

KELLOGG COMMUNITY COLLEGE
INDUSTRIAL TECHNOLOGY
COURSE OPTIONS

SPRING 2022

Certificate: 30 credits

Associate in Applied Science: 60 credits (combination of industrial technology, technical electives, and general education credit requirements)

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 Fees | Tuition | Total Cost |
|--|--------------------------------|-------------|---------------|---------------|----------------|----------------|
| <input type="checkbox"/> INT C910-7201 | 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 05 MATHEMATICS | | | | | | |
| <input type="checkbox"/> INT 05010-7201 | PLANE GEOMETRY LINES ANGLES | 0.58 | 14 | 6.00 | 149.64 | 155.64 |
| <input type="checkbox"/> INT 05020-7201 | PLANE GEOMETRY TRIANGLES | 0.42 | 10 | 6.00 | 108.36 | 114.36 |
| <input type="checkbox"/> INT 05030-7201 | PLANE GEOMETRY CIRCLES | 0.42 | 10 | 6.00 | 108.36 | 114.36 |
| <input type="checkbox"/> INT 05040-7201 | PLANE GEOMETRY CONSTRUCT REVIE | 0.38 | 9 | 6.00 | 98.04 | 104.04 |
| <input type="checkbox"/> INT 05050-7201 | GEOMETRIC FIGURES AREAS | 0.58 | 14 | 6.00 | 149.64 | 155.64 |
| <input type="checkbox"/> INT 05060-7201 | GEOMETRIC FIGURES VOLUMES | 0.46 | 11 | 6.00 | 118.68 | 124.68 |
| <input type="checkbox"/> INT 05070-7201 | GEOMETRIC FIGURE AREAS VOLUMES | 0.25 | 6 | 6.00 | 64.50 | 70.50 |
| <input type="checkbox"/> INT 05080-7201 | TRIG FUNCTIONS TRIANGLE CALC | 0.58 | 14 | 6.00 | 149.64 | 155.64 |
| <input type="checkbox"/> INT 05090-7201 | TRIG MACHINE APPLICATIONS | 0.42 | 10 | 6.00 | 108.36 | 114.36 |
| <input type="checkbox"/> INT 05100-7201 | SOLVING OBLIQUE TRIANGLES | 0.50 | 12 | 6.00 | 129.00 | 135.00 |
| <input type="checkbox"/> INT 05110-7201 | TRIG ACHIEVEMENT REVIEW | 0.33 | 8 | 6.00 | 85.14 | 91.14 |
| UNIT TOTAL | | 4.92 | 118 | 66.00 | 1269.36 | 1335.36 |
| UNIT 10 APPLIED SCIENCE AND MATERIALS | | | | | | |
| <input type="checkbox"/> INT 10010-7201 | PRINCIPLES OF FERROUS METALS | 0.63 | 15 | 113.00 | 162.54 | 275.54 |
| <input type="checkbox"/> INT 10020-7201 | PRINCIPLES NON FERROUS METALS | 0.63 | 15 | 83.00 | 162.54 | 245.54 |
| <input type="checkbox"/> INT 10030-7201 | PRINCIPLES OF PLASTICS | 0.42 | 10 | 13.00 | 108.36 | 121.36 |
| <input type="checkbox"/> INT 10040-7201 | PRINCIPLES OF CERAMICS | 0.42 | 10 | 13.00 | 108.36 | 121.36 |
| <input type="checkbox"/> INT 10050-7201 | PRINCIPLES OF COMPOSITES | 0.42 | 10 | 13.00 | 108.36 | 121.36 |
| <input type="checkbox"/> INT 10060-7201 | STATICS AND DATA ACQUISITION | 0.42 | 10 | 20.00 | 108.36 | 128.36 |
| <input type="checkbox"/> INT 10070-7201 | THERMODYN ENERGY HEAT TRANSFER | 1.00 | 24 | 36.00 | 258.00 | 294.00 |
| <input type="checkbox"/> INT 10080-7201 | DYNAMICS FORCE AND MOTION | 1.13 | 27 | 101.00 | 291.54 | 392.54 |
| <input type="checkbox"/> INT 10090-7201 | FLUIDS | 0.33 | 8 | 10.00 | 85.14 | 95.14 |
| UNIT TOTAL | | 5.40 | 129 | 402.00 | 1393.20 | 1795.20 |
| UNIT 15 PRODUCT DESIGN ELEMENTS | | | | | | |
| <input type="checkbox"/> INT 15010-7201 | FUNDAMENTALS OF PRINT READING | 0.92 | 22 | 77.00 | 237.36 | 314.36 |
| <input type="checkbox"/> INT 15020-7201 | MACHINE PRINTS | 0.17 | 4 | 15.00 | 43.86 | 58.86 |
| <input type="checkbox"/> INT 15030-7201 | ELECTRICAL PRINTS | 0.29 | 7 | 77.00 | 74.82 | 151.82 |
| <input type="checkbox"/> INT 15040-7201 | HYDRAULIC PNEUMATIC PRINT | 0.29 | 7 | 17.00 | 74.82 | 91.82 |
| <input type="checkbox"/> INT 15050-7201 | WELDING PRINTS | 0.08 | 2 | 17.00 | 20.64 | 37.64 |
| <input type="checkbox"/> INT 15060-7201 | PIPING PLUMBING PRINTS | 0.21 | 5 | 17.00 | 54.18 | 71.18 |
| <input type="checkbox"/> INT 15070-7201 | AC REFRIGE SHEET METAL PRINT | 0.21 | 5 | 17.00 | 54.18 | 71.18 |
| <input type="checkbox"/> INT 15080-7201 | BUILDING PRINTS | 0.08 | 2 | 15.00 | 20.64 | 35.64 |
| <input type="checkbox"/> INT 15090-7201 | GEOMETRIC DIMENSION TOLERANCE | 0.17 | 4 | 13.00 | 43.86 | 56.86 |
| UNIT TOTAL | | 2.42 | 58 | 265.00 | 624.36 | 889.36 |
| UNIT 20 STANDARDS AND REGULATIONS | | | | | | |
| <input type="checkbox"/> INT 20010-7201 | INTRO MANUFACTURING STANDARDS | 0.13 | 3 | 111.00 | 33.54 | 144.54 |
| <input type="checkbox"/> INT 20020-7201 | OVERVIEW OF STANDARDS DEVELOP | 0.33 | 8 | 3.00 | 85.14 | 88.14 |
| <input type="checkbox"/> INT 20030-7201 | STANDARDS LEGAL ISSUES | 0.13 | 3 | 3.00 | 33.54 | 36.54 |
| <input type="checkbox"/> INT 20040-7201 | GOOD MANUFACTURING PRACTICE | 0.21 | 5 | 103.00 | 54.18 | 157.18 |
| UNIT TOTAL | | 0.80 | 19 | 220.00 | 206.40 | 426.40 |

