BULLETIN 98-08
U.S. Department of Labor
Employment and Training Administration
Office of Apprenticeship Training, Employer Labor Services (OATELS)
Washington, D.C. 20210

Distribution: A-541
A-546 All Field Staff
A-547 SAC, Lab.Com

Subject: New Apprenticeable Occupations -- Fish Hatchery, Worker Coating Machine Operator I
Code: 200

Action: Immediate

Purpose: To inform Office of Apprenticeship Training, Employer Labor Services (OATELS), Bureau of Apprenticeship and Training Bureau (BAT) Staff of two new apprenticeable occupations:

Fish Hatchery Worker
O*NET Code: 45-2093.00
RAIS Code: 1024
Training Term: 2000 Hours
Type of Training: Time-based

Coating Machine Operator I
O*NET Code: 51-9121.02
RAIS Code: 1025
Training Term: 2000 Hours
Type of Training: Time-based

Background: The occupation Fish Hatchery Worker was submitted by Salvatore D'Amore, ATR, on behalf of Clearwater Fishery in Monroeville, NJ. The Fish Hatchery Worker spawns and raises fish for commercial purposes. A copy of the work process and related instruction outline is attached for your information.

The occupation of Coating Machine Operator I was submitted by Sheila A. Kelly, REA, for Region IV. This occupation does not appear in the Dictionary of Occupational Titles; however, a code has been assigned by an Occupational Analysis Center.

The Coating Machine Operator I operates machines to coat cloth, paper, or other sheet material used in production of artificial leather and other coated fabrics. A copy of the work process and related instruction outline are attached for your information.

If you need any further assistance in this matter, please contact the BAT National Office, DNIP.

Note: State Directors, please share this information with our SAC partners where appropriate.

Attachments
DESCRIPTION: Spawns and raises fish, for commercial purposes and performs any combination of the following tasks: to trap and spawn game fish, incubate eggs and rear fry in fish hatchery; Diverts fish into holding tanks. Strips eggs from female fish and places eggs in moist pans. Adds milt stripped from male fish to fertilize eggs. Fills hatchery trays with fertilized eggs and places trays in incubation troughs. Turns valves and places baffles in troughs to adjust volume, depth, velocity, and temperature of water. Inspects eggs and picks out dead, infertile, and off-color eggs using suction syringe. Sorts fish according to size, coloring, and species and transfers fingerlings to rearing ponds or tanks. Feeds high protein foods or cereal with vitamins and minerals to fingerlings to induce growth to size desired for commercial use. Recounts food over surface of water by hand or activates blower that automatically scatters food over water to feed fish. Observes appearance and actions of developing fish to detect diseases, and adds medications to food and water as instructed by superior. Records field data and prepares reports of hatchery activities. Assists in design, construction, renovations and minor alterations to new/operating aquaculture systems. Checks systems operation daily or more frequently as needed. Drains and cleans troughs and ponds using brushes, chemicals and water. Makes minor repairs to facility equipment, paints buildings and maintains grounds. Arranges with buyers for sale of fish. Removes fish from pond, using dip net. Counts and weighs fish. Loads fish into tank truck or dresses and packs in ice for shipment. May perform standard tests on water samples to determine oxygen content. May spawn and rear food fish or tropical and exotic fish for commercial use. May mark migrating fish with liquid nitrogen, using hand-operated branding device. May be designated according to kind of fish raised such as Trout Farmer.”

