth training programs, contact the Director of the RMTC at 269.565.2800.

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 on apprenticeships, contact the RMTC Director or go to www.doleta.gov/oa/getstarted.cfm.

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)
- Instrumentation (INST)
- Industrial Technology (INT)
- Industrial Machining Technology (INMT)
- Industrial Pipefitting (INPF)
- Renewable Energy (INRE)
- Industrial Tool and Die (INTD)
- Industrial Welding (INWE)

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 Kevin Barnes at barnesk@kellogg.edu to learn more about state licensing requirements.

Industrial Trades

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

Competency-based Modules

Modules are short, topical courses—generally between 5 and 25 clock hours in length. Modules are taken in successive order. Competency-based means students must achieve the minimum score (80, 90, or 100%) to pass the module. Students must pass each successive module before starting the next.

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 text books, 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.

Open Entry/Open Exit (Self-paced Learning)

Industrial Trades programs are open Monday and Thursday, 8:00 a.m. to 4:00 p.m.; and Tuesday and Wednesday, 8:00 a.m. to 8:00 p.m. Students may attend at

any time during these hours. Students work through modules and learning activities at their own pace. Students may register for modules at any time during the semester and may take up to one year to complete those modules.

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 on the program outlines. Minimum credit requirements for certificates vary by program. A certificate is required for completion of an associate in applied science in Industrial Trades.

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 that have completed an Associate in Applied Science degree at KCC may have options to transfer directly to a four year institution. Please see an Academic Advisor for more information.

Customized Training for Companies

The RMTC's unique style of training was designed specifically for the demanding and dynamic manufacturing environment. The 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 is available to consult with companies and to provide guidance on selecting modules to meet identified learning outcomes.

Setup a Training Account

To set up a company sponsored training program, contact the Director of the RMTC at 269.565.2800. The director 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 24-48 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 immediately without waiting for the next semester to start. It also enables companies to plan training around production schedules. In addition, companies are not charged for training until students successfully complete training modules. If production schedules and overtime cause a break in training, companies do not have to pay for incomplete modules. Instead, students simply resume training when possible. To enroll an employee in a training program, both the student and the sponsor must complete the Sponsored Student Billing Authorization form. Companies are billed at the end of the semester for the modules their employees complete.

Monitor Training Progress

The RMTC understands that companies are making a sizable investment in training. In order to help companies manage their investment, the RMTC emails progress reports at the end of each semester. In order to receive an emailed progress report, the company contact must complete a Student Progress Report Email Agreement form. Companies may also require employees to provide more regular progress reports. Employees may obtain these reports online via KRIS at any time.

The Grade of “P” (Pass)

A “P” grade will be awarded when the student successfully completes an Industrial Trades module according to the grading criteria specified on the module syllabus. You should be aware that a “P” grade is not calculated in your overall grade point average. This means students taking only Industrial Trades modules will not carry a grade point average. Students taking a combination of Industrial Trades modules and other KCC courses will carry a grade point average calculated entirely upon the grades obtained in those other KCC courses. The grade point average requirement for graduation is waived for all Industrial Trades certificate programs.

Students should be aware that Industrial Trades modules may not transfer to all other educational institutions. If you are planning to transfer to another educational institution, you should speak with an academic advisor from the transfer institution regarding transferability of Industrial Trades modules. For more information on transferability, contact the Director of the RMTC at 269.565.2800.

Academic Probation

The following Academic Probation policy will apply to all students enrolled in the Industrial Trades programs and/or modules at the Regional Manufacturing Technology Center and may be initiated by the

appropriate faculty for students who are demonstrating poor academic progress.

Students who meet one or more of the following indicators of poor academic performance in an Industrial Trades program may be placed on Academic Probation in the semester immediately following the semester in which poor academic performance is documented by the instructor.

1. Student takes an inordinate amount of time to complete modules (student invests considerable time and effort into studies and continues to demonstrate an inability to comprehend and apply knowledge).
2. Student requires three or more attempts to complete an assessment activity on one or more modules during a semester.
3. Student fails to retain basic knowledge, skills and abilities ultimately resulting in dangerous or unsafe work practices (for example, failure to comprehend and apply basic safety principles).
4. 33% or more of the total contact hours registered for in a given semester are incomplete at the end of the semester.
5. Student takes the Differential Aptitude Test (Abstract Reasoning, Spatial Relations, and Mechanical Reasoning) and scores less than a 50% on one or more assessment section.

The instructor will document poor academic performance by completing an Academic Probation Recommendation Form and providing a copy to the student and to the Director of the RMTC. The Director will forward a copy of the form to the Dean of Career & Occupational Education.

At the beginning of the Academic Probation period, the instructor will develop an RMTC Academic Success Action Plan (ASAP) for the student that

specifies the requirements for the student to return to academic good standing. If the student is not successful in completing the requirements outlined in the ASAP during this probation period, a hold will be placed on the student's account and he/she will not be allowed to register for additional modules in the RMTTC program for which the Academic Probation occurred. Students are encouraged to request tutoring assistance by contacting The Bridge at 269-660-2296.

Appeal Process

A student may appeal the decision to being placed on Academic Probation and / or a determination that the student has not met the requirements for successful completion of the ASAP. The following process must be adhered to:

Step 1. Student submits a written request to the Vice President of Student and Community Services outlining extenuating circumstances for poor academic performance and requests the decision be overturned.

Step 2. The Vice President of Student and Community Services will convene the Academic Review Board and investigate the probation determination—one or more meetings may be held with the student in order to investigate the determination.

Step 3. The Vice President of Student Services will send a notice of determination by certified mail to the student within 15 working days after the last interview with the student.

INDUSTRIAL ELECTRICITY AND ELECTRONICS

PROGRAM INFORMATION

CREDIT HOURS LAB FEE TUITION TOTAL COST

Certificate 30 Credits Associate in Applied Science 60 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.



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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269.965.4137 TO VERIFY.

INEL C910	ELECTRIC ELECTRONICS ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					

UNIT 05 ELECTRICAL SAFETY

INEL 05010	ELECTRICAL SAFETY	0.17	4	3.00	39.70	42.70
	UNIT TOTAL	0.17	4	3.00	39.70	42.70

UNIT 10 MATHEMATICS FOR ELECTRICIANS

INEL 10010	ELECTRICAL MATH 1	0.08	2	13.00	18.68	31.68
INEL 10020	ELECTRICAL MATH 2	0.25	6	3.00	58.38	61.38
INEL 10030	ELECTRICAL MATH 3	0.25	6	3.00	58.38	61.38
	UNIT TOTAL	0.58	14	19.00	135.44	154.44

UNIT 15 ELECTRICAL THEORY

INEL 15010	ELECTRICAL THEORY	0.25	6	23.00	58.38	81.38
INEL 15020	STATIC ELECTRICITY	0.25	6	23.00	58.38	81.38
INEL 15030	CALCULATORS AND ELECTRONICS	0.25	6	23.00	58.38	81.38
INEL 15040	DEVICES AND SYMBOLS	0.25	6	23.00	58.38	81.38
INEL 15050	MULTIMETER	0.33	8	23.00	77.06	100.06
INEL 15060	OHM'S LAW	0.33	8	23.00	77.06	100.06
INEL 15070	SERIES CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15080	PARALLEL CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15090	COMBINATION CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15100	MAGNETISM	0.25	6	23.00	58.38	81.38
INEL 15110	ALTERNATING CURRENT	0.25	6	23.00	58.38	81.38
INEL 15120	OSCILLOSCOPE	0.33	8	23.00	77.06	100.06
INEL 15130	INDUCTANCE	0.42	10	23.00	98.07	121.07
INEL 15140	CAPACITANCE	0.42	10	23.00	98.07	121.07
INEL 15150	RLC CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15160	CONDUCTION	0.33	8	23.00	77.06	100.06
INEL 15170	THEORY OVERVIEW	0.21	5	23.00	49.04	72.04
	UNIT TOTAL	5.19	125	391.00	1,211.94	1,602.94

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 20	ELECTRICAL MOTOR CONTROLS 1					
INEL 20010	ELECTRICAL MOTOR CONTROLS	0.42	10	23.00	98.07	121.07
INEL 20020	MANUAL MOTOR CONTROLS	0.50	12	23.00	116.75	139.75
INEL 20030	CONTROL TRANSFORMERS	0.42	10	23.00	98.07	121.07
INEL 20040	CONTROL LADDER LOGIC	0.67	16	23.00	156.45	179.45
INEL 20050	CONTROL RELAYS MOTOR STARTERS	0.50	12	23.00	116.75	139.75
INEL 20060	INTRODUCTION TROUBLESHOOTING	0.33	8	23.00	77.06	100.06
INEL 20070	SYSTEMS TROUBLESHOOTING	0.42	10	23.00	98.07	121.07
INEL 20080	AUTOMATIC INPUT DEVICES	0.42	10	23.00	98.07	121.07
INEL 20090	ELECTRONIC SENSORS	0.33	8	23.00	77.06	100.06
INEL 20100	BASIC TIMER CONTROL	0.33	8	23.00	77.06	100.06
INEL 20110	TIMERS AND COUNTERS	0.25	6	23.00	58.38	81.38
	UNIT TOTAL	4.59	110	253.00	1,071.79	1,324.79
UNIT 25	ELECTRIC MOTOR CONTROLS 2					
INEL 25010	REVERSING MOTOR CONTROL	0.33	8	23.00	77.06	100.06
INEL 25020	BRAKING METHODS	0.42	10	23.00	98.07	121.07
INEL 25030	REDUCED VOLTAGE STARTING	0.33	8	23.00	77.06	100.06
INEL 25040	INTRO FREQUENCY DRIVES (AC)	0.33	8	23.00	77.06	100.06
INEL 25050	AC DRIVES SPEED TORQUE CNT	0.33	8	23.00	77.06	100.06
INEL 25060	AC DRIVES ACCEL AND DECEL	0.33	8	23.00	77.06	100.06
INEL 25070	AC DRIVES TROUBLESHOOTING	0.33	8	23.00	77.06	100.06
INEL 25080	SCR MOTOR CONTROL	0.42	10	23.00	98.07	121.07
	UNIT TOTAL	2.82	68	184.00	658.50	842.50
UNIT 30	ROTATING ELECTRIC MACHINES					
INEL 30010	DC SERIES MOTORS	0.25	6	23.00	58.38	81.38
INEL 30020	DC SHUNT AND COMPOUND MOTORS	0.33	8	23.00	77.06	100.06
INEL 30030	MOTOR SPEED AND TORQUE	0.33	8	23.00	77.06	100.06
INEL 30040	MOTOR PERFORMANCE	0.25	6	23.00	58.38	81.38
INEL 30050	SPLIT PHASE MOTORS	0.25	6	23.00	58.38	81.38
INEL 30060	CAPACITOR START MOTORS	0.25	6	23.00	58.38	81.38
INEL 30070	PERMANENT CAPACITOR MOTORS	0.25	6	23.00	58.38	81.38
INEL 30080	THREE PHASE MOTORS	0.33	8	21.00	77.06	98.06
	UNIT TOTAL	2.24	54	182.00	523.08	705.08
UNIT 35	NATIONAL ELECTRICAL CODE (NEC)					
INEL 35010	GENERAL WIRING FUNDAMENTALS	0.25	6	17.00	58.38	75.38
INEL 35020	WIRE RACEWAY AND BOX SIZING	0.33	8	17.00	77.06	94.06
INEL 35030	BRANCH CIRCUITS	0.33	8	17.00	77.06	94.06
INEL 35040	SERVICE FEEDER CALCULATIONS	0.25	6	17.00	58.38	75.38
INEL 35050	GROUNDING AND BONDING	0.33	8	17.00	77.06	94.06
INEL 35060	OVERCURRENT PROTECTION	0.33	8	17.00	77.06	94.06
INEL 35070	MOTOR CIRCUIT WIRING	0.25	6	17.00	58.38	75.38
INEL 35080	TRANSFORMERS	0.25	6	17.00	58.38	75.38
INEL 35090	GENERAL HAZARDOUS LOCATIONS	0.25	6	17.00	58.38	75.38
INEL 35100	HEALTH CARE FACILITIES	0.25	6	17.00	58.38	75.38
INEL 35110	EMERGENCY POWER SYSTEMS	0.33	8	17.00	77.06	94.06
INEL 35120	INDUSTRIAL APPLICATIONS	0.33	8	17.00	77.06	94.06
INEL 35130	SPECIAL APPLICATION WIRING	0.25	6	17.00	58.38	75.38

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INEL 35140	NEC REVIEW	0.17	4	17.00	39.70	56.70
	UNIT TOTAL	3.90	94	238.00	910.72	1148.72
UNIT 40	POWER DISTRIBUTION SYSTEMS					
INEL 40010	POWER GENERATION DISTRIBUTION	0.33	8	39.00	77.06	116.06
INEL 40020	ELECTRICAL WIRING TECHNIQUES	0.33	8	39.00	77.06	116.06
INEL 40030	WIRING SYSTEM INSTALLATION	0.42	10	39.00	98.07	137.07
INEL 40040	INTRODUCTION TO RACEWAYS	0.42	10	39.00	98.07	137.07
INEL 40050	BASIC CONDUIT BENDING	0.25	6	39.00	58.38	97.38
INEL 40060	ADVANCED RACEWAYS	0.25	6	39.00	58.38	97.38
INEL 40070	CONDUCTOR OVERCURRENT PROTECT	0.25	6	39.00	58.38	97.38
INEL 40080	CONDUIT SIZING WIRE PULLING	0.33	8	39.00	77.06	116.06
	UNIT TOTAL	2.58	62	312.00	602.46	914.46
UNIT 45	FACILITY MAINTENANCE					
INEL 45010	PLANS AND SITE WORK	0.25	6	30.00	58.38	88.38
INEL 45020	INDUSTRIAL POWER SYSTEMS	0.42	10	30.00	98.07	128.07
INEL 45030	SIGNALING SYSTEMS	0.25	6	30.00	58.38	88.38
INEL 45040	MOTORS CONTROLLERS INSTALLATIO	0.33	8	30.00	77.06	107.06
INEL 45050	SPECIAL EQUIPMENT & HVAC	0.33	8	30.00	77.06	107.06
INEL 45060	INDUSTRIAL HAZARDOUS LOCATIONS	0.25	6	30.00	58.38	88.38
INEL 45070	SINGLE PHASE TRANSFORMERS	0.33	8	30.00	77.06	107.06
INEL 45080	3 PHASE TRANSFORMERS	0.50	12	30.00	116.75	146.75
INEL 45090	NEC TRANSFORMER REQUIREMENTS	0.25	6	30.00	58.38	88.38
INEL 45100	EMERGENCY ELECTRICAL SYSTEMS	0.25	6	30.00	58.38	88.38
INEL 45110	CLASS B FIRE ALARM SYSTEMS	0.33	8	30.00	77.06	107.06
INEL 45115	ADVANCED FIRE ALARM SYSTEMS	0.42	10	15.00	98.07	113.07
	UNIT TOTAL	3.91	94	345.00	913.03	1258.03
UNIT 50	ELECTRICAL CONTROL WIRING					
INEL 50010	ELECTRICAL CONTROL WIRING	0.42	10	65.00	98.07	163.07
INEL 50020	ELECTRICAL CONTROL SYSTEMS	1.00	24	75.00	233.50	308.50
	UNIT TOTAL	1.42	34	140.00	331.57	471.57
UNIT 55	INDUSTRIAL ELECTRONICS					
INEL 55010	USING THE OSCILLOSCOPE	0.67	16	21.00	156.45	177.45
INEL 55020	METERS FOR ELECTRONICS	0.33	8	21.00	77.06	98.06
INEL 55030	ELECTRONIC SOLDERING	0.25	6	21.00	58.38	79.38
INEL 55040	SOLDERING PRINTED CIRCUIT BOAR	0.25	6	21.00	58.38	79.38
INEL 55050	DIODES	0.25	6	21.00	58.38	79.38
INEL 55060	POWER SUPPLIES	0.50	12	21.00	116.75	137.75
INEL 55070	PHOTO DEVICES	0.33	8	21.00	77.06	98.06
INEL 55080	SOLID STATE DEVICES	0.83	20	21.00	193.81	214.81
INEL 55090	ELECTRONIC TIMING	0.33	8	21.00	77.06	98.06
INEL 55100	AMPLIFIERS	0.83	20	21.00	193.81	214.81
INEL 55110	DIGITAL LOGIC FUNDAMENTALS	0.50	12	21.00	116.75	137.75
INEL 55120	DIGITAL LOGIC APPLICATIONS	0.42	10	21.00	98.07	119.07
INEL 55130	PROXIMITY SWITCHING	0.17	4	21.00	39.70	60.70
INEL 55140	PHOTOELECTRIC DEVICES	0.17	4	21.00	39.70	60.70
INEL 55150	FIBER OPTIC FUNDAMENTALS	0.33	8	21.00	77.06	98.06

