



SWINE PRODUCTION

TECHNICAL-PROFESSIONAL

Grade 12

**Three-Term Budget Of Work (BOW)
for Learning Competencies**

**TECHNICAL-PROFESSIONAL
AGRI-FISHERY BUSINESS AND FOOD INNOVATION
Grade 12**

**Three-Term Budget Of Work
For Learning Competencies**

Please note that each Tech-Pro elective is completed in one term if delivered at Grade 12.

Elective	Swine Production	
Prerequisite	None	
Performance Standard	The learners perform waste management using tools, materials, and equipment.	
Content Standard	The learners demonstrate an understanding of principles in the overview of swine production, Occupational Safety and Health Standards, and tools, materials, and equipment used in swine production according to industry standards.	
Week	Learning Competency	Suggested Activities
1	Discuss the overview of Swine Production	Overview of Swine Production Introduction to Swine Industry Competency: Discuss the overview of Swine Production - Brainstorm importance of swine industry in the Philippines - Discuss classification of swine (breeds and types: native, improved, exotic) - Identify common swine products (pork, processed meat, by-products)

Week	Learning Competency	Suggested Activities
		- Activity: Create a simple concept map of swine production system Types of Swine Production Systems - Discuss backyard vs. commercial swine production - Identify stages of production (breeding, farrowing, growing, finishing) - Compare advantages and disadvantages of each system - Group Activity: Production system comparison chart Breeds and Selection of Swine - Identify common breeds raised locally - Discuss characteristics of good breeders and market hogs - Activity: Breed identification using pictures/videos - Prepare a simple breed selection guide Basic Management Practices - Discuss housing requirements and space allowance - Identify feeding stages (starter, grower, finisher) - Create a simple swine production calendar - Reflection activity

Week	Learning Competency	Suggested Activities
	Identify the different tools, materials, and equipment in swine production and its functions in accordance with the industry standards	Tools, Materials, and Equipment in Swine Production Introduction to Swine Tools and Equipment Competency: Identify the different tools, materials, and equipment in swine production and their functions - Identify common hand tools (shovel, rake, broom, weighing scale) - Discuss uses and maintenance - Activity: Tool identification exercise Feeding and Watering Equipment - Identify feeders and drinkers - Demonstrate proper installation and cleaning - Activity: Create a feeding equipment checklist Breeding and Health Equipment - Identify equipment used in breeding (AI tools, heat lamps, farrowing crates) - Identify health tools (thermometer, syringes, disinfectants) - Demonstration: Proper handling and storage - Activity: Safety inspection checklist Equipment Maintenance and Safety - Discuss preventive maintenance procedures - Identify hazards in swine production - Demonstrate proper storage of tools

Week	Learning Competency	Suggested Activities
		Group Activity: Develop equipment maintenance schedule
2	Perform waste management in swine production	Waste Management in Swine Production Types of Swine Waste Competency: Perform waste management in swine production - Identify solid and liquid wastes - Discuss environmental and health impacts - Activity: Waste classification worksheet Waste Collection and Disposal Methods - Demonstrate proper manure collection - Discuss composting and lagoon system - Activity: Design simple waste disposal plan Biosecurity and Environmental Protection - Discuss sanitation procedures - Identify biosecurity measures - Develop farm sanitation schedule - Role-play: Implementing farm safety protocol Performance Task and Evaluation - Practical activity: - Identify tools and explain functions - Present waste management plan - Demonstrate proper sanitation procedure - Reflection and feedback session

Week	Learning Competency	Suggested Activities
Content Standard	The learners demonstrate an understanding in swine housing, breed selection, and breeding management for efficient and sustainable production of industry standards.	
Performance Standard	The learners perform breeding management of sows and boars according to industry standard.	
3	Design housing based on the selected stage of swine production	Designing Swine Housing Stages of Swine Production - Identify production stages (boar, gestating sow, farrowing sow, weaners, growers, finishers). - Discuss housing requirements for each stage. - Activity: Match production stage with correct housing type. Housing Requirements and Standards - Discuss site selection (elevated area, drainage, accessibility). - Explain space requirements per pig according to stage. - Identify materials used in swine housing (concrete, bamboo, steel pens). - Activity: Compute space requirement for 10 pigs (selected stage). Housing Design and Layout Planning - Discuss proper ventilation, flooring, roofing, and waste canal design. - Explain biosecurity considerations in housing design.

