

Republic of the Philippines
TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
East Service Road, South Luzon Expressway, Taguig City

121st TESDA BOARD MEETING
09 June 2020, Tuesday, 10:00 a.m.
Through Teleconference Via Zoom Platform

Resolution No. 2020 - 24
(Page 1 of 4 pages)

**APPROVING AND PROMULGATING THE TRAINING REGULATIONS FOR
AQUACULTURE (GROW-OUT OPERATION) NC II**

WHEREAS, TESDA Board Resolution No. 2004-21 was issued "Approving and Promulgating the Training Regulations for Aquaculture NC II" last 09 December 2004 during the 44th TESDA Board Meeting;

WHEREAS, it is the policy of TESDA to review after three (3) years any Training Regulations (TRs) promulgated by the TESDA Board;

WHEREAS, there is a need to review the existing Training Regulations in view of the developments in technology and current trends and practices in the industry;

WHEREAS, the Philippine Society of Agricultural Engineers, Agricultural Machinery Manufacturers and Distributors Association (AMMDA), Inc. , Bureau of Fisheries and Aquatic Resources (BFAR), Nueva Ecija, Central Luzon State University, Philippine Association of Fish Producers, Inc.(PAFPI), Bureau of Fisheries and Aquatic Resources-Region X, Sante Science and Technology Foundation and CDO Foodsphere Inc. with the assistance of Qualifications and Standards Office (QSO) of TESDA have reviewed the existing Training Regulations in Aquaculture NC II to response to the current skills requirements of the industry with its new technologies and industry manpower set-up and, recommended amendments;

WHEREAS, industry experts and partners, headed by the Chair/President/Manager/Director of the Philippine Society of Agricultural Engineers, Agricultural Machinery Manufacturers and Distributors Association (AMMDA), Inc. , Bureau of Fisheries and Aquatic Resources (BFAR), Nueva Ecija, Central Luzon State University, Philippine Association of Fish Producers, Inc.(PAFPI), Bureau of Fisheries and Aquatic Resources-Region X, Sante Science and Technology Foundation and CDO Foodsphere Inc., with the technical assistance of the Qualifications and Standards Office (QSO) of TESDA endorsed the proposed revisions of the Training Regulation. The existing Training

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Regulation shall be replaced with three (3) different Training Regulations, based on the age group of the clientele;

WHEREAS, during the 121st Standards-Setting and Systems Development (SSSD) Committee Meeting held on 14 May 2020, the Committee deliberated upon and agreed to favorably recommend the approval and promulgation of the Training Regulations for Aquaculture (Grow-Out Operation) NC II as attached in Annex "A" and made an integral part of this Resolution;

WHEREAS, during the 121st TESDA Board Meeting on 09 June 2020 at 10:00 a.m., the TESDA Board considered and approved the promulgation of the Training Regulations for Aquaculture (Grow-Out Operation) NC II;

NOW, THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, that the TESDA Board in its meeting today, 09 June 2020 at 10:00 a.m., has approved and promulgated the aforementioned Training Regulations for Aquaculture (Grow-Out Operation) NC II as herein appended;

BE IT RESOLVED, FINALLY, that:

(1) Copies of this Resolution and the abovementioned Training Regulations be published in the Official Gazette or in a newspaper of general circulation, and disseminated to all concerned, and the same shall be effective fifteen (15) days upon publication;

(2) All programs registered under the current Aquaculture NC II must comply with the requirements of the abovementioned Training Regulation. The one-year period of re-registration under this Training Regulations shall commence on the date of effectivity as indicated in the Implementing Guidelines/ TESDA Circular for the deployment of the Training Regulations to be issued by the TESDA Secretariat; and

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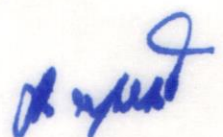
**APPROVING AND PROMULGATING THE TRAINING REGULATIONS FOR
AQUACULTURE (GROW-OUT OPERATION) NC II**

(3) Graduates of TVET programs covered by the aforementioned Training Regulations shall be required to undergo mandatory assessment under the national assessment and certification program.

Adopted this 09th day of June 2020.