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INEL 55160	FIBER OPTIC LAB	0.25	6	21.00	58.38	79.38
	UNIT TOTAL	6.41	154	336.00	1496.80	1832.80
UNIT 60	PROGRAM LOGIC CONTROLLERS 1					
INEL 60010	INTRO PROGRAMMABLE CONTROLLERS	0.25	6	25.00	58.38	83.38
INEL 60020	BASIC PLC PROGRAMMING	0.50	12	25.00	116.75	141.75
INEL 60030	PLC MOTOR CONTROL	0.50	12	25.00	116.75	141.75
INEL 60040	DISCRETE I/O INTERFACING	0.33	8	25.00	77.06	102.06
INEL 60050	INTRO TO PLC TROUBLESHOOTING	0.33	8	25.00	77.06	102.06
INEL 60060	PLC SYSTEMS TROUBLESHOOTING	0.33	8	25.00	77.06	102.06
	UNIT TOTAL	2.24	54	150.00	523.06	673.06
UNIT 65	PROGRAM LOGIC CONTROLLERS 2					
INEL 65010	EVENT SEQUENCING	0.33	8	25.00	77.06	102.06
INEL 65020	APPLICATION DEVELOPMENT	0.50	12	25.00	116.75	141.75
INEL 65030	PLC TIMER INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65040	PLC COUNTER INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65050	PROGRAM CONTROL INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65060	MATH DATA MOVE INSTRUCTIONS	0.58	14	25.00	135.43	160.43
	UNIT TOTAL	2.91	70	150.00	679.49	829.49
UNIT 67	SIEMENS S7-300 PLCS					
INEL 67010	SIEMENS 300 INTRO TO PLCS	0.50	12	17.00	116.75	133.75
INEL 67020	SIEMENS 300 BASIC PLC PROGRAM	0.50	12	17.00	116.75	133.75
INEL 67030	SIEMENS 300 PLC MOTOR CONTROL	0.50	12	17.00	116.75	133.75
INEL 67040	SIEMENS 300 IO INTERFACING	0.50	12	5.00	116.75	133.75
INEL 67050	SIEMENS 300 PLC TIMERS	0.50	12	5.00	116.75	133.75
INEL 67060	SIEMENS 300 PLC COUNTERS	0.50	12	5.00	116.75	133.75
	UNIT TOTAL	3.00	72	66.00	700.50	766.50
UNIT 75	INTRODUCTION TO CONTROL LOGIX					
INEL 75010	INTRO TO COMPACT LOGIX PLCS	0.25	6	15.00	58.38	73.38
INEL 75020	CREATING RS LOGIX 5000 PROJEC	0.25	6	15.00	58.38	73.38
INEL 75030	ETHERNET COMMUNICATION PROTO	0.42	10	15.00	98.07	113.07
INEL 75040	CREATING RS LOGIX 5000 PROGRA	0.42	10	15.00	98.07	113.07
INEL 75050	TON TOF RTO COUNTER INSTRUCTI	0.42	10	15.00	98.07	113.07
INEL 75060	CU AND CD COUNTER INSTRUCTION	0.42	10	15.00	98.07	113.07
	UNIT TOTAL	2.18	52	90.00	509.04	599.04
UNIT 70	PANEL VIEW					
INEL 70010	INTRODUCTION TO PANEL VIEW	0.17	4	10.00	39.70	49.70
INEL 70020	TERMINAL OVERVIEW	0.25	6	10.00	58.38	68.38
INEL 70030	WIRING AND SET UP	0.25	6	10.00	58.38	68.38
INEL 70040	TERMINAL CONFIGURATION	0.25	6	10.00	58.38	68.38
INEL 70050	TROUBLESHOOTING MAINTENANCE	0.25	6	10.00	58.38	68.38
INEL 70060	PROGRAMMING PANEL VIEW	0.83	20	10.00	178.45	188.45
INEL 70070	PANEL VIEW PLC APPLICATIONS	1.04	25	10.00	193.81	203.81
INEL 70080	PANEL VIEW PLC COMMUNICATION	0.21	5	10.00	49.04	59.04
	UNIT TOTAL	3.25	78	80.00	758.91	838.91

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 80 MACHINE SAFETY CONTROLS						
INEL 80010	INTRODUCTION TO MACHINE SAFETY	0.33	8	15.00	77.06	92.06
INEL 80020	LEVEL 1 MACHINE SAFETY	0.25	6	22.00	58.38	80.38
INEL 80030	LEVEL 2 MACHINE SAFETY	0.42	10	25.00	98.07	123.07
INEL 80040	LEVEL 3 MACHINE SAFETY	0.50	12	25.00	116.75	141.75
INEL 80050	MACHINE SURVEY	0.33	8	15.00	77.06	92.06
	UNIT TOTAL	1.83	44	102.00	427.32	529.32
UNIT 95 MECHATRONICS						
INEL 95010	MECHATRONICS AUTOMATION OPER	0.21	5	23.00	49.04	72.04
INEL 95020	MECHATRONICS BASIC COMP ADJ	0.21	5	23.00	49.04	72.04
INEL 95030	MECHATRONICS PICK PLACE FEED	0.21	5	23.00	49.04	72.04
INEL 95040	MECHATRONICS GAUGING	0.21	5	23.00	49.04	72.04
INEL 95050	MECHATRONICS INDEXING	0.21	5	23.00	49.04	72.04
INEL 95060	MECHATRONICS SORTING QUEUING	0.21	5	23.00	49.04	72.04
INEL 95070	MECHATRONICS SERVO ROBOTIC	0.21	5	23.00	49.04	72.04
INEL 95080	MECHATRONICS TORQUEING	0.21	5	23.00	49.04	72.04
INEL 95090	MECHATRONICS PARTS STORAGE	0.21	5	23.00	49.04	72.04
INEL 95095	MECHATRONICS STATION PROGRAM	0.21	5	13.00	49.04	62.04
INEL 95100	MECHATRONICS MULTI STATION CN	0.21	5	23.00	49.04	72.04
	UNIT TOTAL	2.31	55	243.00	539.44	782.44
PROGRAM TOTAL		51.53	1,240	3,284.00	12,032.79	15,316.79

ASSESSMENTS

*INEL C510	PMMI MOTORS & MOTOR CONTROLS	3	138.00	0.00	138.00
*INEL C520	PMMI INDUSTRIAL ELECTRICITY 1	3	163.00	0.00	163.00
*INEL C530	PMMI INDUSTRIAL ELECTRICITY 2	3	138.00	0.00	138.00
*INEL C540	PMMI PLCS 1	3	163.00	0.00	163.00

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

INDUSTRIAL HEATING, VENTILATION, AIR CONDITIONING AND REFRIGERATION (HVAC-R)

PROGRAM INFORMATION

Certificate 25 Credits Associate in Applied Science 60 Credits

Students enrolled in an Industrial HVAC-R program at the RMTC will learn the fundamentals of commercial and industrial refrigeration with an emphasis on compression systems, electrical control systems, EPA standards, air movement, and heating concepts.



Andrew Redlon, Instructor

Phone: 269.565.2813

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

INHR C910	HVAC-R ORIENTATION		2	0.00	0.00	0.00
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The orientation must be completed at the RMTC in Battle Creek prior to registration.
Please call 269.965.4137 to verify available orientation times.

UNIT 05 REFRIGERATION TOOLS/PLANT SAFETY

INHR 05011	HVAC-R SAFETY	0.83	20	41.00	193.81	234.81
INHR 05021	HVAC-R TOOLS	0.08	2	31.00	18.68	49.68
	UNIT TOTAL	0.91	22	72.00	212.49	284.49

UNIT 10 REFRIGERATION FUNDAMENTALS

INHR 10011	INTRODUCTION TO HVAC-R	0.33	8	25.00	77.06	102.06
INHR 10021	TRADE MATHEMATICS	0.42	10	16.00	98.07	114.07
INHR 10031	COPPER PLASTIC PIPING PRACTICE	0.21	5	26.00	49.04	75.04
INHR 10041	SOLDERING AND BRAZING	0.33	8	44.00	77.06	121.06
INHR 10051	FERROUS METAL PIPING PRACTICES	0.63	15	31.00	147.11	178.11
	UNIT TOTAL	1.92	46	142.00	448.34	590.34

UNIT 15 REFRIGERATION SYSTEMS & COMPONENTS

INHR 15011	INTRODUCTION TO COOLING	1.25	30	16.00	291.88	307.88
INHR 15021	COMPRESSORS	0.63	15	23.00	147.11	170.11
INHR 15031	REFRIGERANTS AND OILS	0.42	10	24.00	98.07	122.07
INHR 15041	METERING DEVICES	0.33	8	16.00	77.06	93.06
INHR 15051	LEAK EVAC RECOVERY CHARGING	0.83	20	71.00	193.81	264.81
INHR 15061	TROUBLESHOOTING COOLING	0.83	20	27.00	193.81	220.81
INHR 15071	RETAIL REFRIGERATION SYSTEMS	0.83	20	31.00	193.81	224.81
INHR 15081	COMMERCIAL INDUSTRIAL REFRIG	1.00	24	18.00	233.50	251.50
	UNIT TOTAL	6.12	147	226.00	1,429.05	1,655.05

*INHR C410	EPA CERTIFICATION		3	90.00	0.00	90.00
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(STUDENT MUST ARRANGE DATE/TIME WITH INSTRUCTOR.)

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 20	HEATING SYSTEMS & TROUBLESHOOTING					
INHR 20011	INTRODUCTION TO HEATING	0.63	15	21.00	147.11	168.11
INHR 20021	TROUBLESHOOTING GAS HEATING	0.54	13	24.00	126.09	150.09
INHR 20031	TROUBLESHOOTING OIL HEAT SYS	0.42	10	21.00	98.07	119.07
INHR 20041	CHIMNEYS, VENTS AND FLUES	0.21	5	16.00	49.04	65.04
INHR 20051	TROUBLESHOOTING ACCESSORIES	0.42	10	21.00	98.07	119.07
	UNIT TOTAL	2.22	53	103.00	518.38	621.38
UNIT 25	HYDRONIC SYSTEMS					
INHR 25011	INTRODUCTION HYDRONIC SYSTEMS	0.42	10	16.00	98.07	114.07
INHR 25021	COMMERCIAL HYDRONIC SYSTEMS	0.54	13	16.00	126.09	142.09
	UNIT TOTAL	0.96	23	32.00	224.16	256.16
UNIT 30	STEAM SYSTEMS					
INHR 30011	STEAM SYSTEMS	0.63	15	24.00	147.11	171.11
	UNIT TOTAL	0.63	15	24.00	147.11	171.11
UNIT 35	HEAT PUMPS & TROUBLESHOOTING					
INHR 35011	HEAT PUMPS	0.83	20	16.00	193.81	209.81
INHR 35021	TROUBLESHOOTING HEAT PUMPS	0.54	13	19.00	126.09	145.09
	UNIT TOTAL	1.37	33	35.00	319.90	354.90
UNIT 40	AIR DISTRIBUTION & INDOOR AIR QUALITY					
INHR 40011	INDOOR AIR QUALITY	0.63	15	23.00	147.11	170.11
INHR 40021	AIR DISTRIBUTION SYSTEMS	0.63	15	19.00	147.11	166.11
INHR 40031	COMMERCIAL AIRSIDE SYSTEMS	0.54	13	23.00	126.09	149.09
INHR 40041	AIR QUALITY EQUIPMENT	0.33	8	16.00	77.06	93.06
INHR 40051	SYSTEM BALANCING	0.83	20	23.00	193.81	216.81
	UNIT TOTAL	2.96	71	104.00	691.18	795.18
UNIT 45	HVAC-R AUTOMATION CONTROLS					
INHR 45011	DIGITAL CONTROLS HVAC TECHS	0.21	5	91.00	49.04	140.04
INHR 45021	BUILDING MANAGEMENT SYSTEMS	0.75	18	16.00	175.13	191.13
	UNIT TOTAL	0.96	23	107.00	224.17	331.17
UNIT 50	HVAC-R DUCT SYSTEMS					
INHR 50011	SHEET METAL DUCT SYSTEMS	0.42	10	31.00	98.07	129.07
INHR 50021	FIBERGLASS FLEXIBLE DUCT SYS	0.21	5	16.00	49.04	65.04
	UNIT TOTAL	0.63	15	47.00	147.11	194.11
UNIT 55	HVAC-R PREVENTATIVE MAINTENANCE					
INHR 55011	INSTALLATION AND MAINTENANCE	0.92	22	16.00	214.82	230.82
INHR 55021	PLANNED MAINTENANCE	0.83	20	29.00	193.81	222.81
INHR 55031	CONSTRUCTION DRAWINGS SPECIFI	1.04	25	18.00	242.84	260.84
	UNIT TOTAL	2.79	67	63.00	651.47	714.47

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 60	HVAC-R COMMISSIONING & CONSERVATION					
INHR 60011	SYSTEM STARTUP AND SHUTDOWN	0.96	23	21.00	224.16	245.16
INHR 60021	HEATING COOLING SYSTEM DESIGN	1.04	25	24.00	242.84	266.84
INHR 60031	ENERGY CONSERVATION EQUIPMENT	0.42	10	21.00	98.07	119.07
INHR 60041	ALTERNATIVE HEAT COOL SYSTEMS	0.42	10	24.00	98.07	122.07
	UNIT TOTAL	2.84	68	90.00	663.14	753.14
UNIT 65	WATER TREATMENT					
INHR 65011	WATER TREATMENT	0.42	10	48.00	98.07	146.07
	UNIT TOTAL	0.42	10	48.00	98.07	146.07
UNIT 70	SUPERVISORY SKILLS					
INHR 70011	INTRO TO SUPERVISORY SKILLS	0.63	15	41.00	147.11	188.11
	UNIT TOTAL	0.63	15	41.00	147.11	188.11
UNIT 75	WRITING FOR EMPLOYMENT					
INHR 75011	WRITING FOR EMPLOYMENT	0.50	12	6.00	116.75	122.75
	UNIT TOTAL	0.50	12	6.00	116.75	122.75
	PROGRAM TOTAL	25.86	625	1,230.00	6,038.43	7,268.43

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

INDUSTRIAL TECHNOLOGY

PROGRAM INFORMATION

Certificate 30 Credits Associate in Applied Science 60 Credits

Students enrolled in an Industrial Technology program will learn mathematics, applied science and materials, product design elements, standards and regulations, process applications and operations, electro-mechanical devices, equipment and, safety, programming and controls, maintenance systems design and development, and quality and lean manufacturing.