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| UNIT 25 PROCESS APPLICATIONS AND OPERATIONS | | | | | | |
| <input type="checkbox"/> INT 25010-7201 | MFG PROCESS PRODUCTION BASIC | 0.63 | 15 | 43.00 | 162.54 | 205.54 |
| <input type="checkbox"/> INT 25020-7201 | PRODUCTION MACHINE OPERATIONS | 0.79 | 19 | 93.00 | 203.82 | 296.82 |
| UNIT TOTAL | | 1.42 | 34 | 136.00 | 366.36 | 502.36 |
| UNIT 30 ELECTRO-MECHANICAL DEVICES, EQUIPMENT, AND SAFETY | | | | | | |
| <input type="checkbox"/> INT 30010-7201 | MANUFACTURING SAFETY | 1.00 | 24 | 43.00 | 258.00 | 301.00 |
| <input type="checkbox"/> INT 30020-7201 | OSHA 10 | 0.92 | 22 | 31.00 | 237.36 | 268.36 |
| <input type="checkbox"/> INT 30030-7201 | OSHA 30 | 1.79 | 43 | 196.00 | 461.82 | 657.82 |
| <input type="checkbox"/> INT 30040-7201 | ARC FLASH LOCKOUT TAGOUT | 0.29 | 7 | 48.00 | 74.82 | 122.82 |
| <input type="checkbox"/> INT 30050-7201 | ELECTROMECHANICAL DEVICE EQUIP | 1.08 | 26 | 88.00 | 278.64 | 366.64 |
| <input type="checkbox"/> INT 30060-7201 | INTRO TO POWER TRANSMISSIONS | 0.13 | 3 | 6.00 | 33.54 | 39.54 |
| <input type="checkbox"/> INT 30070-7201 | COUPLINGS | 0.17 | 4 | 11.00 | 43.86 | 54.86 |
| <input type="checkbox"/> INT 30080-7201 | CLUTCHES AND BRAKES | 0.33 | 8 | 10.00 | 85.14 | 95.14 |
| <input type="checkbox"/> INT 30090-7201 | FLAT BELT DRIVES | 0.25 | 6 | 10.00 | 64.50 | 74.50 |
| <input type="checkbox"/> INT 30100-7201 | V BELT DRIVES | 0.25 | 6 | 11.00 | 64.50 | 75.50 |
| <input type="checkbox"/> INT 30110-7201 | CHAIN DRIVES | 0.25 | 6 | 13.00 | 64.50 | 77.50 |
| <input type="checkbox"/> INT 30120-7201 | SPEED REDUCERS | 0.25 | 6 | 10.00 | 64.50 | 74.50 |
| <input type="checkbox"/> INT 30130-7201 | GEARS | 0.25 | 6 | 6.00 | 64.50 | 70.50 |
| <input type="checkbox"/> INT 30140-7201 | LUBRICANTS AND LUBRICATION | 0.17 | 4 | 6.00 | 43.86 | 49.86 |
| <input type="checkbox"/> INT 30150-7201 | ADDITIVES LUB ACT BEARING LUB | 0.08 | 2 | 3.00 | 20.64 | 23.64 |
| <input type="checkbox"/> INT 30160-7201 | OILS AND THEIR APPLICATIONS | 0.08 | 2 | 3.00 | 20.64 | 23.64 |
| <input type="checkbox"/> INT 30170-7201 | GENERAL SPECIAL PURPOSE GREASE | 0.17 | 4 | 3.00 | 43.86 | 46.86 |
| <input type="checkbox"/> INT 30190-7201 | LUBRICATING SYSTEMS METHODS | 0.13 | 3 | 3.00 | 33.54 | 36.54 |
| <input type="checkbox"/> INT 30200-7201 | LUBRICANT STORAGE AND HANDLING | 0.08 | 2 | 3.00 | 20.64 | 23.64 |
| <input type="checkbox"/> INT 30210-7201 | NOMENCLATURE TYPES OF BEARING | 0.17 | 4 | 6.00 | 43.86 | 49.86 |
| <input type="checkbox"/> INT 30220-7201 | HANDLING AND STORING BEARINGS | 0.08 | 2 | 3.00 | 20.64 | 23.64 |
| <input type="checkbox"/> INT 30230-7201 | BEARING INSTALLATION REMOVAL | 0.50 | 12 | 8.00 | 129.00 | 137.00 |