ATTY. MARICHELLE D. DE GUZMAN
Board Secretary VI

Attested by:


SEC. ISIDRO S LAPEÑA, PhD, CSEE
Designated Chairperson, TESDA Board
Director General, TESDA

(Original Signed)
USEC. RENATO L. EBARLE
Department of Labor and Employment

(Original Signed)
USEC. DIOSDADO M. SAN ANTONIO
Department of Education

(Original Signed)
USEC. RAFAELITA M. ALDABA
Department of Trade and Industry

(Original Signed)
USEC. BRENDA L. NAZARETH-MANZANO
Department of Science & Technology

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**APPROVING AND PROMULGATING THE TRAINING REGULATIONS FOR
AQUACULTURE (GROW-OUT OPERATION) NC II**

(Original Signed)
MR. ISIDRO ANTONIO C. ASPER
Board Member, Labor Sector

(Original Signed)
ATTY. BAYANI G. DIWA
Board Member, Labor Sector

(Original Signed)
MR. RENE LUIS M TADLE
Board Member, Labor Sector

(Original Signed)
MR. RAMON R. DE LEON
Board Member, Labor Sector

(Original Signed)
MR. ROGELIO J. CHAVEZ, JR.
Board Member, Labor Sector

(Original Signed)
DR. LEONIDA BAYANI-ORTIZ
Board Member, Employer Sector

(Original Signed)
PROF. RANDOLPH I. NONATO
Board Member, Employer Sector

AMENDMENTS ON TRAINING REGULATIONS FOR AQUACULTURE (GROW –OUT OPERATIONS) NC II

Existing Promulgated Training Regulations (Board Resolution No. 2004-21)	Amendments
Qualification Title	
AQUACULTURE NC II	AQUACULTURE (GROW-OUT OPERATION) NC II
SECTION 1 – Definition of the Qualification	
The AQUACULTURE NC II Qualification consists of competencies that a person must achieve to assist in aquaculture operations, prepare and maintain aquaculture facilities, operate fish nursery, perform fish or shrimp grow-out operations and grow seaweeds.	The AQUACULTURE (GROW-OUT OPERATION) NC II Qualification consists of competencies that a person must achieve to conduct site selection and pond preparations, perform nursery operations, produce aquaculture commodities and carry out post - production activities. This also includes competencies to grow commercially viable aquaculture species in brackish, freshwater and marine ecosystems, except tilapia and seaweed.
Job Title	
AQUACULTURE NC II A person who has achieved this Qualification is competent to be: <ul style="list-style-type: none"> • Hatchery farm worker • Aquaculture Farm Caretaker • Aquaculture Farm Aide • Aquaculture Facilities Repair and Maintenance Worker • Fish Nursery Worker • Shrimp and Fish Grow Out Worker • Prawn Farm Cultivator 	AQUACULTURE (GROW-OUT OPERATION) NC II A person who has achieved this Qualification is competent to be: <ul style="list-style-type: none"> • Aquaculture Worker • Grow-out Operator
SECTION 2:Competency Standards	
Basic Competencies	Amendments
<ul style="list-style-type: none"> • Participate in workplace communication • Work in a team environment • Practice career professionalism • Practice occupational health and safety procedures 	Basic Competencies <ul style="list-style-type: none"> • Participate in workplace communication • Work in a team environment • Solve/address general workplace problems • Develop career and life decision • Contribute to workplace innovation • Present relevant information • Practice occupational safety and health policies and procedures • Exercise efficient and effective sustainable practices in the workplace • Practice entrepreneurial skills in the workplace

<p><u>Common Competencies</u></p> <ul style="list-style-type: none"> • Apply safety measures in farm operations • Use farm tools and equipment • Perform estimation and basic calculation 	<p>NO Amendments</p>
<p><u>Core Competencies</u></p> <ul style="list-style-type: none"> • Conduct pre-operations aquaculture activities • Prepare and maintain aquaculture facilities • Operate fish nursery • Perform fish or shrimp grow – out operations 	<p><u>Core Competencies</u></p> <ul style="list-style-type: none"> • Conduct site selection and pond preparations • Perform nursery operations • Produce aquaculture commodities • Carry out post – production activities
<p>SECTION 3: Training Arrangements</p>	
<p>Curriculum Design:</p> <p>Nominal Training Hours:</p> <ul style="list-style-type: none"> • 1,276 Hours 	<p>Curriculum Design:</p> <p>Nominal Training Hours:</p> <p>37 Hours (Basic Competencies)</p> <p>72 Hours (Common Competencies)</p> <p><u>301 Hours</u> (Core Competencies)</p> <p>410 Hours</p> <p><u>80 Hours</u>– Supervised Industry Learning (SIL)</p> <p>490 Hours - Total</p>
<p>Course Description</p> <p>This course is designed to enhance the knowledge, desirable skills and attitudes of aquaculture NCII in accordance with industry standards. It covers core competencies in assisting in aquaculture operations, preparing and maintaining aquaculture facilities, operating fish nursery, performing fish or shrimp grow-out operations, and growing seaweeds</p>	<p>Amendments</p> <p>This course is designed to develop and enhance the knowledge, desirable attitudes and skills of an aquaculture worker to conduct site selection and pond preparations, perform nursery operations, produce aquaculture commodities and carry out post- production activities. These competencies are required to an individual who will be engaged in aquaculture, specifically grow-out operation of commercially viable aquaculture species thriving in brackish, freshwater and marine ecosystems, except tilapia and seaweed.</p> <p>To accomplish the above, all units prescribed for this qualification must be achieved.</p>

