

NTC – GTLE
CONTENT FOR GENERAL AGRICULTURE

CONTENT AREAS	COMPETENCIES	DESCRIPTIVE STATEMENTS
1. INTRODUCTION TO AGRICULTURE	1. Appreciate the role of agriculture in National Development.	1. Define basic agricultural terminologies and concepts (e.g., Fisheries, Crop Science, etc.). 2. State the branches of agriculture (i.e., Crop Science, Animal husbandry, Soil Science and Fisheries Science). 3. Discuss the role of agriculture (e.g., Fisheries, Crop Science, etc.) in national development. 4. Analyse the inter-dependency of agriculture and industry. 5. Discuss the challenges of Agriculture.
	2. Develop interest in the careers in agriculture.	1. Outline the on-farm and off-farm careers in agriculture (i.e., Crop Science, Animal husbandry, Soil Science and Fisheries Science).
	3. Appreciate the challenges in Crop Science, Animal husbandry, Soil Science and Fisheries as practiced in Ghana.	1. Identify the various land tenure systems in Ghana and West Africa.
		2. Justify the effects of climate change on agriculture and food security.
		3. Explain what climate SMART Agriculture is about.
	2. SOIL USES AND MANAGEMENT	1. Appreciate the origin and nature of soil.
2. Outline the factors of soil formation.		
3. Explain the role of living organisms in soil formation.		
4. Analyse the physical and chemical properties of the soil.		
2. Recognize and appreciate the effect of the methods of land preparation practices on the environment.		1. Outline the different types of indigenous and mechanized methods of land preparation on the soil.
		2. Analyse the effects of indigenous and mechanized methods of land preparation on the soil.
		3. Compare the effects of indigenous and mechanized methods of land preparation on the soil.
3. Explain the concept of soil fertility and soil productivity.		1. Classify soil nutrients into micro and macro nutrients.
		2. Describe the effects of the deficiency of these nutrients on crops.
		3. Describe the Carbon and Nitrogen cycles.
	4. Demonstrate fertilizer application methods.	
	5. Explain the concept of soil fertility and its implications on productivity.	
	6. Develop a guide that will help farmers to improve soil fertility.	

	4. Explain the concept of soil erosion.	<ol style="list-style-type: none"> 1. Define soil erosion. 2. State the causes of soil erosion. 3. Outline the effects of soil erosion. 4. List the methods of controlling soil erosion.
3. CROP PRODUCTION	1. Demonstrate knowledge and understanding of the principles of crop production.	2. Describe the factors to be considered in selecting a site for crop production.
		3. Explain the term “tillage” and differentiate the types.
		4. Assess the methods of plant propagation.
		5. Describe the various Nursery Practices.
		6. Explain the cultural practices in crop production.
		1. Identify common disease infections and pest infestations in the farm.
	2. Recognize pests, diseases and weeds and their effects on crops.	2. Describe the economic importance of weeds on crop production.
		3. Classify crop diseases.
		4. Identify the various crop protection methods.
		5. Classify pests of crops.
		6. Describe the various methods of managing crop pests.
		7. Classify weeds.
3. Demonstrate knowledge and understanding of the concept of farming systems.	8. Analyse the various methods of weed control.	
	1. Define “farming system”.	
	2. State the advantages and disadvantages of farming systems.	
4. ANIMAL PRODUCTION	1. Demonstrate knowledge in Ghanaian Fisheries.	1. Classify and compare the Ghanaian Fishing Industry (e.g., Inland, Marine, Small Scale/Artisanal, Semi-industrial, Industrial Fisheries).
		2. Identify fisheries organisms/species (Taxonomy).
		3. Identify and describe fishing gears, crafts, technology and methods.
		4. State and describe harmful fishing practices.
	2. Demonstrate knowledge in Global Fisheries.	1. Describe the effect of Climate Change (Green-house effect and Global warming) on Fisheries.
		2. Describe the state of World Fisheries.
		3. Identify trans-boundary/straddling Fisheries.
	3. Demonstrate understanding of fishery management and governance.	1. Determine the effect of plastic pollution on fisheries.
		2. Describe fish population dynamics.
		3. Identify fishery policies, regulations and strategies.
		4. Explain the Institutional fishery Management, Co-management, and Traditional management systems.