| <input type="checkbox"/> INT 30240-7201 | BEARING LUBRICATION AND SEALS | 0.25 | 6 | 8.00 | 64.50 | 72.50 |
| <input type="checkbox"/> INT 30250-7201 | TROUBLESHOOT BEARING FAILURE | 0.21 | 5 | 8.00 | 54.18 | 62.18 |
| <input type="checkbox"/> INT 30260-7201 | RIGGING SAFETY WEIGHT ESTIMATE | 0.13 | 3 | 17.00 | 33.54 | 50.54 |
| <input type="checkbox"/> INT 30270-7201 | RIGGING SAFETY WIRE ROPE SLING | 0.13 | 3 | 17.00 | 33.54 | 50.54 |
| <input type="checkbox"/> INT 30280-7201 | RIG SAFETY FIBER ROPE SLINGS | 0.38 | 9 | 17.00 | 98.04 | 115.04 |
| <input type="checkbox"/> INT 30290-7201 | RIGGING SAFETY CHAIN SLINGS | 0.08 | 2 | 17.00 | 20.64 | 37.64 |
| <input type="checkbox"/> INT 30300-7201 | RIGGING SAFETY HOISTS CRANES | 0.21 | 5 | 17.00 | 54.18 | 71.18 |
| <input type="checkbox"/> INT 30310-7201 | RIGGING SAFETY HAND SIGNALS | 0.13 | 3 | 17.00 | 33.54 | 50.54 |
| <input type="checkbox"/> INT 30320-7201 | HAND AND POWER TOOLS | 0.67 | 16 | 26.00 | 172.86 | 198.86 |
| <input type="checkbox"/> INT 30330-7201 | FORKLIFT SAFETY | 0.17 | 4 | 33.00 | 43.86 | 76.86 |
| UNIT TOTAL | | 10.78 | 258 | 698.00 | 2781.24 | 3479.24 |
| UNIT 35 PROGRAMMING AND CONTROLS | | | | | | |
| <input type="checkbox"/> INT 35010-7201 | INTRODUCTION TO ROBOTICS | 0.67 | 16 | 29.00 | 172.86 | 201.86 |
| <input type="checkbox"/> INT 35020-7201 | ROBOT PROGRAMMING | 1.29 | 31 | 29.00 | 332.82 | 361.82 |
| <input type="checkbox"/> INT 35030-7201 | ROBOT PROGRAMMING FANUC | 0.75 | 18 | 103.00 | 193.50 | 296.50 |
| <input type="checkbox"/> INT 35035-7201 | ROBOT PROGRAMMING MOTOMAN | 1.67 | 40 | 140.00 | 430.86 | 570.86 |
| <input type="checkbox"/> INT 35045-7201 | ROBOT ONLINE PROGRAM ABB IRC5 | 1.00 | 24 | 66.00 | 258.00 | 324.00 |
| <input type="checkbox"/> INT 35060-7201 | ROBOT ONLINE PROGRAM DENSO | 0.42 | 10 | 3.00 | 108.36 | 111.36 |
| <input type="checkbox"/> INT 35070-7201 | ROBOT OFFLINE PROGRAM FANUC | 0.58 | 14 | 3.00 | 149.64 | 152.64 |
| <input type="checkbox"/> INT 35080-7201 | ROBOT OFFLINE PROGRAM DENSO | 0.83 | 20 | 3.00 | 214.14 | 217.14 |
| <input type="checkbox"/> INT 35085-7201 | ROBOT OFFLINE PROGRAM MOTOMAN | 1.00 | 24 | 8.00 | 258.00 | 266.00 |
| <input type="checkbox"/> INT 35090-7201 | ROBOTIC MAINT PM TROUBLESHOOT | 1.04 | 25 | 43.00 | 268.32 | 311.32 |
| <input type="checkbox"/> INT 35100-7201 | ROBOTICS INTEGRATION WITH PLC | 0.63 | 15 | 23.00 | 162.54 | 185.54 |
| <input type="checkbox"/> INT 35105-7201 | ETHERNET NETWORKING PROTOCOLS | 0.50 | 12 | 35.00 | 129.00 | 164.00 |
| <input type="checkbox"/> INT 35110-7201 | ROBO WRKCELL INTEGRTE INTERFAC | 1.00 | 24 | 28.00 | 258.00 | 286.00 |