3.2 Training Delivery	Amendments <i>As per New TR Framework (TESDA BR 2014-04)</i>
<p>The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.</p> <ul style="list-style-type: none"> • The training is based on curriculum developed from the competency standards; • Learning is modular in its structure; • Training delivery is individualized and self-paced; • Training is based on work that must be performed; • Training materials are directly related to the competency standards and the curriculum modules; • Assessment is based in the collection of evidence of the performance of work to the industry required standard; • Training is based both on and off-the-job components; • Allows for recognition of prior learning (RPL) or current competencies; • Training allows for multiple entry and exit; and • Approved training programs are nationally accredited. <p>The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:</p> <ul style="list-style-type: none"> • The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations. • Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer facilitates the training delivery • Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners. 	<p>1. The delivery of training shall adhere to the design of the curriculum. Delivery shall be guided by the principles of competency-based TVET.</p> <ul style="list-style-type: none"> a. Course design is based on competency standards set by the industry or recognized industry sector; (Learning system is driven by competencies written to industry standards) b. Training delivery is learner-centered and should accommodate individualized and self-paced learning strategies; c. Training can be done on an actual workplace setting, simulation of a workplace and/or through adoption of modern technology. d. Assessment is based in the collection of evidence of the performance of work to the industry required standards; e. Assessment of competency takes the trainee's knowledge and attitude into account but requires evidence of actual performance of the competency as the primary source of evidence. f. Training program allows for recognition of prior learning (RPL) or current competencies; g. Training completion is based on satisfactory performance of all specified competencies. <p>2. The competency-based TVET system recognizes various types of delivery modes, both on-and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities and their variations/components may be adopted singly or in combination with other modalities when designing and delivering training programs:</p> <p>2.1 School/Institution- Based:</p> <ul style="list-style-type: none"> • Dual Training System (DTS)/Dualized Training Program (DTP) which contain both in-school and in-industry training or fieldwork components. Details can be referred to the Implementing Rules and Regulations of the DTS Law and the TESDA Guidelines on the DTP; • Distance learning is a formal education process in which majority of the instruction

- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.
- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, or audio, video or computer technologies.
- Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, audio, video, computer technologies or other modern technology that can be used to facilitate learning and formal and non-formal training. Specific guidelines on this mode shall be issued by the TESDA Secretariat.

- Distance learning may employ correspondence study, audio, video, computer technologies that can be used to facilitate learning and formal and non-formal training. Specific guidelines on this mode shall be issued by the TESDA Secretariat.
- The classroom-based or in-center instruction uses of learner-centered methods as well as laboratory or field-work components.

2.2 Enterprise-Based:

- **Formal Apprenticeship** – Training within employment involving a contract between an apprentice and an enterprise on an approved apprenticeable occupation.
- **Informal Apprenticeship** - is based on a training (and working) agreement between an apprentice and a master craftsperson wherein the agreement may be written or oral and the master craftsperson commits to training the apprentice in all the skills relevant to his or her trade over a significant period of time, usually between one and four years, while the apprentice commits to contributing productively to the work of the business. Training is integrated into the production process and apprentices learn by working alongside the experienced craftsperson.
- **Enterprise-based Training**- where training is implemented within the company in accordance with the requirements of the specific company. Specific guidelines on this mode shall be issued by the TESDA Secretariat.

2.3 Community-Based

- Short term programs conducted by non-government organizations NGOs, LGUs, training centers and other TVET providers

	<p>which are intended to address the specific needs of a community. Such programs can be conducted in informal settings such as barangay hall, basketball courts, etc. These programs can also be mobile training program (MTP)</p>
3.3 Trainee Entry Requirements	Amendments
<p>Trainees or students wishing to enroll in this course should possess the following requirements:</p> <ul style="list-style-type: none"> • Able to read and write • With good moral character; • Ability to communicate, both oral and written • Physically fit and mentally healthy as certified by a Public Health Officer 	<p>Trainees or students who would like to enroll in this course should possess the following requirements:</p> <ul style="list-style-type: none"> • Basic communication skills • Basic mathematical skills

3.4 List of Tools, Equipment and Materials

Recommended list of tools, equipment and materials for the training of 25 trainees for Aquaculture NC II:

TOOLS		EQUIPMENT		MATERIALS	
QTY		QTY		QTY	
5 pcs	DO meters	1	Surveying equipment	1	Manpower Resources
5 pcs	Flow rate meter	1	generator	1	Learning Materials
25 pcs	Laboratory thermometer	2	Microscope	1	R.A. 8550
10 pcs	Shovel	1	Plankton counter	1	Reference book
5 pcs	Water depth gauge	1	Welding machine	1	Instructional manual
5 pcs	Digging blades	5	G.I. pipe	1	Reference book
5 sets	Electrical tools	2	Puddle wheel	1	Brochures
	Lumber	1	Water pump	1	Local map
2 sets	Masonry tools	1	Hauling containers	1	Tide calendar
		1	oxygen tank	1	Model of different pond design
2 sets	Carpentry tools	1	Storage/tool cabinet	1	List of species for cultivation
5 pcs	Cultivator / rake	1	Feed storage	1	List of culture system
	Lime	1	filled oxygen tank	1	Drawing materials
	Net	1	Chilling tank	1	Tide indicators
	P.E. rope	1	Guard house	1	Copy of financial statement
10 pcs	Pail, plastic	1		1	Lay-out plan
5 pcs	Running board			1	List of dealers
5 pcs	Weighing scale			1	Price list
10 pcs	Welding rod			1	Production size
5 pcs	Cutting tools			1	
5 rolls	Tying materials			1	

5	Floats		Supplies and Materials	1	Illustration of different design and shape of pen and cages
25 pcs	Safety shoes	5	Live specimens	1	List of framing materials
25 pcs	Pencil	5	Normal fish, samples	1	List of materials available in the area
25 pcs	Ruler	5	Infected fish,	1	List of farm facilities

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5 rolls	Tracing paper	1 gal.	samples Therapeutic chemicals	1	Supporting documents for procurements
5 pcs	Sinkers	1 bott.	disinfectants	1	Construction manual
5 pcs	Eckman Dredge	2 gal	cleaning materials	1	Installation manual
5 pcs	Secchi disc	5 pcaks	Bag net	1	Instructional manual for aerators/agitators
5 sets	Water quality test kit	5	Scoop net	1	Micro- laboratory for feed analysis

Amendments

Recommended list of tools, equipment and materials for the training of 25 trainees for Aquaculture (Hatchery Operation) NC II.

Up-to-date tools, materials, and equipment of equivalent functions can be used as alternatives. This also applies in consideration of community practices and their availability in the local market.

A. FULL QUALIFICATION

TOOLS	
QTY	DESCRIPTION
5 pcs.	Scythe
5 pcs.	Digging blade
5 pcs.	Bolo
5 pcs.	Hammer
5 pcs.	Wheel borrow
5 pcs.	Thumper
5 pcs.	Scissor
5 pcs.	Saw
5 pcs.	Steel Tape
5 pcs.	Try Square
5 pcs.	Chisel
5 pcs.	Shovel
5 pcs.	Rake
5 pcs.	Sickle
5 pcs.	Screwdrivers
5 pcs.	Fliers
5 pcs.	Wrench
5 pcs.	Ruler
5 pcs.	Caliper
5 pcs.	Backpack Sprayer
5 pcs.	Calculator
5 units	Grader
5 pcs.	Knife
5 pcs.	Abacus
5 pcs.	Adjustable range
5 pcs.	Crab trap
5 pcs.	Transfer crate (70kg capacity)

EQUIPMENT	
QTY	DESCRIPTION
2 units	Weighing scale
5 pcs.	pH meter
5 pcs.	Refractometer
10pcs.	Thermometer
5 pcs.	Hydrometer
3 units	Oxygen tank with Oxygen hose
5 pcs.	Portable aerators
1 unit	Standby generator
	PPEs
25pairs	Gloves
25pairs	Boots
25pcs.	Masks
25pcs.	Long Sleeve Shirt
25pcs.	Hat
1 unit	Chilling tank (500L)
1 unit	Chilling boat*
1 unit	Truck*
1 unit	Pump boat*

5 pcs	Soil tester	5	Gill net	1	CD
5 pcs	Slidesmith cover		ce	1	Slides
10 pcs	Beaker	-	Drying materials	1	List of feeds supplier / producer
15 pcs	Netting needle	-	coconut leaves	1	Feed consumption chart
5	Water current meter	5	old fish nets	1	vide calendar
1 kilo	Common nails	-	Specimen of different variety of seaweeds	1	Activity sheet
1 roll	String	1 gal	Formaldehyde	1	Pictures on seaweeds
5	Calculator	1 gal	Therapeutic chemicals	1	Posters / charts
			fingerlings	1	Pamphlet
5	Feed container	1 gal	Chlorine	1	List of potential buyers
5 pcs	Plastic basin	10 pcs	Bamboo pole	1	Questionnaires
5 pcs	Snakel	10 pcs	Bamboo slats / sheet	1	Purchase order forms
5 pcs	Thermometer (lab.)	1 sack	Feeds		
25 pcs	Hand gloves	1 sack	fertilizer / lime		
5	Mangrove stakes	1 kl	Soap (detergent)		
	Monofilament nylon		Seedlings		
10 pcs	Utility basket				
25 pcs	Pen				
25 pcs	Face mask				
25 pcs	Marker				
5 packs	Plastic bags				
5	Anchors/sinkers				
25 pcs	Bolo				
5 rolls	Cast net				

