

# Agri-Business

## COMPETENCY MAP



#Prepared4PA

Pennsylvania's  
**STATE SYSTEM**  
of Higher Education



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## OVERVIEW

Pennsylvania's State System of Higher Education (PASSHE) is building industry-education-workforce collaboratives to foster stronger connections in our state's workforce ecosystem. This report on high-demand occupations is designed to articulate the competencies, skills, and credentials required by employers to inform quality, robust, industry-validated training and education programs.

## WHY COMPETENCIES MATTER

Competencies represent sets of skills, knowledge, and attitudes necessary for broad job functions. These competencies are linked to successful performance and are desirable regardless of an individual's area of expertise or role. Competencies provide a framework to help focus individuals' behavior on things that matter most to an organization and help drive success. They can provide a common way to harmonize, select, and develop talent. Competencies help define how a person should perform a role, and they are often determined in the context of workplace demands - the knowledge, and skills needed to do a specific job or task.

## HOW TO USE THESE COMPETENCY MAPS AND CAREER PATHWAYS

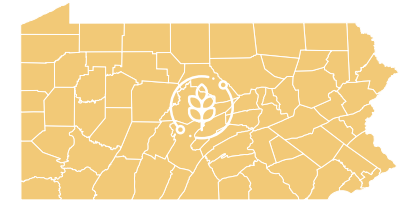
The competency maps are meant to serve as a tool for the State System and other education and training providers to develop curricula for pilot programs that meet employer needs for identified in-demand occupations. An important note about these competency maps and career pathways is that they are not an exact science - these competency maps are meant to serve as tools for what is generally required for each occupation. Requirements for competencies vary based on many factors such as employer size, preference, location, and specific need.



CAEL collaborated with the State System to develop the following Competency Maps in Key Industries across the Commonwealth. Recognizing that adult learners are the backbone of the U.S. economy, CAEL helps forge a clear, viable connection between education and career success, providing solutions that promote sustainable and equitable economic growth. CAEL opens doors to opportunity in collaboration with workforce and economic developers, postsecondary educators, and employers, industry groups, foundations, and other mission-aligned organizations. By engaging with these stakeholders, we foster a culture of innovative, lifelong learning that helps individuals and their communities thrive. Established in 1974, CAEL, a Strada Education Network affiliate, is a nonprofit 501(c)(3) membership organization.

## PENNSYLVANIA'S AGRI-BUSINESS INDUSTRY

Agri-Business has a long history in Pennsylvania, with roughly 60,000 employees across the state in 2020, which was 24% above the national average. With projected 2.6% growth up until 2025, this is a key industry for the state. At the statewide level, the following occupations within these competency maps are primarily employed within the Supermarkets and Other Grocery (except Convenience Stores), General Freight Trucking, and General Warehousing and Storage, and Specialized Freight sub-industries.



Digging further at the regional level, most regions have similar sub-industries in which these occupations are employed with General Freight Trucking, Long-Distance Truckload and Supermarkets and Other Grocery (except Convenience Stores) being at the top with the Northern and Southern regions focused more on General Freight Trucking, the Western in Specialized Freight, Local, and the Eastern having a larger supply of these occupations employed in Supermarkets and Other Groceries. Below is an example of some regional specific sub-industries within which these occupations are primarily employed:

### HIGH LEVEL REGIONAL SUB-INDUSTRY COMPARISONS WITHIN AGRI-BUSINESS

#### NORTHERN

- ⊗ General Freight Trucking, Long-Distance, Truckload
- ⊗ General Warehousing and Storage
- ⊗ Supermarkets and Other Grocery (except Convenience Stores)

#### SOUTHERN

- ⊗ General Freight Trucking, Long-Distance, Truckload
- ⊗ General Warehousing and Storage
- ⊗ Supermarkets and Other Grocery (except Convenience Stores)

#### EASTERN

- ⊗ Supermarkets and Other Grocery (except Convenience Stores)
- ⊗ Corporate, Subsidiary, and Regional Managing Offices
- ⊗ General Freight Trucking, Long-Distance, Truckload

#### WESTERN

- ⊗ Specialized Freight (except Used Goods) Trucking, Local
- ⊗ Corporate, Subsidiary, and Regional Managing Offices
- ⊗ Supermarkets and Other Grocery (except Convenience) Stores

The occupations included in these competency maps are the most in demand Agri-Business occupations across the state, typically with varying degrees of demand at regional levels. Across the board, Heavy and Tractor Trailer Truck Drivers are most in demand in this industry, with some variation across regions, such as a slightly higher demand for Sales Representatives in the Southern Region.