This is the description of Fish Hatchery Worker/Fish Farmer found in the Dictionary of Occupational Titles, U.S. Department of Labor, fourth Edition, Revised 1991.
## WORK PROCESS SCHEDULE
### FISH HATCHERY WORKER
**O*NET Code:** 45-2093.00   **RAIS Code:** 1024

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Approximate Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Set Up Pumps and Tanks</strong></td>
<td>100</td>
</tr>
<tr>
<td>1. Disinfect tanks refill, de-chlorinate if necessary</td>
<td></td>
</tr>
<tr>
<td><strong>Operation of Pumps/-Identify parts</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>Basic Troubleshooting - Aeration &amp; Fluid</strong></td>
<td>120</td>
</tr>
<tr>
<td><strong>Systems Operations Troubleshooting</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Pump Repair</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>Cleaning of Equipment/Systems as per DOL/FDA</strong></td>
<td>80</td>
</tr>
<tr>
<td>1. Pumps, containers, baskets, buckets, nets, graders, hauling tanks, microscopes</td>
<td></td>
</tr>
<tr>
<td><strong>Handling of Nets/ Harvesting Equipment</strong></td>
<td>100</td>
</tr>
<tr>
<td>1. Conduct harvest of fish clean and repair nets</td>
<td></td>
</tr>
<tr>
<td><strong>Hauling</strong></td>
<td>100</td>
</tr>
<tr>
<td>1. Set up fish for haul, load fish.</td>
<td></td>
</tr>
<tr>
<td>2. Treat fish, haul and stock fish</td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge of Computer-Functions</strong></td>
<td>100</td>
</tr>
<tr>
<td>Record Keeping/Data Entry</td>
<td></td>
</tr>
<tr>
<td><strong>Storm Water Management</strong></td>
<td>30</td>
</tr>
<tr>
<td><strong>Site Selection</strong></td>
<td>100</td>
</tr>
<tr>
<td>1. New site expansion</td>
<td></td>
</tr>
<tr>
<td>2. Feasibility study</td>
<td></td>
</tr>
<tr>
<td>3. Facility design &amp; layout</td>
<td></td>
</tr>
<tr>
<td><strong>Mathematical Applications</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Basic Hydraulics Functions</strong></td>
<td>100</td>
</tr>
<tr>
<td><strong>Electrical Functions</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>Collection/Analysis/Interpretation of Water Samples</strong></td>
<td>250</td>
</tr>
<tr>
<td>1. Collect daily water samples and conduct appropriate water chemistry tests, take appropriate remedial action to correct poor water quality</td>
<td></td>
</tr>
</tbody>
</table>
Identification of Diseases/Administer  100
1. Chemical Treatment Dosage as Needed
2. Utilize printed and computer references
3. Calculate dosages and know side effects

Propagation of Fish - Finfish/Shellfish  400
1. Obtaining gametes
2. Fertilization (triploid, diploidy)
3. Caring for spawn
4. Hatching jar/tank operation

Operation of Microscope  70
1. Diagnose pathogenic organisms
2. Investigate causes of fish mortality
3. Analyze water systems health

Fish Hatchery Worker
(Fish Farmer)
Related Instruction

Introduction to Aquaculture  7
1. Historical background of aquaculture
2. Types of aquaculture environments
3. Types of aquaculture enterprises
4. Species of economic importance
5. Advantages of aquaculture
6. Sources of information about aquaculture

The Aquatic Environment  10
1. Important variable affecting the ecological balance of a pond
2. Links in the aquatic food chain
3. The oxygen cycle in pond ecology
4. The positive and negative roles of plankton and benthic organisms in pond ecology
5. Problems concerning carbon dioxide and water acidity (pH) in pond ecology
6. Sources of water pollution

Fundamental Fish Biology  10
1. External parts of a typical fish
2. Basic external body features that permit fish to live in water
3. Internal organs of a typical fish
4. The functions of internal organs and systems of fishes
5. Life cycles of fish
6. Fish Species
Marketing
1. Fish market opportunities
2. Economy of scale
3. Factors to consider in exploring marketing alternatives
4. Food processing cuts and forms
5. Disposal of processing waste
6. Permits and regulations

Site Selection
1. Basic site requirements
2. Steps in determining water quality
3. Pond type and site evaluation
4. Basic solid types
5. Soil and topographical considerations in site selection
6. Laws, regulations, and permits required to develop a site for fish farming

