

Career and Technical Education State-Developed Competency Task List

Agricultural Production Operations, General CIP 01.0301 Competency Task List

100 Supervised Agricultural Experience

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
101	Develop short-, mid- and long-term project plans.		
102	Develop a Supervised Agricultural Experience (SAE) based upon individual interests/career goals.		
103	Maintain records to build financial literacy.		
104	Analyze records to determine strengths and areas for improvement.		

200 Agribusiness Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
201	Differentiate between types of agricultural businesses.		
202	Describe the meaning, importance and economic impact of entrepreneurship.		
203	Compare supply and demand principles in agricultural business.		
204	Identify the components of a business plan: mission, vision, SMART goals, SWOT analysis, risk assessment.		
205	Differentiate between assets and liabilities.		
206	Assess financial records associated with production and profit (cash flow, budget, net worth).		
207	Identify the purpose, components and developmental processes of marketing plans.		
208	Evaluate potential sources for credit.		
209	Identify the economic impact of Pennsylvania agricultural commodities, products and services, both domestic and international.		

Career and Technical Education State-Developed Competency Task List

300 Animal Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
301	Implement disease prevention methods (biosecurity).		
302	Identify the societal uses of animals, e.g., food, work, companionship, pleasure.		
303	Select animals for specific purposes and maximum performance based on anatomy and physiology.		
304	Utilize a Punnett square to determine the potential phenotypes and genotypes of animals.		
305	Classify animals according to taxonomy and agricultural use.		
306	Compare ruminant and monogastric digestive systems.		
307	Identify the common parts of the reproductive systems of small and large animals.		
308	Select appropriate feedstuffs for animals based on factors such as economics, digestive system, and nutritional needs.		
309	Analyze feed tags and feed labels.		
310	Identify feedstuffs as roughages, concentrates, and supplements.		
311	RESERVED		
312	Administer a treatment based on information found on a drug label.		

400 Biotechnology Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
401	Demonstrate laboratory skills as applied to biotechnology.		
402	Apply the steps of the scientific method.		
403	Identify plant and animal cell structures and functions.		
404	Explain the structure of DNA and RNA and how genotype influences phenotype.		
405	Interpret the processes utilized in converting plant material into alternative energy (biofuels and biomass).		

Career and Technical Education State-Developed Competency Task List

406	Identify the purposes of biotechnology in animal and plant production.		
407	Differentiate between applications of biotechnology in agriculture, e.g., GMOs, artificial insemination, embryo transfer, genetic engineering.		
408	Analyze the benefits and risks associated with biotechnology.		

500 Food Products and Processing Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
501	Analyze and demonstrate food handling safety.		
502	Identify the seven principles of Hazard Analysis and Critical Control Points (HACCP).		
503	Describe the process that an agricultural product takes from the producer to the consumer.		
504	Explain the importance of microbiological tests in food product processing, listing common spoilage and pathogenic microorganisms.		
505	Compare and contrast common food constituents, e.g., proteins, carbohydrates, fats, vitamins, minerals.		

600 Environmental and Natural Resource Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
601	Identify hazards associated with the outdoor environment.		
602	Select the proper response to environmental accidents.		
603	Identify on-farm conservation and preservation practices for environmental sustainability.		
604	Differentiate between renewable and nonrenewable natural resources.		
605	Differentiate between point source and nonpoint source pollution.		
606	Describe the interdependence on organisms within an ecosystem.		
607	Describe characteristics used to identify trees and shrubs.		
608	Relate production practices to the prevention of soil, water, and air pollution.		
609	Identify the stages of forest succession.		

Career and Technical Education State-Developed Competency Task List

610	Describe land use planning and growth management methods for sustainable agriculture.		
-----	---	--	--

700 Plant and Soil Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
701	Select proper personal protective equipment (PPE) based on a product label.		
702	Distinguish between the components of an integrated pest management (IPM) program, including the effects of chemicals and pesticides on the environment.		
703	Identify plant structures and functions.		
704	Describe the processes of photosynthesis, respiration, translocation, and transpiration.		
705	Identify plant nutrient requirements.		
706	Explain the environmental factors that affect the growth and development of a plant.		
707	Distinguish between sexual and asexual plant reproduction.		
708	Identify and describe physical characteristics of soil (sand, silt and clay).		
709	Test soil for pH, texture, and macronutrients.		
710	Interpret soil test reports.		
711	Describe criteria for selecting fertilizers (N, P, K).		
712	Calculate area (square feet, square yards and acreage).		
713	Analyze and interpret soil surveys.		
714	Identify the top five Pennsylvania field crops and vegetable crops by acreage.		
715	RESERVED		

Career and Technical Education State-Developed Competency Task List

800 Power, Structural and Technical Systems

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
801	Identify the dangers in an agricultural mechanic shop and workplace.		
802	Identify and demonstrate wearing of personal protective equipment (PPE).		
803	Identify and locate firefighting equipment, e.g., fire extinguisher, fire blankets.		
804	Identify, select, adjust, maintain, and use common hand tools and power tools.		
805	Use measurement devices and techniques for calculating measurement.		
806	Identify electric arc/stick welding equipment.		
807	List and identify the components and functions of major engine parts.		
808	Review operating and service manuals and schedules and conduct procedures as needed.		
809	Identify agriculture equipment and their operations, e.g., tractor, combine, baler, plow, no-till drill.		
810	Use a multimeter in electrical theory.		
811	Read and interpret local structural code information.		

900 Leadership

Item	Task	(X) Indicates Proficiency ¹	Secondary Course Cross-Walk
901	Create short- and long-term SMART (Specific, Measurable, Attainable, Realistic, Timely) goals.		
902	Participate in an intra-curricular agricultural student organization, such as FFA.		
903	RESERVED		
904	Demonstrate oral, written, and verbal skills necessary for employment.		
905	Research and participate in career opportunities in agriculture.		
906	Create a career objective and develop a plan of experiences and academics to meet the objective.		

Career and Technical Education State-Developed Competency Task List

907	RESERVED		
908	Apply concepts of conducting a meeting.		

¹ Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)