25 pcs	Clean sack				
5 pcs	Container				
5 pcs	Current meter				
5 pcs	Dissecting board				
5 sets	Dissecting tools				
5	Dissolved oxygen meter				
5 sets	Drawing instrument				
25 pcs	Face mask				
5 pcs	Fish grader				
10 pcs	Flashlights				
10 pcs	Forcep				
5 pcs	Hammer				
5 pcs	Harvesting containers				
25 pcs	Lab. gown				
5 pcs	Meter gauge				
1 roll	Moving line				
1 roll	Net				
25 pcs	P.E. bag				
25 pcs	P.L. bags				
5 pcs	Pecchi disc				
25 pcs	Personal safety gadgets				
5 pcs	Refractometer				
5 pcs	Ring/vortex blower				
5 packs	Rubber band				
5 pcs	Salinometer				
5 pcs	Saw				
5 pcs	Scalpel				
25 pcs	Scissor				
5 pcs	Scoop net				
5 pcs	Seine net				
5 pcs	Sinker				
10 pcs	Spatula				
5 pcs	Steel				
5 pcs	Steel brush / Plastic brush				
5 pcs	Styrofoam boxes				
5 pcs	Suspension net				
1 kl	Tea seed powder				

1 unit	Paddle boat*
1 unit	Conditioning cage (10X10m)
1 unit	Transfer cage(5X5X2m)
3 units	Oxygen regulator
1 pc.	DO meter
1 unit	Harvesting raft*
2 unit	Sorting table

MATERIALS	
QTY	DESCRIPTION
1-Li.	Fluids
1-Li.	Lubricants
4 sacks	Organic and inorganic fertilizers
2 sacks	Lime
Bfts	Lumber
1 pc.	Cast Nets
2 packs	Vegetable Seeds
4 pcs.	Hapa nets of different sizes
5 pcs.	Bamboo poles
rolls	Ropes of different sizes
1L	pesticides
100 pcs	Plastic bag (18"X25"X.03")
5 boxes	Rubber band
30 pcs	Ice (2"X10")
125000 pcs	Fry (size 3 to 5)
750 pcs	Fingerlings (20 to 50 grams)
25 pcs	Basin (30L capacity-white)
25 pcs	Pail (10L)
25 pcs	Dipper (1L)
25 pcs	Scooper
1pc	Scoop net
1 pc	Hapa net (10X15X3m)
500L	Packing water
1 pc	Polynet (size 17-10X10X5m)
4pcs	B- net (5X5X5m)
10 roll	Straw
8 pcs	Styrofoam (60L)
150kg	Fish
25 kg	Shellfish
60 kg	Shrimp
20 kg	Crab
1 roll	Plastic straw
5 pcs	Crate (25kg capacity)
25 pcs	Pail (10L)
25 pcs	Basin (30L)
25 pcs	Dipper (1L)
1 pc	Scoop net (small)
1 pc	Lift net (big)
2 pcs	Cast net
4 pcs	Feed tray
30 pcs	Ice for sampling (2"X10"-)
25 pcs	Styrofoam (50kg capacity)
2 pcs	Spade
2 blocks	Crushed ice for harvesting
1 pc	Ice box (250 kg capacity)
10 pcs	Fish plastic liner
2 pcs	Box (medium size)
200 kg (2 blocks)	Crushed ice
5 pcs	Boxes (50 kg)
5 pcs	plastic liner
5 pcs	Sorting crates
2 pcs	pail(10 L)
5 pcs	Labeling materials
25 pcs	Log book/record book
25 pcs	Pencil
25 pcs	Ballpen