Tim Krueger, Professor

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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INT C910	IND TECHNOLOGY ORIENTATION		2	0.00	0.00	0.00
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UNIT 05

MATHEMATICS

INT 05010	PLANE GEOMETRY LINES ANGLES	0.58	14	6.00	135.43	141.43
INT 05020	PLANE GEOMETRY TRIANGLES	0.42	10	6.00	98.07	104.07
INT 05030	PLANE GEOMETRY CIRCLES	0.42	10	6.00	98.07	104.07
INT 05040	PLANE GEOMETRY CONSTRUCT REVIE	0.38	9	6.00	88.73	94.73
INT 05050	GEOMETRIC FIGURES AREAS	0.58	14	6.00	135.43	141.43
INT 05060	GEOMETRIC FIGURES VOLUMES	0.46	11	6.00	107.41	113.41
INT 05070	GEOMETRIC FIGURE AREAS VOLUMES	0.25	6	6.00	58.38	64.38
INT 05080	TRIG FUNCTIONS TRIANGLE CALC	0.58	14	6.00	135.43	141.43
INT 05090	TRIG MACHINE APPLICATIONS	0.42	10	6.00	98.07	104.07
INT 05100	SOLVING OBLIQUE TRIANGLES	0.50	12	6.00	116.75	122.75
INT 05110	TRIG ACHIEVEMENT REVIEW	0.33	8	6.00	77.06	83.06
UNIT TOTAL		4.92	118	66.00	1,148.83	1,214.83

UNIT 10

APPLIED SCIENCE AND MATERIALS

INT 10010	PRINCIPLES OF FERROUS METALS	0.63	15	113.00	147.11	260.11
INT 10020	PRINCIPLES NON FERROUS METALS	0.63	15	83.00	147.11	230.11
INT 10030	PRINCIPLES OF PLASTICS	0.42	10	13.00	98.07	111.07
INT 10040	PRINCIPLES OF CERAMICS	0.42	10	13.00	98.07	111.07
INT 10050	PRINCIPLES OF COMPOSITES	0.42	10	13.00	98.07	111.07
INT 10060	STATICS AND DATA ACQUISITION	0.42	10	20.00	98.07	118.07
INT 10070	THERMODYN ENERGY HEAT TRANSFER	1.00	24	36.00	233.50	269.50
INT 10080	DYNAMICS FORCE AND MOTION	1.13	27	101.00	263.86	364.86
INT 10090	FLUIDS	0.33	8	10.00	77.06	87.06
UNIT TOTAL		5.40	129	402.00	1,260.92	1,662.92

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 15 PRODUCT DESIGN ELEMENTS						
INT 15010	FUNDAMENTALS OF PRINT READING	0.92	22	77.00	214.82	291.82
INT 15020	MACHINE PRINTS	0.17	4	15.00	39.70	54.70
INT 15030	ELECTRICAL PRINTS	0.29	7	77.00	67.72	144.72
INT 15040	HYDRAULIC PNEUMATIC PRINT	0.29	7	17.00	67.72	84.72
INT 15050	WELDING PRINTS	0.08	2	17.00	18.68	35.68
INT 15060	PIPING PLUMBING PRINTS	0.21	5	17.00	49.04	66.04
INT 15070	AC REFRIGE SHEET METAL PRINT	0.21	5	17.00	49.04	66.04
INT 15080	BUILDING PRINTS	0.08	2	15.00	18.68	33.68
INT 15090	GEOMETRIC DIMENSION TOLERANCE	0.17	4	13.00	39.70	52.70
	UNIT TOTAL	2.42	58	265.00	565.10	830.10
UNIT 20 STANDARDS AND REGULATIONS						
INT 20010	INTRO MANUFACTURING STANDARDS	0.13	3	111.00	30.36	141.36
INT 20020	OVERVIEW OF STANDARDS DEVELOP	0.33	8	3.00	77.06	80.06
INT 20030	STANDARDS LEGAL ISSUES	0.13	3	3.00	30.36	33.36
INT 20040	GOOD MANUFACTURING PRACTICE	0.21	5	103.00	49.04	152.04
	UNIT TOTAL	0.80	19	220.00	186.82	406.82
UNIT 25 PROCESS APPLICATIONS AND OPERATIONS						
INT 25010	MFG PROCESS PRODUCTION BASIC	0.63	15	43.00	147.11	190.11
INT 25020	PRODUCTION MACHINE OPERATIONS	0.79	19	93.00	184.47	277.47
	UNIT TOTAL	1.42	34	136.00	331.58	467.58
UNIT 30 ELECTRO-MECHANICAL DEVICES, EQUIPMENT, AND SAFETY						
INT 30010	MANUFACTURING SAFETY	1.00	24	43.00	233.50	276.50
INT 30020	OSHA 10	0.92	22	31.00	214.82	245.82
INT 30030	OSHA 30	1.79	43	196.00	417.97	613.97
INT 30040	ARC FLASH LOCKOUT TAGOUT	0.29	7	48.00	67.72	115.72
INT 30050	ELECTROMECHANICAL DEVICE EQUIP	1.08	26	88.00	252.18	340.18
INT 30060	INTRO TO POWER TRANSMISSIONS	0.13	3	6.00	30.36	36.36
INT 30070	COUPLINGS	0.17	4	11.00	39.70	50.70
INT 30080	CLUTCHES AND BRAKES	0.33	8	10.00	77.06	87.06
INT 30090	FLAT BELT DRIVES	0.25	6	10.00	58.38	68.38
INT 30100	V BELT DRIVES	0.25	6	11.00	58.38	69.38
INT 30110	CHAIN DRIVES	0.25	6	13.00	58.38	71.38
INT 30120	SPEED REDUCERS	0.25	6	10.00	58.38	68.38
INT 30130	GEARS	0.25	6	6.00	58.38	64.38
INT 30140	LUBRICANTS AND LUBRICATION	0.17	4	6.00	39.70	45.70
INT 30150	ADDITIVES LUB ACT BEARING LUB	0.08	2	3.00	18.68	21.68
INT 30160	OILS AND THEIR APPLICATIONS	0.08	2	3.00	18.68	21.68
INT 30170	GENERAL SPECIAL PURPOSE GREASE	0.17	4	3.00	39.70	42.70
INT 30190	LUBRICATING SYSTEMS METHODS	0.13	3	3.00	30.36	33.36
INT 30200	LUBRICANT STORAGE AND HANDLING	0.08	2	3.00	18.68	21.68
INT 30210	NOMENCLATURE TYPES OF BEARING	0.17	4	6.00	39.70	45.70
INT 30220	HANDLING AND STORING BEARINGS	0.08	2	3.00	18.68	21.68
INT 30230	BEARING INSTALLATION REMOVAL	0.50	12	8.00	116.75	124.75
INT 30240	BEARING LUBRICATION AND SEALS	0.25	6	8.00	58.38	66.38
INT 30250	TROUBLESHOOT BEARING FAILURE	0.21	5	8.00	49.04	57.04
INT 30260	RIGGING SAFETY WEIGHT ESTIMATE	0.13	3	17.00	30.36	47.36

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 30 ELECTRO-MECHANICAL DEVICES, EQUIPMENT, AND SAFETY (CONTINUED)						
INT 30270	RIGGING SAFETY WIRE ROPE SLING	0.13	3	17.00	30.36	47.36
INT 30280	RIG SAFETY FIBER ROPE SLINGS	0.38	9	17.00	88.73	105.73
INT 30290	RIGGING SAFETY CHAIN SLINGS	0.08	2	17.00	18.68	35.68
INT 30300	RIGGING SAFETY HOISTS CRANES	0.21	5	17.00	49.04	66.04
INT 30310	RIGGING SAFETY HAND SIGNALS	0.13	3	17.00	30.36	47.36
INT 30320	HAND AND POWER TOOLS	0.67	16	26.00	156.45	182.45
INT 30330	FORKLIFT SAFETY	0.17	4	33.00	39.70	72.70
	UNIT TOTAL	10.78	258	698.00	2,517.24	3,215.24
UNIT 35 PROGRAMMING AND CONTROLS						
INT 35010	INTRODUCTION TO ROBOTICS	0.67	16	29.00	156.45	185.45
INT 35020	ROBOT PROGRAMMING	1.29	31	29.00	301.22	330.22
INT 35030	ROBOT PROGRAMMING FANUC	0.75	18	103.00	175.13	278.13
INT 35035	ROBOT PROGRAMMING MOTOMAN	1.67	40	140.00	389.95	529.95
INT 35045	ROBOT ONLINE PROGRAM ABB IRC5	1.00	24	66.00	233.50	299.50
INT 35060	ROBOT ONLINE PROGRAM DENSO	0.42	10	3.00	98.07	101.07
INT 35070	ROBOT OFFLINE PROGRAM FANUC	0.58	14	3.00	135.43	138.43
INT 35080	ROBOT OFFLINE PROGRAM DENSO	0.83	20	3.00	193.81	196.81
INT 35085	ROBOT OFFLINE PROGRAM MOTOMAN	1.00	24	8.00	233.50	241.50
INT 35090	ROBOTIC MAINT PM TROUBLESHOOT	1.04	25	43.00	242.84	285.84
INT 35100	ROBOTICS INTEGRATION WITH PLC	0.63	15	23.00	147.11	170.11
INT 35105	ETHERNET NETWORKING PROTOCOLS	0.50	12	35.00	116.75	151.75
INT 35110	ROBO WRKCELL INTEGRTE INTERFAC	1.00	24	28.00	233.50	261.50
INT 35120	MACHINE CENTER INTEGRATION	1.00	24	8.00	233.50	241.50
	UNIT TOTAL	12.38	297	521.00	2,890.76	3,411.76
UNIT 40 MAINTENANCE SYSTEMS DESIGN AND DEVELOPMENT						
INT 40010	PRODUCTION PRODUCT HANDLING	0.58	14	113.00	135.43	248.43
INT 40020	IND MAINTENANCE TROUBLESHOOTIN	0.92	22	138.00	214.82	352.82
INT 40030	PREVENTIVE PREDICTIVE MAINTEN	1.25	30	46.00	291.88	337.88
INT 40040	FUNDAMENTALS HYDRAULIC CIRCUIT	0.33	8	13.00	77.06	90.06
INT 40050	HYDRAULIC FLUIDS	0.33	8	23.00	77.06	100.06
INT 40060	CONTROL VALVES	0.33	8	23.00	77.06	100.06
INT 40070	FLOW CONTROL VALVES CIRCUITS	0.33	8	16.00	77.06	93.06
INT 40080	ACTUATORS	0.33	8	16.00	77.06	93.06
INT 40090	VALVES	0.33	8	13.00	77.06	90.06
INT 40100	HYDRAULIC CIRCUITS	0.33	8	23.00	77.06	100.06
INT 40110	REMOTE CONTROL FILTRATION TRBL	0.33	8	33.00	77.06	110.06
INT 40120	FACTS ABOUT AIR	0.33	8	23.00	77.06	100.06
INT 40130	AIR PREPARATION	0.33	8	13.00	77.06	90.06
INT 40140	AIR PIPING	0.33	8	23.00	77.06	100.06
INT 40150	PNEUMATIC ACTUATORS	0.33	8	13.00	77.06	90.06
INT 40160	PNEUMATIC VALVES	0.33	8	13.00	77.06	90.06
INT 40170	PNEUMATIC CYLINDER SPEED CNTRL	0.33	8	13.00	77.06	90.06
INT 40180	PNEUMATIC TROUBLESHOOTING	0.33	8	13.00	77.06	90.06
	UNIT TOTAL	7.70	186	568.00	1,798.03	2,366.03

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 45 QUALITY AND LEAN MANUFACTURING						
INT 45010	INTRODUCTION TO QUALITY	1.71	41	23.00	399.29	422.29
INT 45020	COSTS AND TOOLS OF QUALITY	1.71	41	33.00	399.29	432.29
INT 45030	QUALITY SYSTEMS LEAN MFG	0.67	16	123.00	156.45	279.45
INT 45040	5S SYSTEM	0.33	8	73.00	77.06	150.06
INT 45050	TPM POKA YOKE AND LEAN THEORY	0.45	11	93.00	105.08	198.08
INT 45060	LEAN VISUAL WORKPLACE KAIZEN	0.29	7	43.00	67.72	110.72
INT 45070	VALUE STREAM MAPPING SETUP RED	0.38	9	73.00	88.73	161.73
INT 45080	METROLOGY	0.29	7	13.00	67.72	80.72
INT 45090	MACHINE VISION	1.38	33	173.00	322.23	495.23
	UNIT TOTAL	7.21	173	647.00	1,683.57	2,330.57
PROGRAM TOTAL		53.03	1,274	3,523.00	12,382.85	15,905.85

ASSESSMENTS

*INT C410	MSSC CERTIFIED PRODUCTION TEC		6	280.00	0.00	280.00
*INT C420	MSSC SAFETY ASSESSMENT		1.5	80.00	0.00	80.00
*INT C430	MSSC QUALITY ASSESSMENT		1.5	80.00	0.00	80.00
*INT C440	MSSC MFG PROCESSES ASSESSMENT		1.5	80.00	0.00	80.00
*INT C450	MSSC MAINTENANCE ASSESSMENT		1.5	80.00	0.00	80.00
*INT C460	ASQ QUALITY INSPECTOR CERT		4	250.00	0.00	250.00
*INT C470	ASQ QUALITY PROCESS ANALYST		4	250.00	0.00	250.00
*INT C480	ASQ QUALITY IMPROVEMENT ASSOC		3	250.00	0.00	250.00
*INT C490	SME CMFGT PRE-TEST		3	280.00	0.00	280.00
*INT C500	SME CMFGT CERTIFICATION		3	320.00	0.00	320.00
*INT C510	PMMI FLUID POWER 1 ASSESSMENT		3	81.00	0.00	81.00
*INT C520	PMMI MECHANICAL COMPONENTS 1		3	81.00	0.00	81.00

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

INSTRUMENTATION

PROGRAM INFORMATION

Students enrolled in the Instrumentation program at the RMTC will learn process control, measurement instrumentation, pressure measurement, force weight and motion in instrumentation, flow measurement, level measurement, temperature measurement, analytical measurement and final control elements.



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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.						
INST C910	INSTRUMENTATION ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					
UNIT05		INTRO TO PROCESS CONTROL				
INST 05010	PROCESS VARIAB OPERAT SIGNAL	0.50	12	10.00	116.75	126.75
INST 05020	INSTRUMENT IDENTIFICATION	0.17	4	10.00	39.70	49.70
INST 05030	SEQUENCE OF OPERATION	0.17	4	10.00	39.70	49.70
INST 05040	INDUSTRIAL REQUIREMENTS	0.17	4	10.00	39.70	49.70
INST 05050	SYSTEM FAMILIARIZATION 1	0.50	12	27.00	116.75	143.75
	UNIT TOTAL	1.51	36	67.00	352.60	419.60
UNIT10		MEASUREMENT INSTRUMENTATION				
INST 10010	PROCESS MEASUREMENT	0.25	6	12.00	58.38	70.38
INST 10020	TRANSDUCER OPERAT BASIC MEASU	0.33	8	12.00	77.06	89.06
INST 10030	CALIBRATION QUALITY CONTROL	0.33	8	12.00	77.06	89.06
INST 10040	SYSTEM FAMILIARIZATION 2	1.00	24	27.00	233.50	260.50
	UNIT TOTAL	1.91	46	63.00	446.00	509.00
UNIT15		PRESSURE MEASUREMENT				
INST 15010	PRESSURES IN LIQUIDS AND GASES	0.25	6	10.00	58.38	68.38
INST 15020	PRESSURE SENSORS AND TRANSDUCE	0.33	8	10.00	77.06	87.06
INST 15030	LOW PRESSURE MEASUREMENT	0.25	6	10.00	58.38	68.38
INST 15040	INSTALLATION AND SERVICE	0.25	6	10.00	58.38	68.38
INST 15050	PRESSURE LAB	1.50	36	7.00	350.25	357.25
	UNIT TOTAL	2.58	62	47.00	602.45	649.45
UNIT20		FORCE, WEIGHT, AND MOTION				
INST 20010	FORCE STRESS AND STRAIN	0.33	8	9.00	77.06	86.06
INST 20020	WEIGHT AND MASS MEASUREMENT	0.33	8	9.00	77.06	86.06
INST 20030	MATERIALS IN MOTION	0.17	4	9.00	39.70	48.70
INST 20040	POSITIONING MEASUREMENT	0.25	6	9.00	58.38	67.38

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INST 20050	ACCELERATION VIBRATION SHOCK	0.25	6	9.00	58.38	67.38
	UNIT TOTAL	1.33	32	45.00	310.58	355.58
UNIT25	FLOW MEASUREMENT					
INST 25010	INTRODUCTION TO FLUID FLOW	0.17	4	8.00	39.70	47.70
INST 25020	MEASURING DEVICES PRI AND SEC	0.25	6	8.00	58.38	66.38
INST 25030	VARIABLE AREA INSTRUMENTS	0.17	4	8.00	39.70	47.70
INST 25040	OPEN CHANNEL FLOW POS DISPLACE	0.33	8	8.00	77.06	85.06
INST 25050	TURBINE AND MAGNETIC FLOWMETER	0.25	6	8.00	58.38	66.38
INST 25060	FLOWMETERS SOLIDS CALIBRATION	0.33	8	8.00	77.06	85.06
INST 25070	FLOW LAB	1.50	36	7.00	350.25	357.25
	UNIT TOTAL	3.00	72	55.00	700.53	755.53
UNIT30	LEVEL MEASUREMENT					
INST 30010	LEVEL MEASUREMENT	0.17	4	10.00	39.70	49.70
INST 30020	ELECTRIC PRESSURE HEAD INSTRUM	0.33	8	10.00	77.06	87.06
INST 30030	SOLID LEVEL MEASUREMENT	0.33	8	10.00	77.06	87.06
INST 30040	OTHER LEVELING MEASUREMENTS	0.17	4	10.00	39.70	49.70
INST 30050	LEVEL LAB	1.50	36	7.00	350.25	357.25
	UNIT TOTAL	2.50	60	47.00	583.77	630.77
UNIT35	TEMPERATURE MEASUREMENT					
INST 35010	PRINCIPLES AND INDICATORS	0.17	4	10.00	39.70	49.70
INST 35020	ELEC BIMETAL FLUID INSTRUMENTS	0.50	12	10.00	116.75	126.75
INST 35030	PYROMETRY	0.25	6	10.00	58.38	68.38
INST 35040	CALIBRATION AND SETUP	0.25	6	10.00	58.38	68.38
INST 35050	TEMPERATURE LAB	2.00	48	7.00	467.00	474.00
	UNIT TOTAL	3.17	76	47.00	740.21	787.21
UNIT40	ANALYTICAL MEASUREMENT					
INST 40010	MEASURING CONDUCTIVITY PH ORP	0.25	6	12.00	58.38	70.38
INST 40020	OPTICAL MEASURE AND COMBUSTION	0.17	4	12.00	39.70	51.70
INST 40030	CHROMATOGRAPHY	0.17	4	12.00	39.70	51.70
	UNIT TOTAL	0.59	14	36.00	137.78	173.78
UNIT45	FINAL CONTROL ELEMENTS					
INST 45010	FINAL CONTROL ELEMENTS	0.17	4	10.00	39.70	49.70
INST 45020	ELEC PNEUM HYDRAULIC ACTUATORS	0.50	12	10.00	116.75	126.75
INST 45030	CONTROL VALVES	0.25	6	10.00	58.38	68.38
INST 45040	CONTROL ELEMENT APPLICATION	0.25	6	10.00	58.38	68.38
INST 45050	CONTROL VALVE LAB	1.00	24	7.00	233.50	240.50
	UNIT TOTAL	2.17	52	47.00	506.71	553.71
	PROGRAM TOTAL	18.76	452	454.00	4,380.63	4,834.63

INDUSTRIAL MACHINING TECHNOLOGY

PROGRAM INFORMATION

Certificate 30 Credits Associate in Applied Science 60 Credits

Students enrolled in a Machining Technology program will learn machine tool safety, precision measurement, drill press and band saw operation, lathe turning, electronic discharge machine operation, vertical and horizontal milling, grinding, CNC programming, and CAM.



