

Minnesota Dual Training Grant Resource

EXAMPLE Dual-Training Program Outline

Applicant Name (Employer or Organization): Trex Commercial Products

Total Grant Request Amount: \$12,000

Total Number of Dual Trainees: 2

Introductory paragraph about the applicant:



Trex Commercial Products is a subsidiary of Trex Company. The subsidiary is comprised of two distinct companies, including Trex Commercial Products, the country's leading manufacturer and supplier of custom architectural railings, and Staging Concepts, a leading supplier of staging equipment for the global performing arts, sports and event production markets. At Trex Commercial Products, we are a job shop that requires our employees to be highly skilled in their trade to produce a precise and beautiful product.

With new opportunities in our market, we have expanded quite a bit and continue to show strong projections for 2020 and beyond. In the last year, Trex Commercial Products has had two employees participate in the Dual Training Grant Program. We have seen exciting progress not only in their education, but also in willingness to work cross-functionally in the shop. The two employees have had opportunities to train on our CNC Machines through job shadowing and mentorship. They have also been able to run the basic pre-programmed projects alone when we have had primary operators on vacation. The employees have both expressed their excitement to continue the program and opportunities that will come with it. After a recent conversation with the two, we discussed the challenges the COVID-19 Pandemic has brought to their education. Fortunately, both students have felt comfortable with their progress while completing school virtually and have even found opportunities to finish lab projects on sight using our material and machines. One of the employees expressed how lucky he felt to work in an environment where he could complete these projects, knowing that fellow classmates do not have a work environment or the materials that allows for this.

Advanced Manufacturing: Computer Numerical Control (CNC) Programmer

- Hennepin Technical College
 - Computer Numerical Control Technician Diploma

Minnesota Dual Training Grant Resource
EXAMPLE Dual-Training Program Outline

Description of MN Dual-Training Pipeline competencies associated with related instruction (Criterion 1):

The related instruction for the dual trainees will continue to take place at Hennepin Technical College in Brooklyn Park, MN. Through this program, the employees will earn their Computer Numerical Control (CNC) Technician Diploma. This 64 credit Diploma covers almost all the Industry-Sector and Industry-Wide Technical Competencies. Classes that the students are taking include: Machining and CNC Introduction, Blueprint Reading, CNC Turning and Milling, CNC Programming, Setup, and Operation, Quality Assurance, Beginning Algebra (shop math), Inspection Processes, CNC Machining and Turning Centers, and CAD/CAM introduction. We expect our dual trainees to become proficient in CNC Machining through this related instruction and on the job training.

Description of MN Dual-Training Pipeline competencies associated with on-the-job training (Criterion 1):

The core styles of on-the-job training we have, and will continue to incorporate, at Trex Commercial Products are Job Shadowing, Mentorship, Discussion Based, and Assignment- Based Project Evaluation. The main competencies in which our current employees are becoming proficient in through on-the-job training include: General Housekeeping and Maintenance, Preventative Maintenance, Tooling Maintenance, Benchwork and Hand Tools, Manual Milling, Turning Operations, Grinding Skills, CNC Turning, CNC Milling, Inspection Practices, and Advanced CNC Milling and Turning. Some of these have already been completed after their first year (outlined after the chart). Next, you will find a chart that lays out our on-the-job training plan.

Illustration of on-the-job training setup through a table, chart, or graph (Criterion 1):

On-the-Job Training Plan

Dual Trainee Occupation	Mode of On-the-Job Training	Specific Competencies	Estimated number of hours for completion
CNC Programmer	Job Shadowing & Mentorship	Maintenance: Maintenance of tools and company machinery – practices and procedures to safely change parts and maintain their machine. Demonstrate LO/TO procedures and proper use of personal protective equipment per OSHA standards.	8 Hours
CNC Programmer	Mentorship & Discussion based	General Housekeeping: Demonstrate 5S (Sort, Set in Order, Shine, Standardize, Sustain) as it applies to trainees’ specific machine and work area.	6 Hours