B. PER COC

UC 1: OPERATE AQUACULTURE NURSERY

TOOLS		EQUIPMENT		MATERIALS	
Qty.	Description	Qty.	Description	Qty.	Description
5 pcs.	Scythe	1 pc.	Water Pump	1 rim & 25 pcs. respectively	paper and pencil
5 pcs.	Digging blade	1 unit	Electric Water Pressurized Pump	1-Li.	Fluids
5 pcs.	Bolo	2 pc.	Fire extinguisher	1-Li.	Lubricants
5 pcs.	Hammer	1 unit	Grass Cutter	4 sacks	Organic and inorganic fertilizers
5 pcs.	Wheel borrow	1 unit	Aerator	2 sacks	Lime
5 pcs.	Thumper	1 unit	Rotavator	bfts	Lumber
5 pcs.	Scissor	2 units	Weighing scale	1 pc.	Cast Nets
5 pcs.	Saw	5 pcs.	pH meter	2 packs	Vegetable Seeds
5 pcs.	Steel Tape	5 pcs.	Refractometer	4 pcs.	Hapa nets of different sizes
5 pcs.	Try Square	10pcs.	Thermometer	5 pcs.	Bamboo poles
5 pcs.	Chisel	5 pcs.	Hydrometer	rolls	Ropes of different sizes
5 pcs.	Shovel	1 tank	Medical oxygen	1L	pesticides
5 pcs.	Rake	5 pcs.	Portable aerators	100 pcs	Plastic bag (18"X25"X.03")
5 pcs.	Sickle	1 unit	Standby generator	5 boxes	Rubber band
5 pcs.	Screwdrivers		PPEs	30 pcs	Ice (2"X10")
5 pcs.		25pairs	Gloves	125000 pcs	Fry (size 3 to 5)
5 pcs.	Fliers	25pairs	Boots	750 pcs	Fingerlings (20 to 50 grams)
5 pcs.	Wrench	25pcs.	Masks	25 pcs	Basin (30L capacity-white)
5 pcs.	Ruler	25pcs.	Long Sleeve Shirt	25 pcs	Pail (10L)
5 pcs.	Caliper	25pcs.	Hat	25 pcs	Dipper (1L)
5 pcs.	Backpack Sprayer	3 units	Oxygen tank with Oxygen hose	25 pcs	scooper
5 pcs.	Calculator	1 unit	Chilling tank (500L)	1pc	Scoop net
5 pcs.	Grader	1 unit	Truck*	1 pc	Hapa net (10X15X3 m)
5 pcs.	scissor	1 unit	Pump boat*	500L	Packing water
5 pcs.	knife	1 unit	Conditioning cage (10X10m)	1 pc	Polynet (size 17-10X10X5 m)
5 pcs.	Abacus	3 units	Oxygen regulator	4pcs	B- net (5X5X5m)
5 pcs.	Adjustable range	1 pc.	DO meter	1 roll	straw
				8 pcs	Styrofoam (60L)

UC 2: CONDUCT GROW-OUT OPERATION

TOOLS		EQUIPMENT		MATERIALS	
Qty.	Description	Qty.	Description	Qty.	Description
5 pcs	bolo	1 unit	Weighing scale(50kg)	150kg	Fish
5 pcs	Crab trap	1 unit	Weighing scale (2kg)	25 kg	Shellfish
5 pcs	Transfer crate (70kg capacity)	1 unit	Paddle boat*	60 kg	Shrimp
5 pcs	knife	2 units	Chilling tank*	20 kg	Crab
5 pcs	Pair of scissors	1 unit	Chilling boat*	1 roll	Plastic straw
5 pcs	Shovel	1 unit	Transfer cage(5X5X2 m)	5 pcs	Crate (25kg capacity)
5 pairs	Scissor	1 unit	Harvesting raft*	25 pcs	Pail (10L)
5 pcs	calculator	2 units	Motorized boat*	25 pcs	Basin (30L)
		1 unit	Sorting table	25 pcs	Dipper (1L)
		1 unit	Transport vehicle*	1 pc	scoop net (small)
		2 unit	Chilling tank	1 pc	Lift net (big)
		2 unit	Weighing scale with 1 gram calibration	2 pcs	Cast net
		2 unit	Weighing scale with 10 grams calibration with kg capacity	4 pcs	Feed tray
		2 unit	Sorting table	30 pcs	Ice for sampling (2"x10"-)
			PPEs	25 pcs	Styrofoam (50kg capacity)
		25 pcs	long sleeve	2 pcs	Spade
		25 pcs	gloves	2 blocks	Crushed ice for harvesting
		25 pcs	rubber boots	1 pc	Ice box (250 kg capacity)
		25 pcs	Mask	10 pcs	Fish plastic liner
		25pcs	hats	2 pcs	Box (medium size)
				5 rolls	Straw
				200 kg (2 blocks)	Crushed ice
				5 pcs	Boxes (50 kg)
				5 pcs	plastic liner
				5 pcs	Sorting crates
				2 pcs	pail(10 L)
				5 pcs	Labeling materials
				25 pcs	Log book/record book
				25 pcs	Pencil
				25 pcs	Ballpen

NOTE: Access to and use of equipment /facilities can be provided through cooperative arrangements or MOA with other partner-farms/companies