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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

INMT C910	MACHINING TECH ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					
UNIT 05	MACHINE TOOL BASICS					
INMT 05010	MACHINERY'S HANDBOOK	0.17	4	18.00	39.70	57.70
	UNIT TOTAL	0.17	4	18.00	39.70	57.70
UNIT 10	MACHINE TOOL SAFETY					
INMT 10010	MACHINE TOOL SAFETY	0.17	4	30.00	39.70	69.70
	UNIT TOTAL	0.17	4	30.00	39.70	69.70
UNIT 15	BLUEPRINT READING					
INMT 15010	MACHINE TOOL BLUEPRINT READ	0.83	20	47.00	193.81	240.81
INMT 15020	GEOMETRIC DIMENSION TOLERANCE	0.33	8	44.00	77.06	121.06
	UNIT TOTAL	1.16	28	91.00	270.87	361.87
UNIT 20	FUNDAMENTAL SKILLS					
INMT 20010	BASIC SHOP MATH	0.67	16	47.00	156.45	203.45
INMT 20020	MACHINE TOOL MATH	0.75	18	56.00	175.13	231.13
INMT 20030	MACHINIST SCALE	0.08	2	23.00	18.68	41.68
INMT 20040	DIVIDERS	0.08	2	16.00	18.68	34.68
INMT 20050	SPRING CALIPERS	0.08	2	18.00	18.68	36.68
INMT 20060	COMBINATION SQUARE	0.08	2	24.00	18.68	42.68
INMT 20070	HERMAPHRODITE CALIPERS	0.08	2	18.00	18.68	36.68
INMT 20080	SURFACE GAGE	0.08	2	18.00	18.68	36.68
INMT 20090	IDENTIFY SURFACE FINISHES	0.08	2	13.00	18.68	31.68
	UNIT TOTAL	1.98	48	233.00	462.34	695.34

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 25	PRECISION MEASUREMENT					
INMT 25010	MICROMETER	0.13	3	17.00	30.36	47.36
INMT 25020	CALIPER DIGITAL VERN DIAL	0.17	4	12.00	39.70	51.70
INMT 25030	TELESCOPING GAGES	0.13	3	14.00	30.36	44.36
INMT 25040	DEPTH MICROMETER	0.13	3	10.00	30.36	40.36
INMT 25050	DIAL INDICATORS	0.13	3	12.00	30.36	42.36
INMT 25060	GAGE BLOCKS	0.13	3	21.00	30.36	51.36
INMT 25070	MACHINE SHOP TRIGONOMETRY	0.67	16	35.00	156.45	191.45
INMT 25080	HEIGHT GAGE	0.17	4	10.00	39.70	49.70
INMT 25090	SINE BAR	0.17	4	12.00	39.70	51.70
INMT 25100	CMM FUNDAMENTALS	0.25	6	22.00	58.38	80.38
INMT 25110	CMM PART INSPECTION	0.67	16	27.00	156.45	183.45
	UNIT TOTAL	2.75	65	192.00	642.18	834.18
UNIT 30	DRILL PRESS AND BAND SAW					
INMT 30010	SHOP MATH SPEEDS AND FEEDS	0.21	5	35.00	49.04	84.04
INMT 30020	SHARPENING DRILL BITS	0.25	6	15.00	58.38	73.38
INMT 30030	DRILLING ON THE DRILL PRESS	0.17	4	14.00	39.70	53.70
INMT 30040	REAMING ON THE DRILL PRESS	0.13	3	11.00	30.36	41.36
INMT 30050	COUNTERBORE SPOTFACE COUNTERSI	0.21	5	11.00	49.04	60.04
INMT 30060	HAND TAP ON THE DRILL PRESS	0.21	5	14.00	49.04	63.04
INMT 30070	POWER TAP ON THE DRILL PRESS	0.25	6	11.00	58.38	69.38
INMT 30080	DRILL PRESS PROJECT	0.58	14	35.00	135.43	170.43
INMT 30090	BAND SAW BLADE WELDING	0.25	6	31.00	58.38	89.38
INMT 30100	VERTICAL BAND SAW PROJECT	0.25	6	21.00	58.38	79.38
	UNIT TOTAL	2.51	60	198.00	586.13	784.13
UNIT 35	TURNING ON LATHE					
INMT 35010	MAINTAINING THE LATHE	0.17	4	18.00	39.70	57.70
INMT 35020	GRINDING LATHE TOOLS	0.25	6	32.00	58.38	90.38
INMT 35030	FACING ON THE LATHE	0.21	5	23.00	49.04	72.04
INMT 35040	ALIGNING LATHE CENTERS	0.17	4	18.00	39.70	57.70
INMT 35050	PARALLEL TURNING ON THE LATHE	0.21	5	17.00	49.04	66.04
INMT 35060	GROOVE AND PART ON THE LATHE	0.13	3	16.00	30.36	46.36
INMT 35070	CUT RADII AND EXTERNAL TAPERS	0.50	12	14.00	116.75	130.75
INMT 35080	KNURLING ON THE LATHE	0.13	3	12.00	30.36	42.36
INMT 35090	BORING INTERNAL TAPERS	0.67	16	15.00	156.45	171.45
INMT 35100	CUTTING EXTERNAL THREADS	0.50	12	29.00	116.75	145.75
INMT 35110	CUTTING INTERNAL THREADS	0.42	10	14.00	98.07	112.07
INMT 35120	LATHE PROJECT	1.25	30	32.00	291.88	323.88
	UNIT TOTAL	4.61	110	240.00	1076.48	1316.48
UNIT 40	ELECTRONIC DISCHARGE MACHINING					
INMT 40010	EDM FUNDAMENTALS	0.29	7	16.00	67.72	83.72
INMT 40020	EDM PROJECT	0.50	12	22.00	116.75	138.75
	UNIT TOTAL	0.79	19	38.00	184.47	222.47

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 45 VERTICAL/HORIZONTAL MILLING						
INMT 45010	DIAL IN VISE TRAM IN HEAD	0.21	5	18.00	49.04	67.04
INMT 45020	FLY CUTTER END MILL SQ BLOCK	0.21	5	19.00	49.04	68.04
INMT 45030	TILT HEAD TURN VISE CUT V	0.50	12	20.00	116.75	136.75
INMT 45040	DIGITAL READ DRILL TAP REAM	0.25	6	20.00	58.38	78.38
INMT 45050	TURNTABLE CUT RADII	0.33	8	20.00	77.06	97.06
INMT 45060	HORIZONTAL MILLING SAW SLOT	0.17	4	13.00	39.70	52.70
INMT 45070	SINE PLATE CUT ANGLES	0.33	8	17.00	77.06	94.06
INMT 45080	BORING HEAD BORE 4 HOLES	0.33	8	21.00	77.06	98.06
INMT 45090	INDEXING HEAD TO CUT KEYWAYS	0.17	4	17.00	39.70	56.70
INMT 45100	MATH FOR DIVIDING HEAD	0.17	4	11.00	39.70	50.70
INMT 45110	DIVIDING HEAD TO CUT GEARS	0.42	10	15.00	98.07	113.07
INMT 45120	UNIVERSAL INDEXING HEAD	0.50	12	13.00	116.75	129.75
INMT 45130	5C COLLET TO CUT SQUARE HEX	0.33	8	13.00	77.06	90.06
INMT 45140	MAKE DOVE TAILS	0.67	16	34.00	156.45	190.45
INMT 45150	MILL PROJECT	1.25	30	32.00	291.88	323.88
	UNIT TOTAL	5.84	140	283.00	1,363.70	1,646.70
UNIT 50 SURFACE GRINDING						
INMT 50010	SQUARE A BLOCK (6 SIDES)	0.25	6	30.00	58.38	88.38
INMT 50020	GRIND ANGLES AND RADII	0.50	12	27.00	116.75	143.75
INMT 50030	OPERATE THE AUTOMATIC GRINDER	0.42	10	17.00	98.07	115.07
INMT 50040	COMPLETE TWO PROJECTS TO PRINT	1.58	38	21.00	368.93	389.93
	UNIT TOTAL	2.75	66	95.00	642.13	737.13
UNIT 55 CYLINDRICAL GRINDING						
INMT 55010	PARALLEL GRIND TO PRINT	1.00	24	25.00	233.50	258.50
INMT 55020	EXTERNAL AND INTERNAL TAPERS	0.50	12	18.00	116.75	134.75
	UNIT TOTAL	1.50	36	43.00	350.25	393.25
UNIT 65 CNC PROGRAMMING AND MACHINING						
INMT 65010	CNC FUNDAMENTALS	0.83	20	93.00	193.81	286.81
INMT 65020	CNC TURNING	1.67	40	119.00	389.95	508.95
INMT 65030	CNC MILLING	1.67	40	112.00	389.95	501.95
INMT 65040	CNC ADVANCED PROGRAMMING	2.08	50	95.00	485.68	580.68
	UNIT TOTAL	6.25	150	419.00	1,459.39	1,878.39
UNIT 70 MACHINE TOOL PROJECTS						
INMT 70010	SINE BAR	0.83	20	22.00	193.81	215.81
INMT 70020	PRECISION VISE	2.08	50	32.00	485.68	517.68
INMT 70030	1-2-3 BLOCKS	1.00	24	22.00	233.50	255.50
INMT 70040	TOOL MAKERS V-BLOCKS	1.67	40	24.00	389.95	413.95
	UNIT TOTAL	5.58	134	100.00	1,302.94	1,402.94
UNIT 75 MASTERCAM						
INMT 75010	MASTERCAM LEVEL 1 MILL	1.50	36	88.00	350.25	438.25
INMT 75020	MASTERCAM LEVEL 3 MILL	2.00	48	82.00	467.00	549.00
INMT 75030	MASTERCAM LATHE DESIGN	1.00	24	59.00	233.50	292.50
	UNIT TOTAL	4.50	108	229.00	1,050.75	1,279.75
PROGRAM TOTAL		40.56	974	2,209.00	9,471.03	11,680.03

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ASSESSMENTS

*INMT C410	NIMS MEASUREMENT MATERIALS SAFETY		2	95.00	0.00	95.00
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SPECIAL PROJECT MODULES

(These modules **cannot be articulated**. Students must have instructor approval to register.)

*INMT C710	BASIC MACHINING PROJECT		2	70.00	0.00	70.00
*INMT C720	INTERMEDIATE MACHINING PROJEC		4	140.00	0.00	140.00
*INMT C730	ADVANCED MACHINING PROJECT		6	210.00	0.00	210.00

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

INDUSTRIAL PIPEFITTING

PROGRAM INFORMATION

Certificate 25 Credits Associate in Applied Science 60 Credits

Students enrolled in a Industrial Pipefitting program at the RMTC will learn pipefitting safety, pipefitting science, blueprint reading, mathematics for pipefitting, pipefitting, plumbing, fire protection, thermodynamics of heat, expansion, pumps, flow control, compressed air, steam, boilers, and piping maintenance.



Andrew Redlon, Instructor

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

INPF C910	PIPEFITTING ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					

UNIT 05 SAFETY

INPF 05011	PIPEFITTING SAFETY	1.00	24	19.00	233.50	252.50
	UNIT TOTAL	1.00	24	19.00	233.50	252.50

UNIT 10 PIPEFITTING SCIENCE

INPF 10011	PIPEFITTING SCIENCE	0.25	6	17.00	58.38	75.38
	UNIT TOTAL	0.25	6	17.00	58.38	75.38

UNIT 15 BLUEPRINT READING

INPF 15011	INTRO TO BLUEPRINT READING	0.33	8	13.00	77.06	90.06
INPF 15021	IDENTIFYING PIPING SYMBOLS	0.25	6	11.00	58.38	69.38
INPF 15031	READ INTERPRET PIPING BLUEPRI	0.25	6	11.00	58.38	69.38
INPF 15041	TROUBLESHOOTING BLUEPRINTS	0.08	2	6.00	18.68	24.68
	UNIT TOTAL	0.91	22	41.00	212.50	253.50

UNIT 20 INTRODUCTION TO PIPEFITTING

INPF 20011	PIPEFITTING TOOLS MATERIALS	0.25	6	23.00	58.38	81.38
INPF 20021	TYPES OF PIPING	0.42	10	17.00	98.07	115.07
INPF 20031	SPECIALTY PIPING	0.33	8	6.00	77.06	83.06
INPF 20041	PIPE FITTINGS & PRESSURE LOSS	0.25	6	19.00	58.38	77.38
INPF 20051	PIPING CONNECTIONS	0.33	8	21.00	77.06	98.06
INPF 20061	PIPE CUTTING AND THREADS	0.17	4	6.00	39.70	45.70
INPF 20071	PIPING FLANGES	0.42	10	21.00	98.07	119.07
INPF 20081	PIPING STAINLESS	0.33	8	36.00	77.06	113.06
	UNIT TOTAL	2.50	60	149.00	583.78	732.78