Week	Learning Competency	Suggested Activities
		- Group Activity: Draw a housing layout plan for a selected production stage. Presentation and Evaluation of Housing Design - Groups present their housing design. - Peer evaluation using checklist (space, ventilation, drainage, safety). - Revise plan based on feedback.
4	Identify the breeds of swines and consideration for breed selection in the Philippines	Breeds of Swine and Breed Selection in the Philippines Introduction to Swine Breeds - Identify common breeds raised locally such as: - Large White - Landrace - Duroc - Pietrain - Activity: Breed identification using pictures or videos. Characteristics and Uses of Breeds - Compare maternal and terminal breeds. - Identify characteristics (growth rate, litter size, feed efficiency, meat quality). - Activity: Complete breed comparison chart. Considerations for Breed Selection in the Philippines

Week	Learning Competency	Suggested Activities
		- Discuss climate adaptability, disease resistance, market demand, feed availability. - Case study: Select suitable breed for backyard vs. commercial farm. - Group Activity: Justify breed selection based on given scenario. Performance Task on Breed Selection - Individual Activity: Prepare a simple breed selection plan. - Oral presentation and feedback.
Suggested Performance Tasks	Individual Task: "The Swine Supply Chain" Concept Map Task: Create a detailed concept map or infographic that traces the swine industry from input (feed mills, breeding farms) to output (backyard/commercial farms, slaughterhouses, wet markets, and supermarkets). Include a 300-word reflection on the challenges and opportunities currently facing Filipino hog raisers. Tool Identification and Safety Match-Up Task: Complete a practical identification exam or create a digital flashcard deck (using platforms like Quizlet) featuring at least 15 essential swine tools (e.g., ear notchers, teeth clippers, castrating knives, automatic syringes, heat lamps, and farrowing crates). For each tool, write its exact function, proper sanitation protocol, and safety precautions according to industry standards. Biosecurity and Waste Audit Case Study Task: Read a provided case study of a local swine farm facing environmental complaints due to	

	odor and wastewater runoff. Write a 2-page assessment identifying the farm's failures and proposing immediate individual interventions, focusing on the proper collection and segregation of solid vs. liquid swine waste. • Blueprint of a Specialized Swine Pen • Task: Select <i>one</i> specific stage of swine production (e.g., Farrowing-Weaning, Gestating, Breeding/Boar, or Growing-Finishing). On graphing paper or using a digital CAD/drawing tool, design a detailed layout of the pen. • Requirements: Indicate exact measurements (floor space per animal according to Philippine Agricultural Engineering Standards / PAES), placement of feeders, drinkers, and the slope of the concrete flooring for drainage. • Breeds of Swine and Selection Considerations in the Philippines • Breed Matchmaking Profile • Objective: Differentiate standard commercial swine breeds and local synthetic lines found in the Philippines. • Task: Create a "Breed Catalog" profiling the major swine breeds utilized locally (Large White, Landrace, Duroc, Pietrain, and the Philippine Native Pig). For each breed, highlight its physical characteristics, maternal or paternal strengths, and adaptability to local conditions. Conclude with a scenario response: "If a local farmer has a limited budget and low-quality feed, which breed or crossbreed would you recommend and why?" Group Task: Mock Breeding Stock Selection Simulation • Objective: Apply standard selection criteria (phenotypic appraisal and performance data) to select replacement gilts or boars. • Task: The instructor will provide data sheets (including growth rate, feed conversion efficiency, litter size of parents) and photos/videos of 4 different boars or gilts. Working in groups, students must evaluate the animals based on: • Conformation (legs and feet soundness, teat count, and underline). • Production data scores.
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	• <i>Deliverable:</i> Act as a technical consulting team and present a 5-minute justification to a "client farmer" on which specific animal they should purchase to improve their herd genetics. Group Task: "Hog Industry Outlook" Panel Discussion • Task: Divide the class into groups of 4–5. Each group will choose a specific sector to represent (e.g., Department of Agriculture/Bureau of Animal Industry officers, commercial hog raisers, backyard farmers, or consumer advocacy groups). Conduct a 10-minute mock panel discussion tackling high feed costs, biosecurity levels, and repopulation efforts in the Philippines. Group Task: Equipment Inventory and Pre-Operation Check • Task: In groups, visit the school's agricultural shop or a local partner farm. Create a "Standard Operating Procedure" (SOP) video guide (3–5 minutes long) demonstrating the proper setup, inspection, operation, and post-use cleaning of a assigned piece of equipment (e.g., a pressure washer for disinfection, an automatic feeding system, or a weighing scale). • "The Ideal Swine Housing" Scale Model • In groups, consolidate your individual knowledge to build a 3D scale model (using recycled materials like cardboard, bamboo splints, and plastics) of a modern swine building suited for Philippine tropical climate. The design must highlight: • Proper roof type (e.g., monitor or semi-monitor) for maximum ventilation. • Biosecurity features (e.g., footbaths at entrances, perimeter fencing). • Integration of the waste drainage system designed in Competency 3. • Mini-Biogas or Composting System Design • Task: Groups will design a scaled model or a highly detailed blueprint of a waste management system suitable for a specific farm size. • <i>Option A:</i> Design a small-scale biogas digester system detailing the flow of manure slurry. • <i>Option B:</i> Design an organic composting setup utilizing swine manure mixed with locally available carbon sources (e.g., rice hulls or sawdust).
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	• <i>Deliverable:</i> Present the design to the class, including a computation of estimated waste output and the environmental benefits of the design.
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Performance Standard	The learners perform breeding management of sows and boars according to industry standard.
Content Standard	The learners demonstrate an understanding in swine housing, breed selection, and breeding management for efficient and sustainable production of industry standards.