Minnesota Dual Training Grant Resource
EXAMPLE Dual-Training Program Outline

Dual Trainee Occupation	Mode of On-the-Job Training	Specific Competencies	Estimated number of hours for completion
CNC Programmer	Job Shadowing & Mentorship	Preventative Maintenance & Tooling Maintenance: Complete regular preventative maintenance of machine and tools used, including mixing own coolant and service own machine	6 Hours
CNC Programmer	Job Shadowing & Mentorship	Benchwork and Hand Tools: Demonstrate knowledge of tools, methods, and procedures. Complete hand deburring of edges and holes using grinding wheels and deburring tools (bench grinder, hand deburr)	8 hours
CNC Programmer	Job Shadowing & Mentorship	Manual Milling: Operate a Bridgeport mill (Vertical). Demonstrate safe operation of machine, show ability to use cutting tools and holders, setups, spindles and arbors, work-holding methods.	40 hours
CNC Programmer	Job Shadowing & Mentorship	Turning Operations: Show ability to groove tubes inside and outside using lathe and proper cutting tools in a safe manner. Ability to read speeds and feed from standard work instructions.	8 Hours
CNC Programmer	Job Shadowing & Mentorship	Grinding Skills: Set-up and use handheld or bench grinder to achieve required surface finish.	10 Hours
CNC Programmer	Mentorship & Assignment-Based	CNC Milling: Demonstrates the fundamentals of CNC machining processes with skills in work holding, speeds and feeds for various materials and functions and capabilities of CNC machining tools.	40 hours
CNC Programmer	Job Shadowing & Mentoring	Inspection Practices: Inspect parts as they come off machine – know what to look for on Aluminum, Stainless, and steel parts. Demonstrate understanding of precision tools and techniques we use for inspection per blueprints (Ex: tape measure, caliper, micrometer). Develop personal inspection plan and complete sign offs on every part.	20 hours

Minnesota Dual Training Grant Resource
EXAMPLE Dual-Training Program Outline

Dual Trainee Occupation	Mode of On-the-Job Training	Specific Competencies	Estimated number of hours for completion
CNC Programmer	Mentorship & Assignment Based	Advanced CNC Turning: Dual Trainee will perform advanced CNC Work on lathe, including offset turning and enlarging holes (boring functions). Must write multiple 3-5 minute programs.	80 Hours
CNC Programmer	Mentorship & Assignment Based	Advanced CNC Milling: Use advanced programming techniques including set-up and operation of the CNC milling machine. Demonstrate techniques on fixtures.	80 Hours

Correlation between related instruction and on-the-job training (Criterion 1):

The CNC Technician program at Hennepin Technical College directly translates to the dual trainee’s job at Trex Commercial Products through the work complete in on the job training, and in some cases, expands on the knowledge they have from their current work function. Our goal is to continue to translate the classroom work into current projects. As the dual trainee develops skills in the classroom; such as, introduction to machining, tooling, blueprints, methods to inspect a part, and strategies to develop a CNC Program; they will then come back to our production facility and use the skills actively, following our manufacturing processes. This has already been shown through our employees who have completed one to two semesters. Each semester, we will expand their knowledge by challenging their skills in specific areas, such as grinding, turning, and milling; then relay feedback based on observing and inspection. We have found this to be effective and more precise since the employees have been through a few semesters of schooling. Through the program at Hennepin Technical College the dual trainees have the opportunity to work on machines that are similar/or the same to what we operate at Trex Commercial Products, so what they learn on, has directly translated to the machines at our site.

In addition to the grant, resources that will minimize direct costs of related instruction (tuition, fees, required books, and required materials) for dual trainees (Criterion 2):

The employees participating in this program have yet to incur any personal costs. This will continue for them as they move forward with the program. Trex Commercial Products will cover any additional school related costs, if not covered by the grant. The employees are both applying for financial aid as well. We do not want this program to cause the employee to incur extra out of pocket costs, and so far, we have not seen this as a problem.

Internal and external employment opportunities for dual trainees upon completion of dual-training program (Criterion 3):

As a CNC Machinist, this employee will have opportunities internally in CNC roles or eventually, supervisory and lead roles. Since these people will have broader shop knowledge and education requirements, it greatly expands their career options. These people will also have opportunities in the greater state of MN. From a simple Indeed

Minnesota Dual Training Grant Resource
EXAMPLE Dual-Training Program Outline

search for CNC Machinist jobs, I found over 100 job opportunities in Minneapolis, MN. This speaks volumes to the need and opportunity a dual trainee has internally and externally by completing the CNC Machinist program.

Compensation for dual trainees upon completion of dual-training program (Criterion 4):

The employees who complete this dual training program will have the opportunity to increase their pay greatly over time. Currently, our median production employee (excluding CNC Machinists) makes \$24.71. Our lowest paid CNC Machinist is currently at

\$25.99/hour and highest at \$35.71/hour. Based on these numbers, you can see that having the knowledge to operate and program a CNC Machine has the potential to greatly impact the employee's compensation.

Besides wages, this position has opportunities on both first and second shift – giving them flexibility. Our company also offers a comprehensive benefits package, including, medical and vision, dental, life, short- and long-term disability, a 401(k) match, discounted stock, and paid vacation and sick time off. As a full-time employee, the dual trainee can partake in these benefits and will continue to be eligible upon completion of the program.

Closing remarks:

Trex Commercial Products is growing, and our need for talented individuals is only increasing. This opportunity for our employees to continue their education will provide countless opportunities in the future, ideally, within Trex Commercial Products.