3.5 Training Facilities	Amendments																																																																																								
Based on a class size of 25 students/trainees	Based on a class size of 25 students/trainees																																																																																								
<table><tr><th>SPACE REQUIREMENT</th><th>SIZE IN METERS</th><th>AREA IN SQ. METERS</th><th>TOTAL AREA IN SQ. METERS</th></tr><tr><td>A. Building (permanent)</td><td></td><td></td><td>170.30</td></tr><tr><td>• Student/Trainee Working Space</td><td>2.00 x 2.00 per student/trainee</td><td>4.00 per student</td><td>100.00</td></tr><tr><td>• Learning Resource Center</td><td>3.00 x 5.00</td><td>15.00</td><td>15.00</td></tr><tr><td>• Facilities/Equipment/ Circulation Area (30% of teaching accommodation)</td><td></td><td>0</td><td>39.30</td></tr><tr><td>• Store Room</td><td>4.00 x 4.00</td><td>16.00</td><td>16.00</td></tr><tr><td>B. Experimental Fish Farm</td><td></td><td></td><td>250.00</td></tr></table>	SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS	A. Building (permanent)			170.30	• Student/Trainee Working Space	2.00 x 2.00 per student/trainee	4.00 per student	100.00	• Learning Resource Center	3.00 x 5.00	15.00	15.00	• Facilities/Equipment/ Circulation Area (30% of teaching accommodation)		0	39.30	• Store Room	4.00 x 4.00	16.00	16.00	B. Experimental Fish Farm			250.00	<div>+</div> <table><tr><th>SPACE REQUIREMENT</th><th>SIZE IN METERS</th><th>AREA IN SQ. METERS</th><th>TOTAL AREA IN SQ. METERS</th></tr><tr><td>A. Building (permanent)</td><td></td><td></td><td></td></tr><tr><td>• Student/Trainee Working Space</td><td>7.00 X 9.00</td><td>63.00 sq.m</td><td></td></tr><tr><td>• Learning Resource Center</td><td>5.10 X 6.00</td><td>30.60 sq.m</td><td></td></tr><tr><td>• Wash room</td><td>1.60 X 1.20</td><td>1.92 sq.m</td><td></td></tr><tr><td>• Comfort room</td><td>male: 2.30 X1.20 female: 2.30 X1.80 PWD: 1.60 X1.80</td><td>9.78 sq.m</td><td></td></tr><tr><td>• Facilities/Equipment/ Circulation Area (30% of teaching accommodation)</td><td>1.90 X3.00</td><td>5.70 sq.m</td><td></td></tr><tr><td>• Store Room</td><td>1.90 X4.50</td><td>8.55 sq.m</td><td>119.55 sq. m.</td></tr><tr><td>B. Experimental Aquaculture Farm</td><td></td><td></td><td></td></tr><tr><td>Earthen Ponds</td><td></td><td></td><td>10,000 sq. m.</td></tr><tr><td>Grow out area*</td><td></td><td></td><td></td></tr><tr><td>Pond</td><td></td><td></td><td></td></tr><tr><td>Pen</td><td></td><td></td><td></td></tr><tr><td>Cage</td><td></td><td></td><td></td></tr><tr><td>TOTAL Area</td><td></td><td></td><td>10,119.55 sq.m.</td></tr></table> <p>NOTE: Training Center may enter into Memorandum of Agreement (MOA) with industry for use of facilities and heavy equipment</p>	SPACE REQUIREMENT	SIZE IN METERS	AREA IN SQ. METERS	TOTAL AREA IN SQ. METERS	A. Building (permanent)				• Student/Trainee Working Space	7.00 X 9.00	63.00 sq.m		• Learning Resource Center	5.10 X 6.00	30.60 sq.m		• Wash room	1.60 X 1.20	1.92 sq.m		• Comfort room	male: 2.30 X1.20 female: 2.30 X1.80 PWD: 1.60 X1.80	9.78 sq.m		• Facilities/Equipment/ Circulation Area (30% of teaching accommodation)	1.90 X3.00	5.70 sq.m		• Store Room	1.90 X4.50	8.55 sq.m	119.55 sq. m.	B. Experimental Aquaculture Farm				Earthen Ponds			10,000 sq. m.	Grow out area*				Pond				Pen				Cage				TOTAL Area			10,119.55 sq.m.
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3.6 Trainer's Qualifications	Amendments																																																																																								
TRAINER QUALIFICATION (TQ II)	TRAINER'S QUALIFICATIONS FOR AQUACULTURE (Grow-out Operation) NC II																																																																																								
<ul style="list-style-type: none">• Must be a holder of Aquaculture NC Iil or its equivalent qualification• Must have undergone training on Training Methodology II (TM II)• Must be computer literate• Must be physically and mentally fit• *Must have at least 2 years job/industry experience• Must be a civil service eligible (for government position or appropriate professional license issued by the Professional Regulatory Commission)	<ul style="list-style-type: none">• Must be a holder of National TVET Trainer Certification (NTTC) I in Aquaculture (Grow-out Operation) NC II• Must have at least 2 years' job/industry experience within the last five (5) years																																																																																								
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Institutional Assessment is to be undertaken by the learner who enrolled in a structured learning program to determine the achievement of competencies. It is administered by the trainer/assessor at end of each learning module.	Institutional Assessment is gathering of evidences to determine the achievements of the requirements of the qualification to enable the trainer make judgement whether the trainee is competent or not competent.																																																																																								
SECTION 4 National Assessment and Certification Arrangements	Amendments																																																																																								
	Competency Assessment is the process of collecting evidence and making judgments whether competency has been achieved. The purpose of assessment is to confirm that an																																																																																								

SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

- 4.1. To attain the National Qualification of Aquaculture NC II, the candidate must demonstrate competence in all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2. The qualification of Aquaculture NC II may be attained through:
 - 4.2.1. Accumulation of Certificates of Competency (COCs) in the following areas:
 - 4.2.1.1. Prepare and maintain aquaculture facilities
 - 4.2.1.2. Operate Fish Nursery
 - 4.2.1.2.1. Conduct Pre-Operation Aquaculture activities
 - 4.2.1.2.2. Operate Fish Nursery
 - 4.2.1.3. Perform shrimp and fish grow-out operations
 - 4.2.1.3.1. Conduct Pre-operation aquaculture activities
 - 4.2.1.3.2. Perform shrimp and fish grow-out operations

Successful candidates shall be awarded Certificates of Competency (COCs) bearing the signature of the Regional Director and Chair of the recognized local industry body.
 - 4.2.2. Demonstration of competence through project-type assessment covering all required units of the qualification.
- 4.3. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.4. The following are qualified to apply for assessment and certification:
 - 4.4.1. Graduates of formal, non-formal and informal including enterprise-based training programs
 - 4.4.2. Experienced Workers (wage employed or self-employed)
- 4.5. The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and Guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

individual can perform to the standards expected at the workplace as expressed in relevant competency standards.

The assessment process is based on evidence or information gathered to prove achievement of competencies. The process may be applied to a full qualification or employable unit(s) of competency in partial fulfillment of the requirements of the national qualification.

4.1 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS

4.1.1 A National Certificate (NC) is issued when a candidate has demonstrated competence on all units of competency in a qualification with a promulgated Training Regulations.

4.1.2 A Certificate of Competency (COC) is issued by the Authority to individuals who were assessed as competent in a single unit or cluster of related units of competency.

COC 1 – OPERATE AQUACULTURE NURSERY

- 5 Conduct site selection and pond preparation –
- 6 Perform nursery operations

COC 2 – CONDUCT GROW-OUT OPERATION

- 6.1.1 Conduct site selection and pond preparation
- 6.1.2 Produce aquaculture commodities
- 6.1.3 Carry out post production activities
- 6.1.4 Upon accumulation of the COCs acquired, an individual shall be issued the corresponding National Certificate for the Qualification.
- 6.1.5 Individuals wanting to be certified will have to be assessed in accordance with the requirements identified in the relevant unit/s of competency.
- 6.1.6 The industry shall determine assessment and certification requirements for each

qualification with promulgated Training Regulations. It includes the following:

- 7 Entry requirements for candidates
- 8 Evidence gathering methods
- 9 Qualification requirements of competency assessors
- 10 Specific assessment and certification arrangements as identified by industry

10.1.1 Recognition of Prior Learning (RPL). Candidates who have gained competencies through informal training, previous work or life experiences may apply for recognition in a particular qualification through a recognition/assessment process.

10.1.2 A candidate who fails the assessment for two (2) consecutive times shall be advised to go through a refresher course before taking another assessment.

4.2 COMPETENCY ASSESSMENT REQUISITE

4.2.1 **Self-Assessment Guide.** The self-assessment guide (SAG) is accomplished by the candidate prior to actual competency assessment. SAG is a pre-assessment tool to help the candidate and the assessor determine what evidence is available, where gaps exist, including readiness for assessment.

This document can:

- a) Identify the candidate's skills and knowledge
- b) Highlight gaps in candidate's skills and knowledge
- c) Provide critical guidance to the assessor and candidate on the evidence that need to be presented
- d) Assist the candidate to identify key areas in which practice is needed or additional information

or skills that should be gained
prior to assessment

4.2.2 **Accredited Assessment Center.** Only Assessment Center accredited by TESDA is authorized to conduct competency assessment. Assessment centers undergo a quality assured procedure for accreditation before they are authorized by TESDA to manage the assessment for National Certification.

- **Accredited Competency Assessor.** Only accredited competency assessor is authorized to conduct assessment of competence. Competency assessors undergo a quality assured system of accreditation procedure before they are authorized by TESDA to assess the competencies of candidates for National Certification.