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 25 MATHEMATICS FOR PIPEFITTING						
INPF 25012	PIPEFITTING MATH 1	0.17	4	24.00	39.70	63.70
INPF 25022	PIPEFITTING MATH 2	0.25	6	24.00	58.38	82.38
INPF 25032	PIPEFITTING MATH 3	0.63	15	84.00	147.11	231.11
INPF 25042	PIPEFITTING MATH 4	0.25	6	24.00	58.38	82.38
INPF 25052	PIPEFITTING MATH 5	0.25	6	24.00	58.38	82.38
INPF 25062	PIPEFITTING MATH 6	0.83	20	84.00	193.81	277.81
INPF 25072	PIPEFITTING MATH 7	0.25	6	24.00	58.38	82.38
	UNIT TOTAL	2.63	63	288.00	614.14	902.14
UNIT 30 PIPEFITTING						
INPF 30011	BASIC RATIO PIPE CAPACITIES	0.25	6	35.00	58.38	93.38
INPF 30021	VALVES MANUAL	0.42	10	32.00	98.07	130.07
INPF 30031	VALVES SELF CONTAINED	0.29	7	16.00	67.72	83.72
INPF 30041	PIPING SUPPORT	0.25	6	36.00	58.38	94.38
INPF 30051	PVC PIPING	0.29	7	24.00	67.72	91.72
INPF 30061	PIPING COMPRESSION	0.25	6	6.00	58.38	64.38
INPF 30071	SOLDERING AND BRAZING	0.63	15	21.00	147.11	168.11
INPF 30081	TUBE BENDING	0.29	7	34.00	67.72	101.72
INPF 30091	PRESSURE TAP & TRACING	0.42	10	41.00	98.07	139.07
INPF 30101	VICTAULIC	0.33	8	6.00	77.06	83.06
INPF 30111	FIBERGLASS REINFORCED PIPE	0.08	2	41.00	18.68	59.68
INPF 30121	GREENTHREAD	0.08	2	6.00	18.68	24.68
INPF 30131	CPVC PIPING	0.08	2	31.00	18.68	49.68
	UNIT TOTAL	3.66	88	329.00	854.65	1,183.65
UNIT 35 PLUMBING						
INPF 35011	PURPOSE OF THE PLUMBING CODE	0.17	4	12.00	39.70	51.70
INPF 35021	FIXTURES & APPLIANCES	0.17	4	12.00	39.70	51.70
INPF 35031	POTABLE WATER PROTECTION	0.42	10	42.00	98.07	140.07
INPF 35041	SEWAGE SYSTEMS	0.21	5	12.00	49.04	61.04
INPF 35051	DRAINS	0.21	5	12.00	49.04	61.04
INPF 35061	TRAPS INTERCEPTORS BACKWATER	0.42	10	12.00	98.07	110.07
INPF 35071	STACKS & ROUGH-IN SHEETS	0.17	4	12.00	39.70	51.70
INPF 35081	PURPOSE OF ASME CODE	0.08	2	6.00	18.68	24.68
INPF 35091	USING THE ASME CODE	0.17	4	6.00	39.70	45.70
INPF 35101	IMPORTANCE OF SAFETIES	0.08	2	53.00	18.68	71.68
INPF 35111	PRESSURE TEST AND LEAK TEST	0.29	7	6.00	67.72	73.72
INPF 35121	VENTING DRAINAGE SYSTEMS	0.21	5	6.00	49.04	55.04
INPF 35131	INSTALLING WATER HEATERS	0.17	4	6.00	39.70	45.70
	UNIT TOTAL	2.77	66	197.00	646.84	843.84
UNIT 40 FIRE PROTECTION						
INPF 40011	NFPA 13 CODE BOOK	0.29	7	26.00	67.72	93.72
INPF 40021	SPRINKLER HEADS	0.21	5	6.00	49.04	55.04
INPF 40031	WET FIRE PROTECTION SYSTEM	0.21	5	11.00	49.04	60.04
INPF 40041	DRY FIRE PROTECTION SYSTEM	0.21	5	11.00	49.04	60.04
INPF 40051	DELUGE & FOAM FIRE PROTECTION	0.21	5	6.00	49.04	55.04
	UNIT TOTAL	1.13	27	60.00	263.88	323.88

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 45	THERMODYNAMICS OF HEAT					
INPF 45011	FORCE AND MOTION	0.08	2	8.00	18.68	26.68
INPF 45021	LAWS OF MOTION	0.08	2	8.00	18.68	26.68
INPF 45031	CONSERVATION OF MOMENTUM	0.08	2	8.00	18.68	26.68
INPF 45041	GRAVITY	0.08	2	8.00	18.68	26.68
INPF 45051	ATOMS AND MOLECULES	0.08	2	8.00	18.68	26.68
INPF 45061	SOLIDS	0.08	2	8.00	18.68	26.68
INPF 45071	LIQUIDS AND GASES	0.08	2	8.00	18.68	26.68
INPF 45081	TEMPERATURE AND HEAT	0.08	2	8.00	18.68	26.68
INPF 45091	CHANGE OF STATE	0.08	2	8.00	18.68	26.68
	UNIT TOTAL	0.72	18	72.00	168.12	240.12
UNIT 50	EXPANSION					
INPF 50011	EXPANSION JOINTS	0.08	2	6.00	18.68	24.68
	UNIT TOTAL	0.08	2	6.00	18.68	24.68
UNIT 55	PUMPS					
INPF 55011	CENTRIFUGAL PUMPS	0.42	10	6.00	98.07	104.07
INPF 55021	POSITIVE DISPLACEMENT PUMPS	0.42	10	26.00	98.07	124.07
	UNIT TOTAL	0.84	20	32.00	196.14	228.14
UNIT 60	FLOW CONTROL					
INPF 60011	CONTROL THEORY 1	0.33	8	17.00	77.06	94.06
INPF 60021	CONTROL THEORY 2	0.13	3	17.00	30.36	47.36
INPF 60031	CONTROL THEORY 3	0.33	8	17.00	77.06	94.06
INPF 60041	CONTROL VALVES	0.25	6	6.00	58.38	64.38
INPF 60051	REGULATORS	0.25	6	6.00	58.38	64.38
INPF 60061	PRESSURE REDUCING VALVES	0.67	16	6.00	156.45	162.45
INPF 60071	ELECTROMECHANICAL CONTROLS	0.25	6	6.00	58.38	64.38
INPF 60081	PNEUMATIC CONTROLS	0.67	16	6.00	156.45	162.45
INPF 60091	FLOW MEASUREMENT	0.29	7	6.00	67.72	73.72
	UNIT TOTAL	3.17	76	87.00	740.24	827.24
UNIT 65	COMPRESSED AIR					
INPF 65011	TYPES OF AIR COMPRESSORS	0.13	3	21.00	30.36	51.36
INPF 65021	SUPPORTING COMPONENTS	0.25	6	21.00	58.38	79.38
	UNIT TOTAL	0.38	9	42.00	88.74	130.74
UNIT 70	STEAM					
INPF 70011	STEAM SAFETY	0.13	3	6.00	30.36	36.36
INPF 70021	FUNDAMENTALS OF STEAM	0.25	6	6.00	58.38	64.38
INPF 70031	STEAM TRAPS	0.67	16	6.00	156.45	162.45
INPF 70041	WATER HAMMER	0.08	2	6.00	18.68	24.68
INPF 70051	STEAM COILS AND RADIATORS	0.33	8	6.00	77.06	83.06
INPF 70061	VACUUM BREAKERS	0.17	4	6.00	39.70	45.70
INPF 70071	STEAM HEAT EXCHANGERS	0.42	10	6.00	98.07	104.07
	UNIT TOTAL	2.05	49	42.00	478.70	520.70

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 75	BOILERS					
INPF 75011	FUNDAMENTALS OF BOILERS	0.17	4	21.00	39.70	60.70
INPF 75021	HOT WATER BOILERS	0.42	10	12.00	98.07	110.07
INPF 75031	AIR TRAPS	0.08	2	6.00	18.68	24.68
INPF 75041	LOW PRESSURE BOILERS	0.29	7	12.00	67.72	79.72
INPF 75051	HIGH PRESSURE BOILERS	0.54	13	15.00	126.09	141.09
INPF 75061	BOILER CONTROLS	0.25	6	85.00	58.38	143.38
INPF 75071	BOILER SAFETIES	0.08	2	6.00	18.68	24.68
INPF 75081	BOILER VALVES	0.17	4	12.00	39.70	51.70
INPF 75091	BOILER BLOWDOWN	0.08	2	15.00	18.68	33.68
INPF 75101	CONDENSATE RETURN	0.50	12	6.00	116.75	122.75
INPF 75111	BOILER FEED WATER	0.25	6	12.00	58.38	70.38
INPF 75121	TROUBLESHOOTING BOILERS	0.25	6	6.00	58.38	64.38
INPF 75131	BOILER PREVENTATIVE MAINT INS	0.25	6	6.00	58.38	64.38
	UNIT TOTAL	3.33	80	214.00	777.59	991.59
UNIT 80	PIPING MAINTENANCE					
INPF 80011	PIPING MAINTENANCE	0.50	12	6.00	116.75	122.75
	UNIT TOTAL	0.50	12	6.00	116.75	122.75
PROGRAM TOTAL		25.92	624	1,601.00	6,052.63	7,653.63

RENEWABLE ENERGY PROGRAM INFORMATION

Certificate 25 Credits

Students enrolled in a 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.



Kevin Barnes, Professor

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MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

INRE C910	RENEWABLE ENERGY ORIENTATION		2	0.00	0.00	0.00
INEL C910	ELECTRIC ELECTRONICS ORIENTATION		2	0.00	0.00	0.00
The orientation must be completed at the RMTC in Battle Creek prior to registration.						
Please call 269.965.4137 to verify available orientation times.						

INEL modules must be completed first.

UNIT 05 ELECTRICAL SAFETY

INEL 05010	ELECTRICAL SAFETY	0.17	4	3.00	39.70	42.70
UNIT TOTAL		0.17	4	3.00	39.70	42.70

UNIT 10 MATHEMATICS FOR ELECTRICIANS

INEL 10020	ELECTRICAL MATH 2	0.25	6	3.00	58.38	61.38
INEL 10030	ELECTRICAL MATH 3	0.25	6	3.00	58.38	61.38
UNIT TOTAL		0.50	12	6.00	116.76	122.76

UNIT 15 ELECTRICAL THEORY

INEL 15010	ELECTRICAL THEORY	0.25	6	23.00	58.38	81.38
INEL 15020	STATIC ELECTRICITY	0.25	6	23.00	58.38	81.38
INEL 15030	CALCULATORS AND ELECTRONICS	0.25	6	23.00	58.38	81.38
INEL 15040	DEVICES AND SYMBOLS	0.25	6	23.00	58.38	81.38
INEL 15050	MULTIMETER	0.33	8	23.00	77.06	100.06
INEL 15060	OHM'S LAW	0.33	8	23.00	77.06	100.06
INEL 15070	SERIES CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15080	PARALLEL CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15090	COMBINATION CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15100	MAGNETISM	0.25	6	23.00	58.38	81.38
INEL 15110	ALTERNATING CURRENT	0.25	6	23.00	58.38	81.38
INEL 15120	OSCILLOSCOPE	0.33	8	23.00	77.06	100.06
INEL 15130	INDUCTANCE	0.42	10	23.00	98.07	121.07
INEL 15140	CAPACITANCE	0.42	10	23.00	98.07	121.07
INEL 15150	RLC CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15160	CONDUCTION	0.33	8	23.00	77.06	100.06
INEL 15170	THEORY OVERVIEW	0.21	5	23.00	49.04	72.04
UNIT TOTAL		5.19	125	391.00	1,211.94	1,602.94

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 35 NATIONAL ELECTRICAL CODE (NEC)						
INEL 35010	GENERAL WIRING FUNDAMENTALS	0.25	6	17.00	58.38	75.38
INEL 35020	WIRE RACEWAY AND BOX SIZING	0.33	8	17.00	77.06	94.06
INEL 35030	BRANCH CIRCUITS	0.33	8	17.00	77.06	94.06
INEL 35040	SERVICE FEEDER CALCULATIONS	0.25	6	17.00	58.38	75.38
INEL 35050	GROUNDING AND BONDING	0.33	8	17.00	77.06	94.06
INEL 35060	OVERCURRENT PROTECTION	0.33	8	17.00	77.06	94.06
INEL 35130	SPECIAL APPLICATION WIRING	0.25	6	17.00	58.38	75.38
	UNIT TOTAL	2.07	50	119.00	483.38	602.38
UNIT 40 POWER DISTRIBUTION SYSTEMS						
INEL 40010	POWER GENERATION DISTRIBUTION	0.33	8	39.00	77.06	116.06
INEL 40020	ELECTRICAL WIRING TECHNIQUES	0.33	8	39.00	77.06	116.06
INEL 40030	WIRING SYSTEM INSTALLATION	0.42	10	39.00	98.07	137.07
INEL 40040	INTRODUCTION TO RACEWAYS	0.42	10	39.00	98.07	137.07
INEL 40050	BASIC CONDUIT BENDING	0.25	6	39.00	58.38	97.38
INEL 40060	ADVANCED RACEWAYS	0.25	6	39.00	58.38	97.38
INEL 40070	CONDUCTOR OVERCURRENT PROTECT	0.25	6	39.00	58.38	97.38
INEL 40080	CONDUIT SIZING WIRE PULLING	0.33	8	39.00	77.06	116.06
	UNIT TOTAL	2.58	62	312.00	602.46	914.46
UNIT 05 ENERGY USE						
INRE 05010	MODERN ENERGY SOURCES	0.25	6	20.00	58.38	78.38
INRE 05020	PERSONAL ENERGY USE	0.67	16	25.00	156.45	181.45
INRE 05030	INDUSTRIAL ENERGY USE	0.50	12	20.00	116.75	136.75
INRE 05040	TRADITIONAL ENERGY SOURCES	0.33	8	19.00	77.06	96.06
INRE 05050	EXOTIC ENERGY PRODUCTION	0.33	8	19.00	77.06	96.06
	UNIT TOTAL	2.08	50	103.00	485.70	588.70
UNIT 10 PHOTOVOLTAIC THEORY						
INRE 10010	INTRO TO PHOTOVOLTAIC SYSTEMS	0.50	12	38.00	116.75	154.75
INRE 10020	SOLAR RADIATION	0.50	12	43.00	116.75	159.75
	UNIT TOTAL	1.00	24	81.00	233.50	314.50
UNIT 15 PV COMPONENTS						
INRE 15010	CELLS MODULES AND ARRAYS	0.88	21	50.00	205.48	255.48
INRE 15020	INVERTERS	0.25	6	20.00	58.38	78.38
INRE 15030	BATTERIES CHARGE CONTROLLERS	0.33	8	35.00	77.06	112.06
INRE 15040	BALANCE OF SYSTEM	0.25	6	18.00	58.38	76.38
INRE 15050	SYSTEM TYPES	0.67	16	50.00	156.45	206.45
	UNIT TOTAL	2.38	57	173.00	555.75	728.75
UNIT 20 PHOTOVOLTAIC INSTALLATION						
INRE 20010	PHOTOVOLTAIC SAFETY	0.21	5	17.00	49.04	66.04
INRE 20020	ELECTRICAL NEC REQUIREMENTS	0.75	18	25.00	175.13	200.13
INRE 20030	SITE EVALUATION AND SIZING	0.67	16	48.00	156.45	204.45
INRE 20040	CONSTRUCT COMMISSIONING TROUBL	0.75	18	38.00	175.13	213.13
INRE 20050	PHOTOVOLTAIC SYSTEM PROJECT	1.00	24	55.00	233.50	288.50
	UNIT TOTAL	3.38	81	183.00	789.25	972.25

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 25 WIND THEORY						
INRE 25010	WIND SYSTEM INTRODUCTION	0.33	8	22.00	77.06	99.06
INRE 25020	HISTORY OF WIND	0.42	10	19.00	98.07	117.07
INRE 25030	METEOROLOGY AND GEOGRAPHY	0.33	8	27.00	77.06	104.06
INRE 25040	MECHANICS OF THE WIND	0.33	8	12.00	77.06	89.06
	UNIT TOTAL	1.41	34	80.00	329.25	409.25
UNIT 30 WIND COMPONENTS						
INRE 30010	TURBINE TECHNOLOGY	0.67	16	27.00	156.45	183.45
INRE 30020	DC GENERATION PRINCIPLES	0.58	14	32.00	135.43	167.43
INRE 30030	AC GENERATION PRINCIPLES	0.42	10	23.00	98.07	121.07
INRE 30040	TOWERS	0.25	6	12.00	58.38	70.38
	UNIT TOTAL	1.92	46	94.00	448.33	542.33
UNIT 35 WIND INSTALLATION						
INRE 35010	WIND SAFETY	0.33	8	12.00	77.06	89.06
INRE 35020	WIND APPLICATION	0.33	8	16.00	77.06	93.06
INRE 35030	BUYING A WIND SYSTEM	0.50	12	16.00	116.75	132.75
INRE 35040	SITING	0.58	14	32.00	135.43	167.43
INRE 35050	SYSTEM INSTALLATION	0.67	16	17.00	156.45	173.45
INRE 35060	SYSTEM OPERATION	0.33	8	17.00	77.06	94.06
	UNIT TOTAL	2.74	66	110.00	639.81	749.81
PROGRAM TOTAL		25.42	615	1,655.00	5,995.83	7,650.83

INDUSTRIAL TOOL AND DIE

PROGRAM INFORMATION



Jason Moore, Instructor
 Phone: 269.565.2852
 Email: moorej@kellogg.edu

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

NOTE: The Industrial Tool and Die curriculum is specifically designed for company sponsored students who are currently working as machinists or toolmakers. The Tool and Die instructor will work with the company representative to select modules within the Tool and Die curriculum which will best serve the student's individual needs.

INTD	C910	TOOL AND DIE ORIENTATION	2	0.00	0.00	0.00
The orientation must be completed at the RMTTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.						