Week	Learning Competency	Suggested Activities
5	• Perform breeding management of sows and boars	Breeding Management of Sows and Boars Reproductive System and Heat Detection • Discuss reproductive organs of sow and boar. • Identify signs of heat in sows. • Demonstration: Heat detection techniques (back-pressure test). Natural Mating and Artificial Insemination • Discuss proper mating age and weight. • Explain breeding ratio (boar to sow). • Demonstration/video on artificial insemination procedure. • Activity: Create breeding schedule. Care of Pregnant Sows and Boars • Discuss gestation period and pregnancy care. • Identify feeding adjustments for pregnant sows. • Develop farrowing preparation checklist.

Week	Learning Competency	Suggested Activities
		Performance Assessment - Practical activities: - Identify breed characteristics. - Present housing design. - Prepare breeding management plan. - Reflection and evaluation.
Content Standard	The learners demonstrate an understanding of health and care management practices across the stages of swine production.	
Performance Standard	The learners perform health and care management on the different stages of swine production according to industry standards.	
6	Perform health and care management on the different stages of swine production	Health and Care Management in Different Stages Overview of Swine Health Management - Identify stages: pre-breeding, gestation, farrowing, lactation, weaning, growing, finishing - Discuss importance of biosecurity and sanitation - Activity: Create a swine health calendar Disease Prevention and Biosecurity - Identify common swine diseases (bacterial, viral, parasitic) - Discuss vaccination and deworming schedules - Demonstration: Proper disinfection and sanitation procedures - Activity: Develop farm biosecurity checklist Care and Management of Breeding Stock

Week	Learning Competency	Suggested Activities
		• Discuss proper feeding and body condition scoring of sows and boars • Identify signs of illness • Demonstration: Proper restraint and temperature taking • Activity: Prepare sow and boar care plan Care During Gestation • Discuss gestation management practices • Identify nutritional requirements of pregnant sows • Prepare gestation monitoring record sheet • Group discussion and reflection
	• Perform farrowing care activities	Unlocking of Difficult Terms (10 Minutes) Learners match terms with their meanings: • Farrowing • Colostrum • Navel cord • Stillbirth • Piglet processing • Creep area Discussion Proper • Importance of Farrowing Care • Reduces piglet mortality • Maintains sow health • Improves swine production efficiency • Prevents diseases

