

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MOU) dated as of _____ between Southwest Virginia Community College (SWCC) and Dominion Aquaculture, LLC provides proposed workforce development and training solutions that will be offered through SWCC to support the workforce of Dominion Aquaculture, LLC. It is understood that certain facilities and equipment to support this workforce development and training may be funded by the Virginia Coalfield Economic Development Authority (VCEDA), and in such event, workforce development training will be provided by SWCC utilizing those facilities and equipment. In the event Dominion Aquaculture, LLC has not opened for operations in the VCEDA region by December 31, 2020, then this MOU shall be null and void. Below are workforce development and training solutions proposed by SWCC under this MOU:

Dominion Aquaculture Proposed Training Solution:

1. Manufacturing Technician 1 Certification
2. OSHA 10
3. Red Cross First-Aid
4. Team Building: We're in the Band
5. NCRC

Manufacturing processes and basic skills aptitude (MT1):

The Manufacturing Technology (MT) training program is a highly specialized course based on the techniques and interrelationships found in high performance manufacturing and production. Instruction focuses on the critical actions, knowledge, systems, and processes necessary to participate in an advanced manufacturing enterprise. Activities include a focus on math and measurement; quality and continuous improvement practices; and, advanced manufacturing processes and production. Participants develop high performance skills through demonstrations, lectures, self-paced studies, labs, technical presentations, critical thinking, problem solving, and individual/group activities in order to demonstrate the core set of skills and knowledge necessary to prepare for sustained careers in the high performance manufacturing environment.

These courses will assist the student in learning how to evaluate basic algebraic expressions and utilize industry tools to accurately measure critical process variables. The student will also learn how to apply mathematical formulas to convert units and develop mathematical relationships to solve for one unknown. These courses will expose the student to the critical areas of manufacturing and the applied technology principals that support the process. The module includes courses on: spatial reasoning, mechanics, fluid power and thermodynamics, electricity, chemistry, and manufacturing processes & controls.

These courses are designed to describe the critical elements of developing a lean culture in manufacturing. Upon completion of these courses the student will be able to apply a scientific problem solving method in addressing constraints in manufacturing and as well as identify continuous improvement opportunities leading to bottom-line savings.

The Manufacturing Technician 1 ©(MT1) certification program was developed to meet the growing employment demands of the manufacturing industry. The MT1 program addresses the core industry-wide skills standards required for skilled production occupations in all sectors of manufacturing. The core

competency areas certified are: (1) Math and Measurement, (2) Spatial Reasoning and Manufacturing Technology, and (3) Business Acumen and Quality.

The purpose of the MT1 certification program is to document individuals' mastery of the critical competencies required for modern manufacturing production and production-related occupations. The goal of the MT1 certification program is to:

- A. Develop a workforce pipeline capable of meeting the requirements of existing and emerging employers in advanced technology industries such as manufacturing,
- B. Provide a customized fast track, pathway to stackable credentials for 21st Century advanced technology careers in industry,
- C. Provide instructor-led training to address identified technical skill gaps, and provide a pathway to advanced level training and specialized training based on industry requirements for potential new hires and incumbent workers.

The Manufacturing Technician Level 1 assessment measures individual skills attainment in 12 critical technical skills.

The complete MT1 assessment includes three certificate modules: Math and Measurement; Spatial Reasoning and Manufacturing Technology; and, Quality and Business Acumen. MT1 applicants must earn all three certificates to qualify for the MT1 Certification and two of three to earn the Manufacturing Specialist Certification.

Skill Sets:

Measurement

- Demonstrate using a Decimal Inch Machinist's Rule to Measure a Length
- Using a U.S. Ruler and Tape Measure to Measure a Length
- Using a metric ruler
- Measuring liquids/weights in Metric and U.S. Customary Units
- Converting Between Common Fraction Inches and Decimal Inches.
- Convert Between U.S. Customary Units and SI Metric Units.

Algebra for Manufacturing

- Perform correct order of operation to simplify mathematical expressions.
- Generate linear equations with one unknown for situations described in text.
- Solve simple linear equations with one unknown.

Math for Quality

- Read and interpret histograms, bar charts, line graphs, and scatter plots.
- Interpret descriptive statistics: Mean median, mode, and range.
- Demonstrate qualitative reasoning for situations involving statistical data and probabilities.

Spatial Reasoning

- Visually translate from 2D drawings to 3D images and back
- Identifying different views for given isometric drawing of an object.

- Identifying the different elements of an object in various views
- Predict behavior of visual representations of simple mechanisms

Mechanics

- Demonstrate qualitative reasoning about mechanical force and systems involving pulleys, levers, and gears.
- Determine mechanical advantage of different systems of pulleys
- Determine effects of different lever configurations on the force required to lift an object
- Generate different configurations of gears and axels to increase power or speed.

Fluid Power and Thermodynamics

- Generate causal explanations of behavior of (a) simple systems involving changes in pressure, temperature and volume, (b) simple hydraulic/pneumatic devices and (c) principles of heat transfer.
- Predict the effects of changes in pressure on volume and temperature
- Predict the effects of changes in temperature on volume and pressure
- Predict the mechanical advantage of simple hydraulic and pneumatic systems.