UNIT 10 HEAT-TREATING STEEL FOR MACHINE TOOLS

INTD	10010	HEAT TREATING 1	1.00	24	15.00	233.50	248.50
INTD	10020	HEAT TREATING 2	2.00	48	30.00	467.00	497.00
UNIT TOTAL			3.00	72	45.00	700.50	745.50

UNIT 15 DESIGN VARIOUS JIGS & FIXTURES

INTD	15010	JIG & FIXTURE DESIGN 1	1.00	24	5.00	233.50	238.50
INTD	15020	JIG & FIXTURE DESIGN 2	2.00	48	10.00	467.00	477.00
INTD	15030	JIG & FIXTURE DESIGN 3	3.00	72	15.00	700.50	715.50
UNIT TOTAL			6.00	144	30.00	1,401.00	1,431.00

UNIT 20 DESIGN VARIOUS GAGES

INTD	20010	GAGE DESIGN 1	1.00	24	5.00	233.50	238.50
INTD	20020	GAGE DESIGN 2	2.00	48	10.00	467.00	477.00
INTD	20030	GAGE DESIGN 3	3.00	72	15.00	700.50	715.50
UNIT TOTAL			6.00	144	30.00	1,401.00	1,431.00

UNIT 25 DESIGN VARIOUS DIES

INTD	25010	DIE DESIGN 1	1.00	24	5.00	233.50	238.50
INTD	25020	DIE DESIGN 2	2.00	48	10.00	467.00	477.00
INTD	25030	DIE DESIGN 3	3.00	72	15.00	700.50	715.50
UNIT TOTAL			6.00	144	30.00	1,401.00	1,431.00

UNIT 30 MAKING VARIOUS JIGS & FIXTURES

INTD	30010	JIG & FIXTURE MAKING 1	1.00	24	15.00	233.50	248.50
INTD	30020	JIG & FIXTURE MAKING 2	2.00	48	30.00	467.00	497.00
INTD	30030	JIG & FIXTURE MAKING 3	3.00	72	45.00	700.50	745.50
UNIT TOTAL			6.00	144	90.00	1,401.00	1,491.00

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 35 MAKING VARIOUS GAGES						
INTD 35010	GAGE MAKING 1	1.00	24	15.00	233.50	248.50
INTD 35020	GAGE MAKING 2	2.00	48	30.00	467.00	497.00
INTD 35030	GAGE MAKING 3	3.00	72	45.00	700.50	745.50
	UNIT TOTAL	6.00	144	90.00	1401.00	1491.00
UNIT 40 MAKING VARIOUS DIES						
INTD 40010	DIE MAKING 1	1.00	24	15.00	233.50	248.50
INTD 40020	DIE MAKING 2	2.00	48	30.00	467.00	497.00
INTD 40030	DIE MAKING 3	3.00	72	45.00	700.50	745.50
	UNIT TOTAL	6.00	144	90.00	1401.00	1491.00
UNIT 45 MOLD DESIGN						
INTD 45010	MOLD DESIGN 1	1.00	24	5.00	233.50	238.50
INTD 45020	MOLD DESIGN 2	2.00	48	10.00	467.00	477.00
INTD 45030	MOLD DESIGN 3	3.00	72	15.00	700.50	715.50
	UNIT TOTAL	6.00	144	30.00	1401.00	1431.00
UNIT 50 MOLD MAKING						
INTD 50010	MOLD MAKING 1	1.00	24	15.00	233.50	248.50
INTD 50020	MOLD MAKING 2	2.00	48	30.00	467.00	497.00
INTD 50030	MOLD MAKING 3	3.00	72	45.00	700.50	745.50
	UNIT TOTAL	6.00	144	90.00	1401.00	1491.00
PROGRAM TOTAL		51.00	1226	525.00	11,908.50	12,433.50

INDUSTRIAL WELDING

PROGRAM INFORMATION

Certificate 25 Credits Associate in Applied Science Degree 60 Credits

Students enrolled in a Industrial Welding program at the RMTc will learn about gasses 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, pipe welding, and welding fabrication.



Steve Casselman, Instructor
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Email: casselmans@kellogg.edu



Bob Day, Instructional Assistant
Phone: 269.565.7873
Email: dayr@kellogg.edu

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
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ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

INWE C910	WELDING ORIENTATION		2	0.00	0.00	0.00
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The orientation must be completed at the RMTc in Battle Creek prior to registration.
Please call 269.965.4137 to verify available orientation times.

UNIT 05		BASICS OF WELDING				
INWE 05010	WELDING SHOP SAFETY RULES	0.17	4	4.00	39.70	43.70
INWE 05020	JOINTS WELDS POSITIONS	0.13	3	9.00	30.36	39.36
INWE 05030	RULES AND SQUARES	0.13	3	9.00	30.36	39.36
	UNIT TOTAL	0.43	10	22.00	100.42	122.42

UNIT 10		OXYACETYLENE WELDING				
INWE 10010	OXY-FUEL WELDING TERMS	0.17	4	9.00	39.70	48.70
INWE 10020	SET UP OXY-FUEL WELD STAT	0.08	2	9.00	18.68	27.68
INWE 10030	RUN BEADS W/WO FILL	0.29	7	28.00	67.72	95.72
INWE 10040	WELD JOINTS FLAT POSITION	1.00	24	45.00	233.50	278.50
	UNIT TOTAL	1.54	37	91.00	359.60	450.60

UNIT 15		CUTTING PROCESSES				
INWE 15010	BASIC CUTTING PRACTICES	0.13	3	9.00	30.36	39.36
INWE 15020	CUT FERROUS MET W OXY FUEL	0.33	8	31.00	77.06	108.06
INWE 15030	CUTTING METALS W PLASMA	0.33	8	33.00	77.06	110.06
	UNIT TOTAL	0.79	19	73.00	184.48	257.48

UNIT 20		BRAZING AND SOLDERING				
INWE 20010	BRAZ JOINTS FLAT POSITION	0.33	8	41.00	77.06	118.06
INWE 20020	BRAZ V-GROOVE JOINTS	0.21	5	34.00	49.04	83.04
INWE 20030	SILVER BRAZ DISSIMILAR METALS	0.13	3	35.00	30.36	65.36
INWE 20040	LEAD SOLDERING SEAMS	0.25	6	35.00	58.38	93.38
	UNIT TOTAL	0.92	22	145.00	214.84	359.84

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 25 SHIELDED METAL ARC WELDING						
INWE 25010	SMAW TERMS DEFINITIONS	0.17	4	9.00	39.70	48.70
INWE 25020	ELECTRODES FOR SMAW	0.21	5	14.00	49.04	63.04
INWE 25030	STRIKE ARC RUN BEADS	0.67	16	45.00	156.45	201.45
INWE 25040	ANALYZE WELD CHARACTERISTICS	0.13	3	9.00	30.36	39.36
INWE 25050	MULTIPASS FILLET WELDS	0.50	12	45.00	116.75	161.75
INWE 25060	WELD SIZE WEAVE TECHNIQUE	0.50	12	29.00	116.75	145.75
INWE 25070	CORNER JOINT FLAT POSITION	0.67	16	29.00	156.45	185.45
INWE 25080	V-GROOVE BUTT W BACKING	0.50	12	64.00	116.75	180.75
INWE 25090	V-GROOVE BUTT WO BACKING	0.67	16	63.00	156.45	219.45
	UNIT TOTAL	4.02	96	307.00	938.70	1,245.70
UNIT 30 ADVANCED ARC WELDING						
INWE 30010	TEE JOINTS VERTICAL UP	0.58	14	45.00	135.43	180.43
INWE 30020	BUTT W BACK VERTICAL UP	0.46	11	64.00	107.41	171.41
INWE 30030	BUTT WO BACK VERTICAL UP	0.75	18	63.00	175.13	238.13
INWE 30040	TEE JOINTS VERTICAL DOWN	0.29	7	29.00	67.72	96.72
INWE 30050	BUTT W BACK VERTICAL DOWN	0.42	10	64.00	98.07	162.07
INWE 30060	BUT WO BACK VERTICAL DOWN	0.33	8	63.00	77.06	140.06
INWE 30070	BUTT W BACK HORIZONTAL	0.50	12	64.00	116.75	180.75
INWE 30080	BUTT WO BACK HORIZONTAL	0.50	12	63.00	116.75	179.75
INWE 30090	TEE JOINTS OVERHEAD	0.50	12	29.00	116.75	145.75
INWE 30100	BUTT W BACK OVERHEAD	0.58	14	64.00	135.43	199.43
INWE 30110	BUTT WO BACK OVERHEAD	0.83	20	63.00	193.81	256.81
	UNIT TOTAL	5.74	138	611.00	1,340.31	1,951.31
*INWE C410	SMAW CERTIFICATION		6	200.00	0.00	200.00
UNIT 35 WELDING METALLURGY						
INWE 35010	INTRO TO METALLURGY	0.46	11	9.00	107.41	116.41
INWE 35020	EXAMINE IDENTIFY METALS	0.13	3	14.00	30.36	44.36
INWE 35030	METALLURGY FUND CAST IRON	0.13	3	9.00	30.36	39.36
INWE 35040	METALLURGY FUND STAINLESS	0.13	3	9.00	30.36	39.36
INWE 35050	TESTING METALS	0.42	10	9.00	98.07	107.07
	UNIT TOTAL	1.27	30	50.00	296.56	346.56
UNIT 40 GAS METAL ARC WELDING						
INWE 40010	EXPLAINING GMAW	0.29	7	34.00	67.72	101.72
INWE 40020	START ARC RUN BEADS GMAW	0.17	4	29.00	39.70	68.70
INWE 40030	GMAW FCAW WELD ALL POSITIONS	1.67	40	93.00	389.95	482.95
INWE 40040	GMAW OF ALUMINUM	0.67	16	73.00	156.45	229.45
	UNIT TOTAL	2.80	67	229.00	653.82	882.82
*INWE C420	GMAW CERTIFICATION		6	210.00	0.00	210.00

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 45	GAS TUNGSTEN ARC WELDING					
INWE 45010	EXPLAINING GTAW	0.42	10	30.00	98.07	128.07
INWE 45020	START ARC RUN BEADS GTAW	0.42	10	29.00	98.07	127.07
INWE 45030	GTAW ALUMINUM FLAT POSITION	1.25	30	73.00	291.88	364.88
INWE 45040	BASIC JOINTS STAINLESS	1.25	30	57.00	291.88	348.88
INWE 45050	GTAW ALUMINUM OUT POSITION	1.67	40	83.00	389.95	472.95
	UNIT TOTAL	5.01	120	272.00	1,169.85	1,441.85
*INWE C430	GTAW CERTIFICATION		8	195.00	0.00	195.00
UNIT 50	PIPE WELDING					
INWE 50010	IDENTIFYING PIPE WELDING	0.21	5	14.00	49.04	63.04
INWE 50020	2G FIXED POSITION	0.83	20	71.00	193.81	264.81
INWE 50030	5G FIXED VERTICAL UP	1.25	30	66.00	291.88	357.88
INWE 50040	5G FIXED VERTICAL DOWN	1.04	25	71.00	242.84	313.84
INWE 50050	6G FIXED POSITION	1.04	25	73.00	242.84	315.84
	UNIT TOTAL	4.37	105	295.00	1,020.41	1,315.41
*INWE C440	PIPE WELDING CERTIFICATION		12	345.00	0.00	345.00
UNIT 55	SPECIAL APPLICATIONS					
INWE 55010	WELDING BLUEPRINT READING	0.17	4	9.00	39.70	48.70
INWE 55020	FABRICATING A PROJECT	0.50	12	60.00	116.75	176.75
INWE 55030	CAST IRON REPAIR	0.17	4	28.00	39.70	67.70
INWE 55040	HARDSURFACING	0.17	4	28.00	39.70	67.70
INWE 55050	TOOL AND DIE WELDING	0.67	16	53.00	156.45	209.45
	UNIT TOTAL	1.68	40	178.00	392.30	570.30
PROGRAM TOTAL		28.57	718	3,223.00	6,671.29	9,894.29

SPECIAL PROJECT MODULES

(These modules **cannot be articulated**. Students must have instructor approval to register.)

*INWE C710	BASIC WELDING PROJECT		2	70.00	0.00	70.00
*INWE C720	INTERMEDIATE WELDING PROJECT		4	140.00	0.00	140.00
*INWE C730	ADVANCED WELDING PROJECT		6	210.00	0.00	210.00

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

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

For more information including the open lab schedules please contact the RMTCC at 269.965.4137

Earn college credit towards a certificate or degree in industrial trades while you are still in high school through your 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
www.calhounisd.org/cacc

Branch Area Careers Center

366 Morse Street
Coldwater, MI 49036
517.279.5721
www.branch-isd.org
and click on BACC



MODULES OFFERED AT THE BRANCH AREA CAREERS CENTER

INDUSTRIAL ELECTRICITY AND ELECTRONICS

ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INEL C910	ELECTRIC ELECTRONICS ORIENTATION The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.		2	0.00	0.00	0.00
UNIT 05	ELECTRICAL SAFETY					
INEL 05010-60	ELECTRICAL SAFETY	0.17	4	3.00	39.70	42.70
	UNIT TOTAL	0.17	4	3.00	39.70	42.70
UNIT 10	MATHEMATICS FOR ELECTRICIANS					
INEL 10010-60	ELECTRICAL MATH 1	0.08	2	13.00	18.68	31.68
INEL 10020-60	ELECTRICAL MATH 2	0.25	6	3.00	58.38	61.38
INEL 10030-60	ELECTRICAL MATH 3	0.25	6	3.00	58.38	61.38
	UNIT TOTAL	0.58	14	19.00	135.44	154.44
UNIT 15	ELECTRICAL THEORY					
INEL 15010-60	ELECTRICAL THEORY	0.25	6	23.00	58.38	81.38
INEL 15020-60	STATIC ELECTRICITY	0.25	6	23.00	58.38	81.38
INEL 15030-60	CALCULATORS AND ELECTRONICS	0.25	6	23.00	58.38	81.38
INEL 15040-60	DEVICES AND SYMBOLS	0.25	6	23.00	58.38	81.38
INEL 15050-60	MULTIMETER	0.33	8	23.00	77.06	100.06
INEL 15060-60	OHM'S LAW	0.33	8	23.00	77.06	100.06
INEL 15070-60	SERIES CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15080-60	PARALLEL CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15090-60	COMBINATION CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15100-60	MAGNETISM	0.25	6	23.00	58.38	81.38
INEL 15110-60	ALTERNATING CURRENT	0.25	6	23.00	58.38	81.38
INEL 15120-60	OSCILLOSCOPE	0.33	8	23.00	77.06	100.06
INEL 15130-60	INDUCTANCE	0.42	10	23.00	98.07	121.07
INEL 15140-60	CAPACITANCE	0.42	10	23.00	98.07	121.07
INEL 15150-60	RLC CIRCUITS	0.33	8	23.00	77.06	100.06
INEL 15160-60	CONDUCTION	0.33	8	23.00	77.06	100.06
INEL 15170-60	THEORY OVERVIEW	0.21	5	23.00	49.04	72.04
	UNIT TOTAL	5.19	125	391.00	1211.94	1602.94
UNIT 20	ELECTRICAL MOTOR CONTROLS 1					
INEL 20010-60	ELECTRICAL MOTOR CONTROLS	0.42	10	23.00	98.07	121.07
INEL 20020-60	MANUAL MOTOR CONTROLS	0.50	12	23.00	116.75	139.75
INEL 20030-60	CONTROL TRANSFORMERS	0.42	10	23.00	98.07	121.07
INEL 20040-60	CONTROL LADDER LOGIC	0.67	16	23.00	156.45	179.45
INEL 20050-60	CONTROL RELAYS MOTOR STARTERS	0.50	12	23.00	116.75	139.75
INEL 20060-60	INTRODUCTION TROUBLESHOOTING	0.33	8	23.00	77.06	100.06
INEL 20070-60	SYSTEMS TROUBLESHOOTING	0.42	10	23.00	98.07	121.07
INEL 20080-60	AUTOMATIC INPUT DEVICES	0.42	10	23.00	98.07	121.07
INEL 20090-60	ELECTRONIC SENSORS	0.33	8	23.00	77.06	100.06
INEL 20100-60	BASIC TIMER CONTROL	0.33	8	23.00	77.06	100.06