Week	Learning Competency	Suggested Activities
		• Signs of Approaching Farrowing • Enlarged udder • Restlessness • Nest-building behavior • Swollen vulva • Milk secretion • Tools and Materials Used Examples: • Clean towels • Gloves • Iodine solution • Heat lamp • Weighing scale • Record notebook • Disinfectant • Farrowing Care Procedures Before Farrowing • Clean and disinfect farrowing pen • Prepare equipment and supplies • Observe sow behavior During Farrowing • Assist weak piglets • Ensure piglets breathe properly • Keep piglets warm

Week	Learning Competency	Suggested Activities
		• Monitor sow condition After Farrowing • Cut and disinfect umbilical cord • Assist piglets in suckling colostrum • Count piglets born alive and dead • Clean the farrowing area • Record farrowing data • Safety and Sanitation Practices • Proper handwashing • Wearing PPE • Proper waste disposal • Disinfection procedures
7	• Discuss lactating management practices of sows and suckling	Lactating Management Practices • Discuss feeding management of lactating sows • Identify importance of colostrum intake • Monitor piglet growth and health • Activity: Compute daily feed requirement of lactating sow Monitoring Sow and Piglet Health • Identify problems during lactation (mastitis, scouring) • Demonstration: Checking udder health • Group Activity: Develop lactation care plan
	• Manage weaning of piglets	Weaning, Growing, and Finishing Management

Week	Learning Competency	Suggested Activities
		Weaning Management Manage weaning of piglets • Discuss proper weaning age and procedures • Identify stress reduction practices • Demonstration: Proper separation of piglets • Activity: Prepare weaning schedule Post-Weaning Care • Identify feeding program for weaners • Discuss housing adjustments after weaning • Monitor growth rate • Activity: Compute feed conversion ratio (simple computation)
Suggested Performance Tasks	Individual Task: • "Heat Detection and Semen Evaluation" Portfolio • Task: Create a step-by-step diagnostic guide for heat detection. The guide must detail the physical and behavioral signs of a sow in standing heat (e.g., swollen vulva, mucous discharge, lordosis/standing response). Additionally, write an analytical report analyzing a mock semen evaluation laboratory sheet, identifying whether a sample passes or fails based on sperm motility, concentration, and morphology standards. • "The First 24 Hours" Emergency Protocol • Task: Develop a personal "Farrowing Quick-Reference Manual." The student must write out precise, individual action plans for three critical events: resuscitating a non-breathing but alive newborn piglet, handling a retained placenta in the sow, and intervening during a breech	

Week	Learning Competency	Suggested Activities
	presentation (dystocia). • The Herd Vaccination and Medication Calendar • Task: Create a comprehensive, color-coded vaccination and deworming calendar from birth to market/breeding age. The calendar must specify the timing, dosage, and route of administration (Intramuscular, Subcutaneous, or Oral) for vital interventions, including Iron injections, Mycoplasma, Hog Cholera, and PRRS vaccines. • Competency 4: Discuss Lactating Management Practices of Sows and Suckling • Individual Task: Nutritional and Body Condition Score (BCS) Tracker • Objective: Manage the high metabolic demands of lactating sows to maximize milk output and prevent excessive weight loss. • Task: Develop a detailed feeding schedule and monitoring guide for a lactating sow nursing a litter of 12 piglets. The student must outline how to gradually scale feed intake post-farrowing (ad libitum targeting 5–6 kg/day) and include a visual guide on determining the sow's Body Condition Score (BCS) to adjust feed intake accordingly. Group Task: "Colostrum to Creep Feed" Strategy Presentation • Objective: Optimize suckling piglet nutrition and gut development prior to weaning. • Task: Groups will create a 10-minute technical presentation comparing two vital practices: Split-Nursing (ensuring small piglets get adequate colostrum in the first 12 hours) and Creep Feeding (introducing highly digestible solid feed at 7–10 days old). The presentation must calculate the economic and survival benefits of these interventions using local industry performance benchmarks. • The Weaning Stress Mitigation Checklist	

