



## Proposal to Cyclops Industries for CNC Training and Certification Testing

### Project Summary

Cyclops Industries has requested a comprehensive CNC Operations and Certification training program for employees to take place within a period of two years from the start of the training.

### Proposal

The Robert C. Byrd Institute (RCBI) will provide CNC training aligned with company needs, related training for DOL registered apprenticeships, and National Institute for Metalworking Skills (NIMS) standards to upskill and certify employees. The training is broken down into modules to allow open entry and exit for individuals at different skill levels. The area and modules, with recommended contact hours, are listed in recommended sequence but may be scheduled in any order with mutual agreement between the company and RCBI.

### Training Areas and Modules

#### **Area 1: Precision Measurement and Math**

Module A: Math: Designed to develop understanding of mathematical concepts required of skilled employees in the machine trade and related occupations. (10 hours)

Module B: Measurement and Precision: Participants learn to identify select and use measuring instruments used in machining. (15 hours)

Basic Quality Tech: Introduces participants to the concepts required for a Quality Technician to support Quality and Lean certifications; how to increase efficiencies in capabilities, cost and accuracy. (15 hours)

Certification: Preparation and testing for NIMS certification Measurement, Materials, and Safety (MMS). (4 hours)

#### **Area 2: Blueprint Reading**

Participants will develop the knowledge, abilities and skills to use standard and GDT orthographic blueprints as required in a machine shop and proper identification/selection and use of measurement instruments to ensure machined projects meet the blueprint specifications. (10 hours)



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### Area 3: CNC Mill

Basic Operations - CNC Mill: Participants will receive instruction on CNC mill operations including machine setup and tooling selection. They will receive instruction on work coordinates, tool length offsets, coordinate settings, program entering and editing, tool wear compensation, setting zero, and part set up. Milling operations will cover X, Y, and Z axes. (15 hours)

Intermediate: Programming – CNC Mill: Participants will continue basic operations and include programming and troubleshooting operations. (15 hours)

Certification: Preparation and testing for NIMS CNC Mill Operator certification and CNC Mill Setup, Operations and Programming Certification. This includes hands-on activities required for certification. (10 hours)

### Area 4: CNC Lathe

Basic Operations - CNC Lathe: Participants will instruction on CNC lathe operations including machine setup and tooling selection. They will receive instruction on work coordinates, tool length offsets, coordinate settings, program entering and editing, tool wear compensation, setting zero, and part set up. Lathe operations will cover X and Z axes. (15 hours)

Intermediate: Programming – Lathe: Participants will continue basic operations and include programming and troubleshooting operations. (15 hours)

Certification: Preparation and testing for NIMS CNC Lathe Operator certification and CNC Lathe Setup, Operations and Programming Certification. This includes hands-on activities required for certification. (10 hours)

### Area 4: Troubleshooting Skills

Troubleshooting Skills: Participants will become skilled in problem analysis and troubleshooting of machines and processes utilized in their specific work environment. They will develop a basic knowledge of tools and methods for identifying and solving problems that arise in machining practice. (20 hours)

### Module 6: CAD/CAM Autodesk Inventor

Beginning Computer Aided Manufacturing and Design (CAD/CAM): This course will introduce CNC Programming via computer aided design (CAD) and computer aided manufacturing (CAM). Participants will learn to use Autodesk Inventor. Basic parametric modeling and design will be taught, process layout, tool selection and how to post a program. Participants will receive instruction in



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program verification and how to analyze it. Course focus will be on 2-D programming. (20 hours)

Advanced Computer Aided Manufacturing and Design (CAD/CAM): This course will provide extended Autodesk Inventor programming including 3-D concepts. (20 hours)

### Schedule and Timeline

Training may be requested at Cyclops Industries or at RCBI. Training and testing schedule will be scheduled at the convenience of Cyclops Industries, with mutual agreement of the RCBI.

### RCBI Trainer

RCBI will assign a trainer appropriate for each training option and may include any RCBI instructor or technical services staff.

### Project Benefits

Improves metalworking skills for multiple employees and adds new skill sets with industry-recognized credentials.

### Costs

Instruction (184 hours @ \$90 per hour):	\$16,560.00
Instructor Prep Time: (20 hours @\$90 per hour)	\$ 1,800.00
NIMS Accounts (\$120 per person per year)	\$ 1,200.00
<b>Total Project Cost</b>	<b>\$19,560.00</b>

### Notes

1. Materials to be provided by the company.
2. Each module may have up to 10 employees. More than 10 employees will require an additional module delivery at \$90 per hour listed for the module.
3. Each participant requires 1 NIMS certification account which is good for any exams within a 1-year period from date of first activation. Training spanning over 2 years will require a second certification account. Estimated 10 training accounts are provided in the cost. Additional accounts may be purchased for \$120 per account.



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4. RCBI will provide travel at no cost to the company through leverage of RCBI grant funds.
5. RCBI will provide up to \$5000 registration cost for employees registered for a DOL Registered Apprenticeship occupation through RCBI.
6. Contact hours for each training are estimated and may be adjusted depending on individual participant skill levels if necessary and are available for additional cost.
7. Additional training hours and/or topics may be requested at the rate of \$90 per hour.

Proposal for: Cyclops Industries  
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South Charleston, WV 25303

This proposal was prepared 1/12/2023 by Ian Blache and Carol Howerton, and is valid for a 45-day period from this date.