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 20 ELECTRICAL MOTOR CONTROLS 1 (CONTINUED)						
INEL 20110-60	TIMES AND COUNTERS	0.25	6	23.00	58.38	81.38
	UNIT TOTAL	4.59	110	253.00	1,071.79	1,324.79
UNIT 35 NATIONAL ELECTRICAL CODE (NEC)						
INEL 35010-60	GENERAL WIRING FUNDAMENTALS	0.25	6	17.00	58.38	75.38
INEL 35020-60	WIRE RACEWAY AND BOX SIZING	0.33	8	17.00	77.06	94.06
INEL 35030-60	BRANCH CIRCUITS	0.33	8	17.00	77.06	94.06
INEL 35040-60	SERVICE FEEDER CALCULATIONS	0.25	6	17.00	58.38	75.38
INEL 35050-60	GROUNDING AND BONDING	0.33	8	17.00	77.06	94.06
INEL 35060-60	OVERCURRENT PROTECTION	0.33	8	17.00	77.06	94.06
INEL 35070-60	MOTOR CIRCUIT WIRING	0.25	6	17.00	58.38	75.38
INEL 35080-60	TRANSFORMERS	0.25	6	17.00	58.38	75.38
INEL 35090-60	GENERAL HAZARDOUS LOCATIONS	0.25	6	17.00	58.38	75.38
INEL 35100-60	HEALTH CARE FACILITIES	0.25	6	17.00	58.38	75.38
INEL 35110-60	EMERGENCY POWER SYSTEMS	0.33	8	17.00	77.06	94.06
INEL 35120-60	INDUSTRIAL APPLICATIONS	0.33	8	17.00	77.06	94.06
INEL 35130-60	SPECIAL APPLICATION WIRING	0.25	6	17.00	58.38	75.38
INEL 35140-60	NEC REVIEW	0.17	4	17.00	39.70	56.70
	UNIT TOTAL	3.90	94	258.00	910.72	1,148.72
UNIT 40 POWER DISTRIBUTION SYSTEMS						
INEL 40010-60	POWER GENERATION DISTRIBUTION	0.33	8	39.00	77.06	116.06
INEL 40020-60	ELECTRICAL WIRING TECHNIQUES	0.33	8	39.00	77.06	116.06
INEL 40030-60	WIRING SYSTEM INSTALLATION	0.33	10	39.00	98.07	137.07
INEL 40040-60	INTRODUCTION TO RACEWAYS	0.33	10	39.00	98.07	137.07
INEL 40050-60	BASIC CONDUIT BENDING	0.25	6	39.00	58.38	97.38
INEL 40060-60	ADVANCED RACEWAYS	0.25	6	39.00	58.38	97.38
INEL 40070-60	CONDUCTOR OVER CURRENT PROTECT	0.25	6	39.00	58.38	97.38
INEL 40080-60	CONDUIT SIZING WIRE PULLING	0.33	8	39.00	77.06	116.06
	UNIT TOTAL	2.58	62	312.00	602.46	914.46
UNIT 45 FACILITY MAINTENANCE						
INEL 45010-60	PLANS AND SITE WORK	0.25	6	30.00	58.38	88.38
INEL 45020-60	INDUSTRIAL POWER SYSTEMS	0.42	10	30.00	98.07	128.07
INEL 45030-60	SIGNALING SYSTEMS	0.25	6	30.00	58.38	88.38
INEL 45040-60	MOTORS CONTROLLERS INSTALLATIO	0.33	8	30.00	77.06	107.06
INEL 45050-60	SPECIAL EQUIPMENT & HVAC	0.33	8	30.00	77.06	107.06
INEL 45060-60	INDUSTRIAL HAZARDOUS LOCATIONS	0.25	6	30.00	58.38	88.38
INEL 45070-60	SINGLE PHASE TRANSFORMERS	0.33	8	30.00	77.06	107.06
INEL 45080-60	3 PHASE TRANSFORMERS	0.50	12	30.00	116.75	146.75
INEL 45090-60	NEC TRANSFORMER REQUIREMENTS	0.25	6	30.00	58.38	88.38
INEL 45100-60	EMERGENCY ELECTRICAL SYSTEMS	0.25	6	30.00	58.38	88.38
INEL 45110-60	CLASS B FIRE ALARM SYSTEMS	0.33	8	30.00	77.06	107.06
INEL 45115-60	ADVANCED FIRE ALARM SYSTEMS	0.42	10	15.00	98.07	113.07
	UNIT TOTAL	3.91	94	345.00	913.03	1,258.03
UNIT 50 ELECTRICAL CONTROL WIRING						
INEL 50010-60	ELECTRICAL CONTROL WIRING	0.42	10	65.00	98.07	163.07
INEL 50020-60	ELECTRICAL CONTROL SYSTEMS	1.00	24	75.00	233.50	308.50
	UNIT TOTAL	1.42	34	140.00	331.57	471.57

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 55	INDUSTRIAL ELECTRONICS					
INEL 55010-60	USING THE OSCILLOSCOPE	0.67	16	21.00	156.45	177.45
INEL 55020-60	METERS FOR ELECTRONICS	0.33	8	21.00	77.06	98.06
INEL 55030-60	ELECTRONIC SOLDERING	0.25	6	21.00	58.38	79.38
INEL 55040-60	SOLDERING PRINTED CIRCUIT BOAR	0.25	6	21.00	58.38	79.38
INEL 55050-60	DIODES	0.25	6	21.00	58.38	79.38
INEL 55060-60	POWER SUPPLIES	0.50	12	21.00	116.75	137.75
INEL 55070-60	PHOTO DEVICES	0.33	8	21.00	77.06	98.06
INEL 55080-60	SOLID STATE DEVICES	0.83	20	21.00	193.81	214.81
INEL 55090-60	ELECTRONIC TIMING	0.33	8	21.00	77.06	98.06
INEL 55100-60	AMPLIFIERS	0.83	20	21.00	193.81	214.81
INEL 55110-60	DIGITAL LOGIC FUNDAMENTALS	0.50	12	21.00	116.75	137.75
INEL 55120-60	DIGITAL LOGIC APPLICATIONS	0.42	10	21.00	98.07	119.07
INEL 55130-60	PROXIMITY SWITCHING	0.17	4	21.00	39.70	60.70
INEL 55140-60	PHOTOELECTRIC DEVICES	0.17	4	21.00	39.70	60.70
INEL 55150-60	FIBER OPTIC FUNDAMENTALS	0.33	8	21.00	77.06	98.06
INEL 55160-60	FIBER OPTIC LAB	0.25	6	21.00	58.38	79.38
	UNIT TOTAL	6.41	154	336.00	1,496.80	1,832.80
UNIT 60	PROGRAM LOGIC CONTROLLERS 1					
INEL 60010-60	INTRO PROGRAMMABLE CONTROLLERS	0.25	6	25.00	58.38	83.38
INEL 60020-60	BASIC PLC PROGRAMMING	0.50	12	25.00	116.75	141.75
INEL 60030-60	PLC MOTOR CONTROL	0.50	12	25.00	116.75	141.75
INEL 60040-60	DISCRETE I/O INTERFACING	0.33	8	25.00	77.06	102.06
INEL 60050-60	INTRO TO PLC TROUBLESHOOTING	0.33	8	25.00	77.06	102.06
INEL 60060-60	PLC SYSTEMS TROUBLESHOOTING	0.33	8	25.00	77.06	102.06
	UNIT TOTAL	2.24	54	150.00	523.06	673.06
UNIT 65	PROGRAM LOGIC CONTROLLERS 2					
INEL 65010-60	EVENT SEQUENCING	0.33	8	25.00	77.06	102.06
INEL 65020-60	APPLICATION DEVELOPMENT	0.50	12	25.00	116.75	141.75
INEL 65030-60	PLC TIMER INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65040-60	PLC COUNTER INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65050-60	PROGRAM CONTROL INSTRUCTIONS	0.50	12	25.00	116.75	141.75
INEL 65060-60	MATH DATA MOVE INSTRUCTIONS	0.58	14	25.00	135.43	160.43
	UNIT TOTAL	2.9	70	150.00	679.49	829.49
UNIT 67	SIEMENS S7-300 PLCS					
INEL 67010-60	SIEMENS 300 INTRO TO PLCS	0.50	12	17.00	116.75	133.75
INEL 67020-60	SIEMENS 300 BASIC PLC PROGRAM	0.50	12	17.00	116.75	133.75
INEL 67030-60	SIEMENS 300 PLC MOTOR CONTROL	0.50	12	17.00	116.75	133.75
INEL 67040-60	SIEMENS 300 IO INTERFACING	0.50	12	5.00	116.75	121.75
INEL 67050-60	SIEMENS 300 PLC TIMERS	0.50	12	5.00	116.75	121.75
INEL 67060-60	SIEMENS 300 PLC COUNTERS	0.50	12	5.00	116.75	121.75
	UNIT TOTAL	3.00	72	66.00	700.50	766.50
*PROGRAM TOTAL		36.90	889	2403.00	8,616.50	11,019.50

No Summer Semester at the Branch Area Careers Center location.

*Please note: Kellogg Community College offers additional Industrial Electricity/Electronics courses at the Regional Manufacturing Technology Center in Battle Creek.

MODULES OFFERED AT THE BRANCH AREA CAREERS CENTER

INDUSTRIAL TECHNOLOGY

ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INT C910	IND TECHNOLOGY ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTc in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					
UNIT 10 APPLIED SCIENCE AND MATERIALS						
INT 10010-60	PRINCIPLES OF FERROUS METALS	0.63	15	113.00	147.11	260.11
INT 10020-60	PRINCIPLES NON FERROUS METALS	0.63	15	83.00	147.11	230.11
INT 10060-60	STATICS AND DATA ACQUISITION	0.42	10	20.00	98.07	118.07
INT 10070-60	THERMODYN ENERGY HEAT TRANSFER	1.00	24	36.00	233.50	269.50
INT 10080-60	DYNAMICS FORCE AND MOTION	1.13	27	101.00	263.86	364.86
INT 10090-60	FLUIDS	0.33	8	10.00	77.06	87.06
	UNIT TOTAL	4.14	99	363.00	966.71	1,329.71
UNIT 15 PRODUCT DESIGN ELEMENTS						
INT 15030-60	ELECTRICAL PRINTS	0.29	7	77.00	67.72	144.72
INT 15040-60	HYDRAULIC PNEUMATIC PRINT	0.29	7	17.00	67.72	84.72
INT 15050-60	WELDING PRINTS	0.08	2	17.00	18.68	35.68
INT 15060-60	PIPING PLUMBING PRINTS	0.21	5	17.00	49.04	66.04
	UNIT TOTAL	0.87	21	128.00	203.16	331.16
UNIT 30 ELECTRO-MECHANICAL DEVICES, EQUIPMENT, AND SAFETY						
INT 30010-60	MANUFACTURING SAFETY	1.00	24	43.00	233.50	276.50
INT 30020-60	OSHA 10	0.92	22	31.00	214.82	245.82
INT 30040-60	ARC FLASH LOCKOUT TAGOUT	0.29	7	48.00	67.72	115.72
INT 30050-60	ELECTROMECHANICAL DEVICE EQUIP	1.08	26	88.00	252.18	340.18
INT 30060-60	INTRO TO POWER TRANSMISSIONS	0.13	3	6.00	30.36	36.36
INT 30090-60	FLAT BELT DRIVES	0.25	6	10.00	58.38	68.38
INT 30100-60	V BELT DRIVES	0.25	6	11.00	58.38	69.38
INT 30110-60	CHAIN DRIVES	0.25	6	13.00	58.38	71.38
INT 30140-60	LUBRICANTS AND LUBRICATION	0.17	4	6.00	39.70	45.70
INT 30150-60	ADDITIVES LUB ACT BEARING LUB	0.08	2	3.00	18.68	21.68
INT 30160-60	OILS AND THEIR APPLICATIONS	0.08	2	3.00	18.68	21.68
INT 30170-60	GENERAL SPECIAL PURPOSE GREASE	0.17	4	3.00	39.70	42.70
INT 30190-60	LUBRICATING SYSTEMS METHODS	0.13	3	3.00	30.36	33.36
INT 30200-60	LUBRICANT STORAGE AND HANDLING	0.08	2	3.00	18.68	21.68
INT 30260-60	RIGGING SAFETY WEIGHT ESTIMATE	0.13	3	17.00	30.36	47.36
INT 30270-60	RIGGING SAFETY WIRE ROPE SLING	0.13	3	17.00	30.36	47.36
INT 30280-60	RIG SAFETY FIBER ROPE SLINGS	0.38	9	17.00	88.73	105.73
INT 30290-60	RIGGING SAFETY CHAIN SLINGS	0.08	2	17.00	18.68	35.68
INT 30300-60	RIGGING SAFETY HOISTS CRANES	0.21	5	17.00	49.04	66.04
INT 30310-60	RIGGING SAFETY HAND SIGNALS	0.13	3	17.00	30.36	47.36
INT 30320-60	HAND AND POWER TOOLS	0.67	16	26.00	156.45	182.45
	UNIT TOTAL	6.61	158	399.00	1,543.50	1,942.50

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 40 MAINTENANCE SYSTEMS DESIGN AND DEVELOPMENT						
INT 40010-60	PRODUCTION PRODUCT HANDLING	0.58	14	113.00	135.43	248.43
INT 40020-60	IND MAINTENANCE TROUBLESHOOTIN	0.92	22	138.00	214.82	352.82
INT 40030-60	PREVENTIVE PREDICTIVE MAINTEN	1.25	30	46.00	291.88	337.88
UNIT TOTAL		2.75	66	297.00	642.13	939.13
UNIT 45 QUALITY AND LEAN MANUFACTURING						
INT 45030-60	QUALITY SYSTEMS LEAN MFG	0.67	16	123.00	156.45	279.45
INT 45040-60	5S SYSTEM	0.33	8	73.00	77.06	150.06
INT 45050-60	TPM POKA YOKE AND LEAN THEORY	0.45	11	93.00	105.08	198.08
INT 45060-60	LEAN VISUAL WORKPLACE KAIZEN	0.29	7	43.00	67.72	110.72
INT 45070-60	VALUE STREAM MAPPING SETUP RED	0.38	9	73.00	88.73	161.73
UNIT TOTAL		2.12	51	405.00	495.04	900.04
*PROGRAM TOTAL		16.49	395	1,592.00	3,850.54	5,442.54

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

No Summer Semester at the Branch Area Careers Center location.