Electricity

- Generate causal explanations of the relationship between electrical and magnetic forces and explanations of how electric motors, generators, solenoids, and relay switches behave.
- Generate causal explanations and predictions of electric circuit behavior involving simple series and parallel circuits containing relays, capacitors, resistors and simple devices such as light bulbs and pumps.

Chemistry

- Core Concepts: Classify substances as a molecule, element, mixture, or compound; classify changes in substances as chemical reaction, mixture, or physical change; classify and apply characteristics acids and bases; interpret the periodic chart; and classify methods for separating mixtures (filtration, evaporation, distillation).
- Chemical Reactions: Explain chemical bonding and structural changes that take place in common chemical reactions and interpret chemical formulas and equations. Polymers: Generate explanations of molecular structural difference and physical characteristics between common types of polymers such as slime, flexi-putty, rubber and plastic bags.

Manufacturing Processes and Controls

- Generates the Sequence of Operation and a Flow Diagram for production tasks and processes.
- Generate explanations of how electrical-mechanical controls and sensors operate in simple systems and devices.
- Create flow charts for models (mock-up) of simple computer controlled systems such as a traffic light or washing machine.

Quality and Lean Manufacturing Concepts

- Identify descriptions of manufacturing quality and lean production initiatives as examples of value stream mapping, waste elimination, 5S, DMAIC, and Total Productive Maintenance (TPM)
- Create a process map and value stream map to improve a process or reduce waste
- Demonstrate using an industry standard problem solving method such as DMAIC for improving production processes. Currently using DMAIC.

SPC Basic Concepts

- Determine plausible causes in fluctuations in processes based on statistical information (mean, range, & variation patterns)

Business Acumen

- Predict how actions, strategies, and decisions impact the bottom line.
- Classify examples of common business financial terms

OSHA 10:

The OSHA 10-hour courses are intended to provide information needed to help line workers, as well as foremen, supervisors, managers, superintendents, competent persons, safety staff, safety committee members, safety managers, and others, be more aware of health and safety hazards so they can be avoided. The OSHA 10 hour training courses also includes a brief overview of how the Occupational Safety and Health Administration (OSHA) functions, and the rights of employers and employees.

Red Cross First-Aid:

Through this first aid certification class, the employee will learn how to respond to specific situations, which will help care for people in crisis as they wait for medical professionals to arrive. Designed to help non-medical professionals provide assistance in times of crisis, this course will allow the employee to gain an understanding of first aid best practices for a wide range of conditions, including: Asthma emergencies, Anaphylaxis, Burns, Choking, Diabetic emergencies, External bleeding, Environmental emergencies, Heart Attack, Poisoning, Neck, head and spinal injuries, Stroke, and Seizure.

In addition, our first aid classes typically cover information on administering CPR and using AEDs – allowing certification in all three (first aid, CPR and AED) in one convenient class. This gives them the best opportunity for a positive outcome – and gives the company the opportunity to maintain a safe work environment.

Team Building:

We're in the Band is a fun, motivating look at the importance of preparation, teamwork and connecting with your customer as seen through the eyes of an up and coming folk rock group. Great for front line employees. This 3 hour seminar will inspire the team to give their very best performance.

National Career Ready Certificate:

The ACT National Career Readiness Certificate (ACT NCRC®) is an assessment-based credential powered by ACT WorkKeys®. Issued at four levels, the ACT NCRC measures and certifies the essential work skills needed for success in jobs across industries and occupations. The ACT NCRC is widely used by employers,

educators, workforce developers, and others with a stake in the success of the economy. More than 2.3 million ACT NCRCs have been issued nationwide since the credential was introduced in 2006.

ACT NCRC highlights:

- Awarded at four levels—Platinum, Gold, Silver, and Bronze
- Powered by ACT WorkKeys research-based assessments
- Measures and certifies broadly relevant foundational work skills
- Recognized and recommended by thousands of employers
- Recommended for college credit by the American Council on Education (ACE)
- Serves as the basis of state- and county-level workforce and economic development initiatives

Training Name	Hours	Certification	Class Size
Manufacturing Specialists and Technician	112	Manufacturing Skills Institute- MT 1	8
OSHA 10	10	OSHA	8
First-Aid	6	Red Cross	8
Team Building	4	SWCC	8
Career Readiness Certificate	3	American College Testing (ACT)	8
Total	135	6 Certifications	

SWCC Total Cost per trainee is \$1,122

Comparison Price:

	LFFCC	CCWA	SWCC
MT1	\$1,899	\$2,400	\$901
OSHA 10 and First-Aid	\$374	\$249	\$161
Team Building	\$40	\$99	0
NCRC	\$35	\$35	\$35
Total	\$2,348	\$2,783	\$1,097

ACCEPTED AND AGREED TO:

Southwest Virginia Community College (SWCC)

By: _____

Title: _____

Dominion Aquaculture, LLC

By: _____

Title: _____