Week	Learning Competency	Suggested Activities
	• Task: Write a comprehensive Standard Operating Procedure (SOP) for the day of weaning. The student must justify why specific practices are done, such as: leaving the piglets in the farrowing pen while moving the sow, adjusting nursery room temperatures upward to 28°C–30°C, and managing restricted feeding during the first 24–48 hours to prevent post-weaning diarrhea. Group Tasks • Mock Artificial Insemination (AI) Simulation • Task: Using a life-sized swine breeding model (or simulated setup), groups of 3–4 will perform a mock AI procedure. • One student will simulate the presence of a teaser boar to stimulate the sow. • Another will perform the sanitary cleaning of the vulva. • A third student will demonstrate the correct insertion angle of the AI catheter (angled upward at 30–45 degrees to avoid the bladder, then locked counter-clockwise into the cervix). • Farrowing Unit Setup and Brooder Calibration • Task: In teams, completely prepare a designated farrowing crate. The team must clean, disinfect, and set up the creep area or brooder box. They will install heat lamps and use a thermometer to calibrate the zone to exactly 32°C–35°C for the incoming litter, while ensuring the sow's area remains well-ventilated and cool (18°C–22°C). • Clinical Signs and Biosecurity Triaging Simulation • Task: The instructor will assign each group a "Sick Pen Scenario" featuring data and video clips of hogs exhibiting specific symptoms (e.g., high fever and skin blotching for African Swine Fever; coughing and thumping for Enzootic Pneumonia; scouring for Colibacillosis). • The group must act as a farm health task force: diagnose the likely ailment, write a	

Week	Learning Competency	Suggested Activities
	bio-containment plan, and demonstrate the correct personal protective equipment (PPE) and footbath protocols needed to treat the pen. • Nursery Pen Sorting and Grading Floor Exercise • Task: Working in a real or simulated nursery facility, groups will be given a mixed "litter" of simulated weanlings varying in weight and health status. The group must physically sort and grade the animals into uniform pens based on: • Size/Weight (Heavy, Medium, Light). • Sex (if applicable). • Health status (creating a dedicated "hospital pen" for unthrifty or runty piglets).	
Performance Standard	The learners perform health and care management on the different stages of swine production according to industry standards.	
Content Standard	The learners demonstrate an understanding of health and care management practices across the stages of swine production.	
8	• Perform proper care and management of growing and finishing phase of pigs	Introduction to Growing and Finishing Pig Management Specific Learning Activities 1. Picture Analysis The teacher shows pictures of: • Growing pigs • Finishing pigs • Proper and improper pig management 2. Think-Pair-Share Activity

Week	Learning Competency	Suggested Activities
		Question: "Why is proper management important during the growing and finishing stages?" Procedure: • Think individually • Pair with a classmate • Share answers to the class 3. Vocabulary Matching Activity Match the terms with their meanings: • Grower • Finisher • Feed conversion • Ventilation • Biosecurity Feeding Management of Growing and Finishing Pigs 1. Feed Identification Activity Learners observe actual feed samples or pictures and identify: • Starter feed • Grower feed • Finisher feed • Supplements 2. Feed Computation Exercise Given:

Week	Learning Competency	Suggested Activities
		• Pig weight • Recommended feeding rate Learners compute daily feed requirement. Example: "If a pig requires 3 kg feed/day, how much feed is needed for 10 pigs?" 3. Housing, Sanitation, and Waste Management Learners inspect a pig pen using a checklist: • Ventilation • Drainage • Flooring • Cleanliness • Space allowance 4. Pen Cleaning Demonstration • Sweeping manure • Washing floors • Applying disinfectant 5. Waste Segregation Activity Learners classify waste into: • Biodegradable • Non-biodegradable 6. Health Care and Disease Prevention

Week	Learning Competency	Suggested Activities
		Specific Learning Activities 1. Symptom Identification Activity Teacher shows pictures/videos of pigs with diseases. Learners identify symptoms such as: • Coughing • Diarrhea • Skin lesions • Loss of appetite
Performance Standard	The learners perform health management, harvesting and post harvesting, record keeping and marketing in swine production according to industry standard.	
Content Standard	The learners demonstrate an understanding of Health Management, Record Keeping, Harvesting and post-harvest Management and Marketing in swine production in compliance with industry requirements.	
9	• Perform health management in swine production with the supervision of veterinarians	Introduction to Swine Health Management • Explain the importance of health management in swine production. • Identify common swine diseases and their symptoms. • Recognize the role of veterinarians in swine health management. Vocabulary Matching Activity • Vaccination • Biosecurity • Deworming • Isolation