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| UNIT 35 PROGRAMMING AND CONTROLS (CONTINUED) | | | | | | |
| <input type="checkbox"/> INT 35120-7201 | MACHINE CENTER INTEGRATION | 1.00 | 24 | 8.00 | 258.00 | 266.00 |
| UNIT TOTAL | | 12.38 | 297 | 521.00 | 3194.04 | 3715.04 |
| UNIT 40 MAINTENANCE SYSTEMS DESIGN AND DEVELOPMENT | | | | | | |
| <input type="checkbox"/> INT 40010-7201 | PRODUCTION PRODUCT HANDLING | 0.58 | 14 | 113.00 | 149.64 | 262.64 |
| <input type="checkbox"/> INT 40020-7201 | IND MAINTENANCE TROUBLESHOOTIN | 0.92 | 22 | 138.00 | 237.36 | 375.36 |
| <input type="checkbox"/> INT 40030-7201 | PREVENTIVE PREDICTIVE MAINTEN | 1.25 | 30 | 46.00 | 322.50 | 368.50 |
| <input type="checkbox"/> INT 40040-7201 | FUNDAMENTALS HYDRAULIC CIRCUIT | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40050-7201 | HYDRAULIC FLUIDS | 0.33 | 8 | 23.00 | 85.14 | 108.14 |
| <input type="checkbox"/> INT 40060-7201 | CONTROL VALVES | 0.33 | 8 | 23.00 | 85.14 | 108.14 |
| <input type="checkbox"/> INT 40070-7201 | FLOW CONTROL VALVES CIRCUITS | 0.33 | 8 | 16.00 | 85.14 | 101.14 |
| <input type="checkbox"/> INT 40080-7201 | ACTUATORS | 0.33 | 8 | 16.00 | 85.14 | 101.14 |
| <input type="checkbox"/> INT 40090-7201 | VALVES | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40100-7201 | HYDRAULIC CIRCUITS | 0.33 | 8 | 23.00 | 85.14 | 108.14 |
| <input type="checkbox"/> INT 40110-7201 | REMOTE CONTROL FILTRATION TRBL | 0.33 | 8 | 33.00 | 85.14 | 118.14 |
| <input type="checkbox"/> INT 40120-7201 | FACTS ABOUT AIR | 0.33 | 8 | 23.00 | 85.14 | 108.14 |
| <input type="checkbox"/> INT 40130-7201 | AIR PREPARATION | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40140-7201 | AIR PIPING | 0.33 | 8 | 23.00 | 85.14 | 108.14 |
| <input type="checkbox"/> INT 40150-7201 | PNEUMATIC ACTUATORS | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40160-7201 | PNEUMATIC VALVES | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40170-7201 | PNEUMATIC CYLINDER SPEED CNTRL | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| <input type="checkbox"/> INT 40180-7201 | PNEUMATIC TROUBLESHOOTING | 0.33 | 8 | 13.00 | 85.14 | 98.14 |
| UNIT TOTAL | | 7.70 | 186 | 568.00 | 1986.60 | 2554.60 |
| UNIT 45 QUALITY AND LEAN MANUFACTURING | | | | | | |
| <input type="checkbox"/> INT 45010-7201 | INTRODUCTION TO QUALITY | 1.71 | 41 | 23.00 | 441.18 | 464.18 |
| <input type="checkbox"/> INT 45020-7201 | COSTS AND TOOLS OF QUALITY | 1.71 | 41 | 33.00 | 441.18 | 474.18 |
| <input type="checkbox"/> INT 45030-7201 | QUALITY SYSTEMS LEAN MFG | 0.67 | 16 | 123.00 | 172.86 | 295.86 |
| <input type="checkbox"/> INT 45040-7201 | 5S SYSTEM | 0.33 | 8 | 73.00 | 85.14 | 158.14 |
| <input type="checkbox"/> INT 45050-7201 | TPM POKA YOKE AND LEAN THEORY | 0.45 | 11 | 93.00 | 116.10 | 209.10 |
| <input type="checkbox"/> INT 45060-7201 | LEAN VISUAL WORKPLACE KAIZEN | 0.29 | 7 | 43.00 | 74.82 | 117.82 |
| <input type="checkbox"/> INT 45070-7201 | VALUE STREAM MAPPING SETUP RED | 0.38 | 9 | 73.00 | 98.04 | 171.04 |
| <input type="checkbox"/> INT 45080-7201 | METROLOGY | 0.29 | 7 | 13.00 | 74.82 | 87.82 |
| <input type="checkbox"/> INT 45090-7201 | MACHINE VISION | 1.38 | 33 | 173.00 | 356.04 | 529.04 |
| UNIT TOTAL | | 7.21 | 173 | 647.00 | 1860.18 | 2507.18 |
| TOTAL | | 53.03 | 1274 | 3523.00 | 13,681.74 | 17,204.74 |