		5. State the Regional and National fishery regulatory institutions.
		6. Describe fisheries management instruments (e.g., FAO Code of Conduct for Responsible Fisheries, AU-IBAR's Policy Frame and Reform Strategy on Fisheries and Aquaculture).
		7. Describe the mechanisms for fisheries monitoring, control and Surveillance.
	4. Demonstrate knowledge in how fish is adapted to their environment (Fish Biology I).	1. Describe the biology of Finfish and Shellfish (Morphology, Fish Ecology, Fishery-related Ecosystems, etc.).
	5. Demonstrate understanding in biological processes in fish biology (Fish Biology II).	1. Explain Fish Growth, Physiology (e.g., Reproduction, Respiration, etc.), Nutrition, Behaviour and Genetics.
	6. Demonstrate knowledge and understanding of the principles of animal improvement.	1. Explain the aims of principles of animal improvements.
		2. Describe the methods of animal improvement.
	7. Demonstrate knowledge and understanding of the fish farming.	1. Discuss the desirable characteristics of culture species (Finfish and Shellfish). 2. Analyze the case studies of culturable fish species (Tilapia and Oysters). 3. Formulate fish feed and feeding regimes. 4. Describe the key water quality parameters for aquaculture. 5. Describe fish harvesting methods. 6. Identify fish diseases, causes and control.
	8. Demonstrate knowledge in post-harvest activities.	1. Describe fish processing and preservation methods (Salting, Drying, Smoking, Canning, Freezing etc.). 2. Develop marketing strategy for fishery products.
	9. Demonstrate understanding of terminologies in animal nutrition.	1. Apply terminologies appropriately as used in animal nutrition.
	10. Demonstrate knowledge in factors to consider in ration formulation.	1. Discuss the factors to consider during ration formulation.
	11. Demonstrate knowledge in methods of feed preparation.	1. State and explain the methods of animal feed preparation.
	12. Demonstrate knowledge in feed storage methods.	1. Explain factors and practices that affect the quality of stored feed.

	13. Demonstrate understanding of terminologies in animal health.	1. Apply terminologies appropriately as used in animal health.
	14. Demonstrate knowledge of factors that predispose animals to diseases.	1. Distinguish between a good and ill-health animal.
	15. Demonstrate knowledge of effects of diseases, pests and parasites on animal production.	1. Discuss the main factors that predispose animals to diseases.
	16. Demonstrate knowledge in zoonotic diseases; their importance and prevention.	1. State the effects of diseases, pest and parasites on animal production
	17. Demonstrate knowledge in the use of preventive and curative health care in disease control.	1. Distinguish between preventive and curative health care practices.
	18. Demonstrate knowledge of genetic terminologies.	1. Apply genetic terminologies appropriately.
	19. Demonstrate knowledge in the objectives and benefits of animal improvement.	1. State the objectives and benefits of animal improvement.
	20. Demonstrate knowledge in nutritional and environmental factors affecting animal improvement.	1. Discuss how nutritional and environmental factors affect animal improvement.
	21. Demonstrate understanding of determination of room temperature, body temperature and respiration rate in farm animals.	1. Outline how room temperature, respiration rate and body temperature of an animal should be taken using appropriate measuring equipment.
	22. Demonstrate understanding of modification of animal environment and management practices to reduce stress.	1. Outline ways of modifying the environment to reduce stress on animals.
	23. Demonstrate knowledge in definition and characteristics of poultry.	1. Define and state the physical characteristics of poultry.