BRANCH AREA CAREERS CENTER

MODULES OFFERED AT THE BRANCH AREA CAREERS CENTER

INDUSTRIAL MACHINING TECHNOLOGY

ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INMT C910	MACHINING TECH ORIENTATION		2	0.00	0.00	0.00
	The orientation must be completed at the RMTC in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.					
UNIT 05	MACHINE TOOL BASICS					
INMT 05010-60	MACHINERY'S HANDBOOK	0.17	4	18.00	39.70	57.70
	UNIT TOTAL	0.17	4	18.00	39.70	57.70
UNIT 10	MACHINE TOOL SAFETY					
INMT 10010-60	MACHINE TOOL SAFETY	0.17	4	30.00	39.70	69.70
	UNIT TOTAL	0.17	4	30.00	39.70	69.70
UNIT 15	BLUEPRINT READING					
INMT 15010-60	MACHINE TOOL BLUEPRINT READ	0.83	20	47.00	193.81	240.81
INMT 15020-60	GEOMETRIC DIMENSION TOLERANCE	0.33	8	44.00	77.06	121.06
	UNIT TOTAL	1.16	28	91.00	270.87	361.87
UNIT 20	FUNDAMENTAL SKILLS					
INMT 20010-60	BASIC SHOP MATH	0.67	16	47.00	156.45	203.45
INMT 20020-60	MACHINE TOOL MATH	0.75	18	56.00	175.13	231.13
INMT 20030-60	MACHINIST SCALE	0.08	2	23.00	18.68	41.68
INMT 20040-60	DIVIDERS	0.08	2	16.00	18.68	34.68
INMT 20050-60	SPRING CALIPERS	0.08	2	18.00	18.68	36.68
INMT 20060-60	COMBINATION SQUARE	0.08	2	24.00	18.68	42.68
INMT 20070-60	HERMAPHRODITE CALIPERS	0.08	2	18.00	18.68	36.68
INMT 20080-60	SURFACE GAGE	0.08	2	18.00	18.68	36.68
INMT 20090-60	IDENTIFY SURFACE FINISHES	0.08	2	13.00	18.68	31.68
	UNIT TOTAL	1.98	48	233.00	462.34	695.34
UNIT 25	PRECISION MEASUREMENT					
INMT 25010-60	MICROMETER	0.13	3	17.00	30.36	47.36
INMT 25020-60	CALIPER DIGITAL VERN DIAL	0.17	4	12.00	39.70	51.70
INMT 25030-60	TELESCOPING GAGES	0.13	3	14.00	30.36	44.36
INMT 25040-60	DEPTH MICROMETER	0.13	3	10.00	30.36	40.36
INMT 25050-60	DIAL INDICATORS	0.13	3	12.00	30.36	42.36
INMT 25060-60	GAGE BLOCKS	0.13	3	21.00	30.36	51.36
INMT 25070-60	MACHINE SHOP TRIGONOMETRY	0.67	16	35.00	156.45	191.45
INMT 25080-60	HEIGHT GAGE	0.17	4	10.00	39.70	49.70
INMT 25090-60	SINE BAR	0.17	4	12.00	39.70	51.70
INMT 25100-60	CMM FUNDAMENTALS	0.25	6	22.00	58.38	80.38
INMT 25110-60	CMM PART INSPECTION	0.67	16	27.00	156.45	183.45
	UNIT TOTAL	2.75	65	192.00	642.18	834.18

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 30	DRILL PRESS AND BAND SAW					
INMT 30010-60	SHOP MATH SPEEDS AND FEEDS	0.21	5	35.00	49.04	84.04
INMT 30020-60	SHARPENING DRILL BITS	0.25	6	15.00	58.38	73.38
INMT 30030-60	DRILLING ON THE DRILL PRESS	0.17	4	14.00	39.70	53.70
INMT 30040-60	REAMING ON THE DRILL PRESS	0.13	3	11.00	30.36	41.36
INMT 30050-60	COUNTERBORE SPOTFACE COUNTERSI	0.21	5	11.00	49.04	60.04
INMT 30060-60	HAND TAP ON THE DRILL PRESS	0.21	5	14.00	49.04	63.04
INMT 30070-60	POWER TAP ON THE DRILL PRESS	0.25	6	11.00	58.38	69.38
INMT 30080-60	DRILL PRESS PROJECT	0.58	14	35.00	135.43	170.43
INMT 30090-60	BAND SAW BLADE WELDING	0.25	6	31.00	58.38	89.38
INMT 30100-60	VERTICAL BAND SAW PROJECT	0.25	6	21.00	58.38	79.38
	UNIT TOTAL	2.51	60	198.00	586.13	784.13
UNIT 35	TURNING ON LATHE					
INMT 35010-60	MAINTAINING THE LATHE	0.17	4	18.00	39.70	57.70
INMT 35020-60	GRINDING LATHE TOOLS	0.25	6	32.00	58.38	90.38
INMT 35030-60	FACING ON THE LATHE	0.21	5	23.00	49.04	72.04
INMT 35040-60	ALIGNING LATHE CENTERS	0.17	4	18.00	39.70	57.70
INMT 35050-60	PARALLEL TURNING ON THE LATHE	0.21	5	17.00	49.04	66.04
INMT 35060-60	GROOVE AND PART ON THE LATHE	0.13	3	16.00	30.36	46.36
INMT 35070-60	CUT RADII AND EXTERNAL TAPERS	0.50	12	14.00	116.75	130.75
INMT 35080-60	KNURLING ON THE LATHE	0.13	3	12.00	30.36	42.36
INMT 35090-60	BORING INTERNAL TAPERS	0.67	16	15.00	156.45	171.45
INMT 35100-60	CUTTING EXTERNAL THREADS	0.50	12	29.00	116.75	145.75
INMT 35110-60	CUTTING INTERNAL THREADS	0.42	10	14.00	98.07	112.07
INMT 35120-60	LATHE PROJECT	1.25	30	32.00	291.88	323.88
	UNIT TOTAL	4.61	110	240.00	1,076.48	1,316.48
UNIT 40	ELECTRONIC DISCHARGE MACHINING					
INMT 40010-60	EDM FUNDAMENTALS	0.29	7	16.00	67.72	83.72
INMT 40020-60	EDM PROJECT	0.50	12	22.00	116.75	138.75
	UNIT TOTAL	0.79	19	38.00	184.47	222.47
UNIT 45	VERTICAL/HORIZONTAL MILLING					
INMT 45010-60	DIAL IN VISE TRAM IN HEAD	0.21	5	18.00	49.04	67.04
INMT 45020-60	FLY CUTTER END MILL SQ BLOCK	0.21	5	19.00	49.04	68.04
INMT 45030-60	TILT HEAD TURN VISE CUT V	0.50	12	20.00	116.75	136.75
INMT 45040-60	DIGITAL READ DRILL TAP REAM	0.25	6	20.00	58.38	78.38
INMT 45050-60	TURNTABLE CUT RADII	0.33	8	20.00	77.06	97.06
INMT 45060-60	HORIZONTAL MILLING SAW SLOT	0.17	4	13.00	39.70	52.70
INMT 45070-60	SINE PLATE CUT ANGLES	0.33	8	17.00	77.06	94.06
INMT 45080-60	BORING HEAD BORE 4 HOLES	0.33	8	21.00	77.06	98.06
INMT 45090-60	INDEXING HEAD TO CUT KEYWAYS	0.17	4	17.00	39.70	56.70
INMT 45100-60	MATH FOR DIVIDING HEAD	0.17	4	11.00	39.70	50.70
INMT 45110-60	DIVIDING HEAD TO CUT GEARS	0.42	10	15.00	98.07	113.07
INMT 45120-60	UNIVERSAL INDEXING HEAD	0.50	12	13.00	116.75	129.75
INMT 45130-60	5C COLLET TO CUT SQUARE HEX	0.33	8	13.00	77.06	90.06
INMT 45140-60	MAKE DOVE TAILS	0.67	16	34.00	156.45	190.45
INMT 45150-60	MILL PROJECT	1.25	30	32.00	291.88	323.88
	UNIT TOTAL	5.84	140	283.00	1,363.70	1,646.70

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 50	SURFACE GRINDING					
INMT 50010-60	SQUARE A BLOCK (6 SIDES)	0.25	6	30.00	58.38	88.38
INMT 50020-60	GRIND ANGLES AND RADII	0.50	12	27.00	116.75	143.75
INMT 50030-60	OPERATE THE AUTOMATIC GRINDER	0.42	10	17.00	98.07	115.07
INMT 50040-60	COMPLETE TWO PROJECTS TO PRINT	1.58	38	21.00	368.93	389.93
	UNIT TOTAL	2.75	66	95.00	642.13	737.13
UNIT 70	MACHINE TOOL PROJECTS					
INMT 70010-60	SINE BAR	0.83	20	22.00	193.81	215.81
INMT 70020-60	PRECISION VISE	2.08	50	32.00	485.68	517.68
INMT 70030-60	1-2-3 BLOCKS	1.00	24	22.00	233.50	255.50
INMT 70040-60	TOOL MAKERS V-BLOCKS	1.67	40	24.00	389.95	413.95
	UNIT TOTAL	5.58	134	100.00	1302.94	1402.94
PROGRAM TOTAL		28.31	680	1,518.00	6,610.64	8,128.64

No Summer Semester at the Branch Area Careers Center location.

*Please note: Kellogg Community College offers additional industrial Machining Technology courses at the Regional Manufacturing Technology Center in Battle Creek.

MODULES OFFERED AT HASTINGS HIGH SCHOOL

INDUSTRIAL WELDING

ALL COSTS ARE SUBJECT TO CHANGE WITHOUT NOTICE. PLEASE CALL 269-965-4137 TO VERIFY.

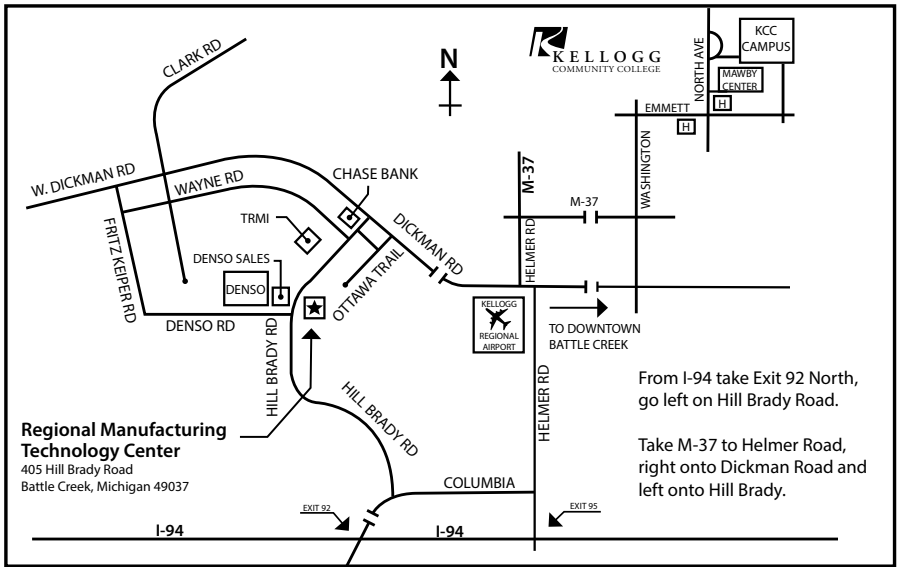
MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
INWE C910	WELDING ORIENTATION The orientation must be completed at the RMTc in Battle Creek prior to registration. Please call 269.965.4137 to verify available orientation times.		2	0.00	0.00	0.00
UNIT 05 BASICS OF WELDING						
INWE 05010-50	WELDING SHOP SAFETY RULES	0.17	4	4.00	39.70	43.70
INWE 05020-50	JOINTS WELDS POSITIONS	0.13	3	9.00	30.36	39.36
INWE 05030-50	RULES AND SQUARES	0.13	3	9.00	30.36	39.36
	UNIT TOTAL	0.43	10	22.00	100.42	122.42
UNIT 10 OXYACETYLENE WELDING						
INWE 10010-50	OXY-FUEL WELDING TERMS	0.17	4	9.00	39.70	48.70
INWE 10020-50	SET UP OXY-FUEL WELD STAT	0.08	2	9.00	18.68	27.68
INWE 10030-50	RUN BEADS W/VO FILL	0.29	7	28.00	67.72	95.72
INWE 10040-50	WELD JOINTS FLAT POSITION	1.00	24	45.00	233.50	278.50
	UNIT TOTAL	1.54	37	91.00	359.60	450.60
UNIT 15 CUTTING PROCESSES						
INWE 15010-50	BASIC CUTTING PRACTICES	0.13	3	9.00	30.36	39.36
INWE 15020-50	CUT FERROUS MET W OXY FUEL	0.33	8	31.00	77.06	108.06
INWE 15030-50	CUTTING METALS W PLASMA	0.33	8	33.00	77.06	110.06
	UNIT TOTAL	0.79	19	73.00	184.48	257.48
UNIT 20 BRAZING AND SOLDERING						
INWE 20010-50	BRAZ JOINTS FLAT POSITION	0.33	8	41.00	77.06	118.06
INWE 20020-50	BRAZ V-GROOVE JOINTS	0.21	5	34.00	49.04	83.04
INWE 20030-50	SILVER BRAZ DISSIMILAR METALS	0.13	3	35.00	30.36	65.36
INWE 20040-50	LEAD SOLDERING SEAMS	0.25	6	35.00	58.38	93.38
	UNIT TOTAL	0.92	22	145.00	214.84	359.84
UNIT 25 SHIELDED METAL ARC WELDING						
INWE 25010-50	SMAW TERMS DEFINITIONS	0.17	4	9.00	39.70	48.70
INWE 25020-50	ELECTRODES FOR SMAW	0.21	5	14.00	49.04	63.04
INWE 25030-50	STRIKE ARC RUN BEADS	0.67	16	45.00	156.45	201.45
INWE 25040-50	ANALYZE WELD CHARACTERISTICS	0.13	3	9.00	30.36	39.36
INWE 25050-50	MULTIPASS FILLET WELDS	0.50	12	45.00	116.75	161.75
INWE 25060-50	WELD SIZE WEAVE TECHNIQUE	0.50	12	29.00	116.75	145.75
INWE 25070-50	CORNER JOINT FLAT POSITION	0.67	16	29.00	156.45	185.45
INWE 25080-50	V-GROOVE BUTT W BACKING	0.50	12	64.00	116.75	180.75
INWE 25090-50	V-GROOVE BUTT WO BACKING	0.67	16	63.00	156.45	219.45
	UNIT TOTAL	4.02	96	307.00	938.70	1,245.70

(CONTINUED)

MODULE SUBJECT CODE AND NUMBER	MODULE TITLE	CREDIT	CONTACT HOURS	LAB FEE	TUITION	TOTAL COST
UNIT 30 ADVANCED ARC WELDING						
INWE 30010-50	TEE JOINTS VERTICAL UP	0.58	14	45.00	135.43	180.43
INWE 30020-50	BUTT W BACK VERTICAL UP	0.46	11	64.00	107.41	171.41
INWE 30030-50	BUTT WO BACK VERTICAL UP	0.75	18	63.00	175.13	238.13
INWE 30040-50	TEE JOINTS VERTICAL DOWN	0.29	7	29.00	67.72	96.72
INWE 30050-50	BUTT W BACK VERTICAL DOWN	0.42	10	64.00	98.07	162.07
INWE 30060-50	BUT WO BACK VERTICAL DOWN	0.33	8	63.00	77.06	140.06
INWE 30070-50	BUTT W BACK HORIZONTAL	0.50	12	64.00	116.75	180.75
INWE 30080-50	BUTT WO BACK HORIZONTAL	0.50	12	63.00	116.75	179.75
INWE 30090-50	TEE JOINTS OVERHEAD	0.50	12	29.00	116.75	145.75
INWE 30100-50	BUTT W BACK OVERHEAD	0.58	14	64.00	135.43	199.43
INWE 30110-50	BUTT WO BACK OVERHEAD	0.83	20	63.00	193.81	256.81
	UNIT TOTAL	5.74	138	611.00	1,340.31	1,951.31
UNIT 35 WELDING METALLURGY						
INWE 35010-50	INTRO TO METALLURGY	0.46	11	9.00	107.41	116.41
INWE 35020-50	EXAMINE IDENTIFY METALS	0.13	3	14.00	30.36	44.36
INWE 35030-50	METALLURGY FUND CAST IRON	0.13	3	9.00	30.36	39.36
INWE 35040-50	METALLURGY FUND STAINLESS	0.13	3	9.00	30.36	39.36
INWE 35050-50	TESTING METALS	0.42	10	9.00	98.07	107.07
	UNIT TOTAL	1.27	30	50.00	296.56	346.56
UNIT 40 GAS METAL ARC WELDING						
INWE 40010-50	EXPLAINING GMAW	0.29	7	34.00	67.72	101.72
INWE 40020-50	START ARC RUN BEADS GMAW	0.17	4	29.00	39.70	68.70
INWE 40030-50	GMAW FCAW WELD ALL POSITIONS	1.67	40	93.00	389.95	482.95
	UNIT TOTAL	2.13	51	156.00	497.37	653.37
UNIT 45 GAS TUNGSTEN ARC WELDING						
INWE 45010-50	EXPLAINING GTAW	0.42	10	30.00	98.07	128.07
INWE 45020-50	START ARC RUN BEADS GTAW	0.42	10	29.00	98.07	127.07
INWE 45030-50	GTAW ALUMINUM FLAT POSITION	1.25	30	73.00	291.88	364.88
INWE 45040-50	BASIC JOINTS STAINLESS	1.25	30	57.00	291.88	348.88
INWE 45050-50	GTAW ALUMINUM OUT POSITION	1.67	40	83.00	389.95	472.95
	UNIT TOTAL	5.01	120	272.00	1,169.85	1,441.85
*PROGRAM TOTAL		21.85	525	1,727.00	5,102.13	6,829.13

No Summer Semester at the Hastings High School location.

*Please note: Kellogg Community College offers additional Industrial Welding courses at the Regional Manufacturing Technology Center in Battle Creek.



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

From I-94 take Exit 92 North, go left on Hill Brady Road.
Take M-37 to Helmer Road, right onto Dickman Road and left onto Hill Brady.

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 mile 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 mile 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 mile on Hill Brady Road to the RMTC on the east/left hand side of the road.

Directions to KCC Battle Creek 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 VanBuren Street (4th signal light). Turn left on VanBuren Street to Capital Avenue (1st

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 4th 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 pond.

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 (3rd signal light). Turn right and continue to North Avenue. Turn left and proceed to College. Circle drive entrance is beyond Spring Lake pond.

Between RMTC and KCC Main 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. KCC Main Campus is on the east/right hand side of North Avenue.

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For more information

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