Week	Learning Competency	Suggested Activities
		- Antibiotics - Diagnosis Discussion Proper - Importance of swine health management - Common diseases in pigs - Causes of diseases - Role of veterinarians - Importance of early disease detection
	Record activities in swine production	1. Explain the importance of record keeping in swine production. 2. Identify the different records used in swine production. 3. Demonstrate proper recording of swine production activities. 4. Prepare accurate and organized swine production records. 5. Appreciate the value of accurate farm records in decision-making and Importance of Record Keeping - Monitors pig performance - Tracks expenses and income - Helps in farm decision-making - Monitors health status - Serves as farm reference Types of Swine Production Records

Week	Learning Competency	Suggested Activities
		Feeding Record • Amount of feeds given • Feeding schedule • Feed consumption Health Record • Vaccination • Deworming • Medication • Disease occurrence
10	• Perform harvesting and post-harvesting activities of swine production	Introduction to Swine Harvesting • Picture analysis of market-ready pigs • Class discussion on harvesting activities • Identify characteristics of market-ready pigs • Question and answer activity • Short quiz Proper Handling and Harvesting of Pigs • Demonstration of proper pig handling • Practice guiding and loading pigs • Group activity: Steps in harvesting pigs • Role-playing on pig harvesting • Reflection sharing Post-Harvest Activities • Discussion on post-harvest handling

Week	Learning Competency	Suggested Activities
		• Arrange the steps in post-harvest activities • Video viewing on meat inspection and storage • Group reporting • Worksheet activity Sanitation and Record Keeping • Demonstration on cleaning and disinfection • Waste segregation activity • Prepare sample harvesting records • Poster making on meat safety • Group discussion Practical Application and Presentation • Group demonstration of harvesting procedures • Practical activity on sanitation practices • Role-playing of harvesting and post-harvest activities • Group presentation of harvesting plan • Reflection writing
	• Perform marketing in swine production	Introduction to Marketing in Swine Production • Learning Activities • Picture analysis of swine products and markets • Discussion on the importance of marketing • Identify swine products that can be sold • Brainstorming on possible buyers • Short quiz Types of Buyers and Market Opportunities

Week	Learning Competency	Suggested Activities
		• Discussion on types of buyers: • Retailers • Wholesalers • Consumers • Meat vendors Pricing and Selling of Swine Products • Discussion on pricing of swine products • Compute simple selling prices and profit • Role-playing on buying and selling • Prepare simple price tags and product labels • Worksheet activity Promotion and Customer Service • Discussion on proper customer service • Create simple advertisements/posters • Demonstration on proper communication with buyers Group activity on product promotion • Sharing of marketing strategies • Day 5 – Practical Application and Presentation
Suggested Performance Tasks	Individual Task: • Prepare a daily feeding schedule for growing and finishing pigs. • Identify proper feeds for each growth stage. • Perform cleaning and sanitation of pig pens.	

- Fill out a sample health monitoring checklist.
- Identify tools and materials used in health management.
- Compute feed consumption and expenses.
- Prepare a simple sales record.
- Prepare sample harvesting records.
- Demonstrate proper sanitation practices.
- Write a reflection on proper post-harvest handling.
- Conduct a simple market survey.
- Write a reflection about the importance of marketing.

Group Tasks

- Demonstrate proper feeding and watering practices.
- Create a housing management plan for growing pigs.
- Role-play proper pig handling and care.
- Role-play a veterinary visit in a swine farm.
- Demonstrate proper biosecurity practices.
- Create a complete swine farm recording system.
- Role-play farm record reporting.
- Prepare sample health and vaccination records.
- Demonstrate proper pig handling during harvesting.
- Role-play harvesting and transport procedures.
- Create a flow chart of post-harvest activities.
- Role-play buying and selling of swine products.
- Create advertisements or promotional posters