Facility Design and Layout
1. Types of farm water enclosures
2. Facility requirements for food-fish production
3. Initial steps in planning an on-site processing facility
4. Factors to consider when planning pond size
5. Advantages of small versus large pond

Water Quality Management
1. Compounds and elements and their chemical formulas and symbols
2. The importance of oxygen in water quality management
3. Natural sources of water temperature variation and their effects
4. Facts about temperature management techniques
5. General guidelines for water chemistry management
6. Aquatic plant control methods

Fish Health Management
1. Skin and tissue conditions
2. Common stressors of fish
3. Common pathogenic viruses and bacteria
4. General management measures for preventing disease outbreaks
5. Treatment methods and their administration specifics
6. Regulations for chemical application in fish production
## Feeds and Feeding

1. Feed components
2. Feed conversion ratio
3. Feeding rates
4. Feed types

## Harvesting and Hauling

1. Advantages and limitations of total and partial harvest
2. Correct uses of harvesting and grading equipment
3. Pond-to-shed transport procedures
4. Holding, grading, and hauling
5. Chemical, their correct descriptions and rates
6. Guidelines for the care of nets

## Commercial Production

1. Catfish, Trout, Baitfish, Crayfish,
2. Ornamentals and other commercial species Salmon, Hybrid Striped Bass

## Mariculture: All Shellfish Species

Shrimp, Lobster, Clams, Oysters

## Cage Culture, Tank Culture, Raceway Culture

Pond Culture, Net/Pen Culture

## Business Management

1. Basic record keeping
2. Bank loan record requirements
3. Obtaining venture capital

## Basic Computer Data Entry

1. Computer controlled monitoring systems
2. Application of basic skill
3. Word processing
4. Intro to computer operations

## Economics of Aquaculture

1. Fixed costs of facilities
2. Variable costs of production
3. Value of fish at various stages
4. Overall economics of aquaculture

## Total Hours

144
Coating-Machine Operator I
O*NET Code: 51-9121.02 RAIS Code: 1025

DESCRIPTION: Operates machine to coat cloth, paper, other sheet material used in production of artificial leather and other coated fabrics: Installs uncoated sheeting roll on machine brackets, using hoist, or threads sheeting from calendar machine through coating machine rollers onto take up roll. Operates sewing machine to join uncoated roll to end of processed roll, and cuts material at seam after scam passes through coating and drying units. Adjusts doctor blade on roller clearance to produce coating of specified thickness. Starts machine when dryer temperature reaches specified setting. Turns valves to control flow of coating solution onto sheeting, or applies solution to fabric surface, using dipper and bucket. Observes process to prevent slippage of sheeting from width guides and turns guides and moves machine controls to correct such defects as streaks, wrinkles, and turned edges in sheeting. Removes coated rolls from machine.

WORK PROCESSES

<table>
<thead>
<tr>
<th>Communications</th>
<th>Approximate Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Read work-related information/instructions via e-mail</td>
<td>100</td>
</tr>
<tr>
<td>2. Use entry-to-end intercom system</td>
<td></td>
</tr>
<tr>
<td>3. Signal team member via bell and light system</td>
<td></td>
</tr>
<tr>
<td>4. Read and interpret emergency evacuation procedures</td>
<td></td>
</tr>
<tr>
<td>5. Report (in writing) problem and/or solutions</td>
<td></td>
</tr>
<tr>
<td>6. Prepare shop order requests</td>
<td></td>
</tr>
<tr>
<td>7. Read and interpret Job Safety Analysis (JSA)</td>
<td></td>
</tr>
<tr>
<td>8. Communicate with team</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Operate Entry End</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Read and interpret work orders</td>
<td></td>
</tr>
<tr>
<td>2. Acquire and prepare materials</td>
<td></td>
</tr>
<tr>
<td>3. Load rolls into machine</td>
<td></td>
</tr>
<tr>
<td>4. Sew Material onto threaded material</td>
<td></td>
</tr>
<tr>
<td>5. Thread through mangle; fill mangle with chemical</td>
<td></td>
</tr>
<tr>
<td>6. Monitor equipment for out-of spec operation</td>
<td></td>
</tr>
<tr>
<td>7. Package untreated waste</td>
<td></td>
</tr>
<tr>
<td>8. Monitor and record daily product</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Troubleshoot Entry End</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tears/inconsistencies in fabric</td>
<td></td>
</tr>
<tr>
<td>2. Contamination of chemicals during operation</td>
<td></td>
</tr>
<tr>
<td>3. Troubleshoot guiders</td>
<td></td>
</tr>
</tbody>
</table>
Operate Exit End 300
1. Visually inspect material
2. Cut sample for each doffed roll
3. Replace slitter knife assembly
4. Monitor equipment for out-of spec operation
5. Clean selvage and out-trim pipes
6. Package treated waste