	24. Demonstrate knowledge of breeds and types of poultry.	1. State the breeds of the various types of poultry.
	25. Demonstrate knowledge in importance/role of poultry production.	1. Outline the importance of poultry production.
	26. Demonstrate knowledge in management systems of poultry production.	1. State and explain the management systems of poultry production, their advantages and disadvantages.
	27. Demonstrate knowledge in types, breeds and characteristics of pigs.	1. Distinguish the local breed from popular exotic breeds of pigs.
	28. Demonstrate knowledge of importance of pig production.	1. State the importance of pig production in Ghana's economy.
	29. Demonstrate knowledge in small and large ruminants.	1. Discuss the advantages and disadvantages of keeping small and large ruminants.
	30. Demonstrate knowledge in common breeds, distribution and characteristics of sheep, goats and cattle.	1. Discuss the differences in common breeds of sheep and goats in West Africa and world-wide.
	31. Demonstrate knowledge in the importance of ruminants.	1. Discuss the importance of ruminants.
	32. Demonstrate knowledge in management practices of ruminants.	1. State and explain the management practices carried out in sheep, goat and cattle production.
	33. Demonstrate knowledge in major problems in cattle production.	1. Discuss major problems in cattle production.
	34. Demonstrate understanding of non-traditional farm animals and their importance.	1. Distinguish between traditional and non-traditional farm animals.
	35. Demonstrate understanding of the common breeds of rabbits and grasscutters.	1. State the characteristics of indigenous and exotic breeds of rabbits and grasscutters.
	36. Demonstrate understanding of production and management practices of rabbits and grasscutters.	1. State the types of housing, feeds, sanitation, breeding, record keeping, disease and pest control in production.

	37. Demonstrate understanding of types and species used for snail farming.	1. Mention breeds of snails used in production.
	38. Demonstrate understanding of management practices in snail production.	1. State factors to consider in site selection, housing, feeding, sanitation, breeding, pest and disease control, record keeping, processing and marketing.
	39. Demonstrate understanding of breeds and types of bees in a colony.	1. State the breeds and functions of bees in a colony.
	40. Demonstrate understanding of equipment and hive management in bee keeping.	1. Mention the equipment and their functions and discuss management practices in bee keeping.
5. AGRICULTURAL ECONOMICS, AGRIBUSINESS AND EXTENSION	1. Explain the principles of agricultural economics and agribusiness.	<ol style="list-style-type: none"> 1. Apply the principles of economics, management and business in agriculture. 2. Develop agribusiness plan. 3. Describe the various modes of agricultural financing mechanisms. 4. Conduct value chain analysis in agriculture. 5. Formulate practices for ensuring food quality and safety along the chain.
	2. Explain the concept of agricultural extension.	<ol style="list-style-type: none"> 1. Describe farmer cooperatives and farmer-based organizations. 2. Analyse the various extension methods and technology transfer.
6. FARM MECHANIZATION	3. Demonstrate knowledge and understanding of the concept of farm tools, equipment and machinery.	1. Differentiate among farm tools, equipment/implements and machinery.
		2. Describe the uses of farm tools, equipment/implements and machinery.
		3. Classify farm tools.
		4. Explain the importance of maintaining farm tools.
		5. Advise farmers on the various sources and usage of farm power.
		6. Identify and describe farm survey instruments and compare their uses.

NTC – GTLE
TEST BLUEPRINT/SPECIFICATION FOR GENERAL AGRICULTURE

S/N	CONTENT AREAS	COURSE OBJECTIVES/OUTCOME (DEPTH OF KNOWLEDGE)				
		Level 1 (Recall)	Level 2 (Skill/Concept)	Level 3 (Strategic Thinking)	Level 4 (Extended Thinking)	Total
1	Introduction to Agriculture <ul style="list-style-type: none"> • Role of agriculture in National Development • Careers in Agriculture • Challenges of Agricultural (Fisheries, Crop Science, Soil Science, Animal Husbandry) developments 	2	3	4	3	12
2	Soil Uses and Management <ul style="list-style-type: none"> • Origin and Nature of Soil • Effects of methods of land Preparation Practices • Concept of Soil Fertility and Soil Productivity 	3	4	5	7	19
3	Crop Production <ul style="list-style-type: none"> • Principles of Crop Production • Effects of Pests, Diseases and Weeds on Crops • Concept of Crop Improvement 	3	5	6	6	20
4	Animal Production <ul style="list-style-type: none"> • Capture and Culture Fisheries • General farm management practices • Principles of animal improvement • Nutrition, feed selection and preparation • Diseases and health management of farm animals • Concept of fish farming, ruminants, non-ruminants and non-ruminant herbivores 	4	9	10	8	31
5	Agricultural Economics, Agribusiness and Extension <ul style="list-style-type: none"> • Principles of Agricultural Economics and Agribusiness • Concept of Agricultural Extension 	2	3	3	5	13
6	Farm Mechanization <ul style="list-style-type: none"> • Concept of Farm Tools, Equipment and Machinery 	1	1	2	1	5
	Total	15 %	25 %	30 %	30 %	100%