ASSESSMENTS

| | | | | | | |
|---|-------------------------------|--|-----|--------|------|--------|
| <input type="checkbox"/> *INT C410-7201 | MSSC CERTIFIED PRODUCTION TEC | | 6 | 280.00 | 0.00 | 280.00 |
| <input type="checkbox"/> *INT C420-7201 | MSSC SAFETY ASSESSMENT | | 1.5 | 80.00 | 0.00 | 80.00 |
| <input type="checkbox"/> *INT C430-7201 | MSSC QUALITY ASSESSMENT | | 1.5 | 80.00 | 0.00 | 80.00 |
| <input type="checkbox"/> *INT C440-7201 | MSSC MFG PROCESSES ASSESSMENT | | 1.5 | 80.00 | 0.00 | 80.00 |
| <input type="checkbox"/> *INT C450-7201 | MSSC MAINTENANCE ASSESSMENT | | 1.5 | 80.00 | 0.00 | 80.00 |
| <input type="checkbox"/> *INT C460-7201 | ASQ QUALITY INSPECTOR CERT | | 4 | 250.00 | 0.00 | 250.00 |
| <input type="checkbox"/> *INT C470-7201 | ASQ QUALITY PROCESS ANALYST | | 4 | 250.00 | 0.00 | 250.00 |
| <input type="checkbox"/> *INT C480-7201 | ASQ QUALITY IMPROVEMENT ASSOC | | 3 | 250.00 | 0.00 | 250.00 |
| <input type="checkbox"/> *INT C490-7201 | SME CMFGT PRE-TEST | | 3 | 280.00 | 0.00 | 280.00 |
| <input type="checkbox"/> *INT C500-7201 | SME CMFGT CERTIFICATION | | 3 | 320.00 | 0.00 | 320.00 |

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

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FOR OFFICE USE ONLY

Instructor Approval _____ Date _____

Total Credit _____ Total Contact _____ Total Cost _____