Troubleshoot Exit End 150
1. Selvage rips; rolls inconsistent

Material 125
1. Wrap finished slits
2. Operate lift truck
3. Clean out trim room

Mix Chemicals 200
1. Read and interpret mix (specifications) sheet
2. Weigh out liquid and chemicals per mix sheet
3. Activate signal lights, identify proper tank for pads

Mechanical Duties 325
1. Reset Gas
2. Troubleshoot Bad Clips
3. Check bearings (entry and exit)
4. Check oil on chain
5. Repair and troubleshoot Steam Cans
6. Troubleshoot and repair Rotary Joints
7. Change belt (fans)
8. Troubleshoot and repair line leaks
9. Minor repair air leaks/line (pneumatics)
10. Assist in tear down
11. Calibrate Stretch Monitor

Housekeeping 100
1. Keeping area, walkways, and machines clean to enhance safety and product quality
2. Entry End
3. Exit End
4. Utility
5. Shipping

Reroll 250
1. Large Reroll
2. Small Reroll
3. Troubleshoot Reroll
Other
1. Research and Development (assistance)
2. Team Meeting

Total Hours 2000

COATING-MACHINE OPERATOR I
Related Instruction

<table>
<thead>
<tr>
<th>Category</th>
<th>Approximate Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Math</td>
<td>25</td>
</tr>
<tr>
<td>1. (Fraction, Decimals, Division, Multiplication, Percents, Ratio and Proportion)</td>
<td>25</td>
</tr>
<tr>
<td>2. Standard Measurement/Temperature</td>
<td></td>
</tr>
<tr>
<td>3. Advanced Math (Basic Algebra, Basic Geometry)</td>
<td></td>
</tr>
<tr>
<td>Communications</td>
<td>20</td>
</tr>
<tr>
<td>1. Writing/Reading</td>
<td></td>
</tr>
<tr>
<td>2. Comprehension Skills</td>
<td></td>
</tr>
<tr>
<td>3. Oral Communication Skills</td>
<td></td>
</tr>
<tr>
<td>4. Computer Skills</td>
<td></td>
</tr>
<tr>
<td>Basic Chemistry</td>
<td>15</td>
</tr>
<tr>
<td>1. Preparing Chemical Solution</td>
<td></td>
</tr>
<tr>
<td>2. Terminology</td>
<td></td>
</tr>
<tr>
<td>3. Understanding Reactions</td>
<td></td>
</tr>
<tr>
<td>4. Safety Hazards</td>
<td></td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>40</td>
</tr>
<tr>
<td>Mechanics</td>
<td>45</td>
</tr>
<tr>
<td>1. Basic Machine Principles</td>
<td></td>
</tr>
<tr>
<td>2. Principles of Mechanics, Lubrication, Hydraulics, Pneumatic</td>
<td></td>
</tr>
<tr>
<td>Safety, OSHA Regulations Instruction</td>
<td>15</td>
</tr>
<tr>
<td>Total Hours</td>
<td>160</td>
</tr>
</tbody>
</table>