### REGIONAL IN-DEMAND OCCUPATIONS WITHIN AGRI-BUSINESS

#### NORTHERN

- ⊗ Heavy and Tractor-Trailer Truck Drivers,
- ⊗ First-Line Supervisors of Retail Sales Workers
- ⊗ General and Operations Managers
- ⊗ Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
- ⊗ Packaging and Filling Machine Operators and Tenders

#### SOUTHERN

- ⊗ Heavy and Tractor Trailer Truck Drivers
- ⊗ First-Line Supervisors of Retail Sales Workers
- ⊗ Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
- ⊗ General and Operations Managers
- ⊗ Packaging and Filling Machine Operators and Tenders

#### EASTERN

- ⊗ Heavy and Tractor Trailer Truck Drivers
- ⊗ First-Line Supervisors of Retail Sales Workers
- ⊗ General and Operations Managers
- ⊗ Sales Representatives, Wholesale and Manufacturing, Except Scientific and Technical Products
- ⊗ Packaging and Filling Machine Operators and Tenders

#### WESTERN

- ⊗ Heavy and Tractor Trailer Truck Drivers
- ⊗ First-Line Supervisors of Retail Sales Workers
- ⊗ General and Operations Managers
- ⊗ Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products
- ⊗ Packaging and Filling Machine Operators and Tenders

# INDUSTRY-WIDE FOUNDATIONAL SKILLS

Below, please find a list of top foundational skills within the Agri-Business industry. Foundational skills are defined as core skills that provide a foundation for success in school and in the world of work. Nationally, employers have identified a link between foundational skills and job performance and foundational skills are often a prerequisite for workers to learn new industry-specific skills. Foundational skills are broken down into three categories as defined below:



## AGRI-BUSINESS: INDUSTRY-WIDE FOUNDATIONAL SKILLS

### PERSONAL EFFECTIVENESS COMPETENCIES

These competencies are essential for all life roles - roles as a member of a family, a community, and a larger society. These “soft skills” are increasingly valued in the labor market.

- ⓧ **Adaptability:** Displaying the capability to adapt to new, different, or changing requirements.
- ⓧ **Professionalism:** Maintaining a professional presence.
- ⓧ **Lifelong Learning:** Demonstrating a commitment to self-development and improvement of knowledge and skills.
- ⓧ **Interpersonal Skills:** Displaying skills to work effectively with others from diverse backgrounds.
- ⓧ **Integrity:** Displaying strong moral principles and work ethic.
- ⓧ **Initiative:** Demonstrating a commitment to effective job performance by taking action on one’s own and following through to get the job done.
- ⓧ **Dependability:** Displaying responsible behaviors at work.

### ACADEMIC COMPETENCIES

These are critical competencies primarily learned in an academic setting, as well as cognitive functions and thinking styles. These competencies are likely to apply to all organizations in a single industry or be represented by an industry association nationwide.

- ⓧ **Communication:** Listening, speaking, and signaling so others can understand using a variety of methods, including hearing, speech, American Sign Language, instant messaging, text-to-speech devices, etc.
- ⓧ **Science & Technology:** Using scientific rules and methods to express ideas and solve problems on paper, on computers, or on adaptive devices.
- ⓧ **Mathematics:** Using mathematics to express ideas and solve problems.
- ⓧ **Basic Computer Skills:** Using information technology and related applications, including adaptive devices and software, to convey and retrieve information.
- ⓧ **Critical & Analytical Thinking:** Using logical thought processes to analyze information and draw conclusions.
- ⓧ **Reading:** Understanding written sentences, paragraphs, and figures in work-related documents on paper, on computers, or adaptive devices.
- ⓧ **Writing:** Using standard business English to compile information and prepare written documents on paper, computers, or adaptive devices.

### WORKPLACE COMPETENCIES

These competencies represent those skills and abilities that allow individuals to function in an organizational setting.

- ⓧ **Detail Orientation:** Being accurate and thorough in review and development of work materials/ content.
- ⓧ **Leadership:** Managing and leading team members to successful outcomes in the workplace.
- ⓧ **Problem Solving/Decision Making:** Generating, evaluating, and implementing solutions to problems.
- ⓧ **Teamwork:** Working cooperatively with others to complete work assignments.
- ⓧ **Scheduling/Coordinating:** Making arrangements that fulfill all requirements as efficiently and economically as possible.
- ⓧ **Customer Focus:** Efficiently and effectively addressing the needs of clients/customers.
- ⓧ **Instruction/Teaching:** Teaching others how to do something.
- ⓧ **Creative Thinking:** Generating innovative and creative solutions.



|   |  |
|---|--|
| <b>JOB DESCRIPTION</b>                              | Drive a tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW). May be required to unload the truck. Requires commercial drivers' license.  |
| <b>KEY FOUNDATIONAL SKILLS</b>                      | Customer Focus, Teamwork, Initiative, Communication, Mathematics, Integrity  |
| <b>SAFETY AWARENESS</b>                             | <b>Ensure Vehicle Safety:</b> Check vehicles to ensure that mechanical, safety, and emergency equipment is in good working order. Follow appropriate safety procedures for transporting dangerous goods. Inspect loads to ensure that cargo is secure. Secure cargo for transport, using ropes, blocks, chain, binders, or covers. Crank trailer landing gear up or down to safely secure vehicles. Wrap and secure goods by using pads, packing paper, containers, or straps.   |
| <b>INDUSTRY PRINCIPLES AND CONCEPTS</b>             | <p><b>Loading and Unloading:</b> Maneuver trucks into loading or unloading positions, following signals from loading crew and checking that vehicle and loading equipment are properly positioned. Load or unload trucks or help others with loading or unloading, using special loading-related equipment or other equipment as necessary</p> <p><b>Drive Trucks:</b> Drive trucks with capacities greater than 3 tons, including tractor-trailer combinations, to transport and deliver products, livestock, or other materials. Drive trucks to weigh stations before and after loading and along routes in compliance with state regulations.</p> <p><b>Operate and Install Equipment:</b> Operate equipment, such as truck cab computers, CB radios, phones, or global positioning systems (GPS) equipment to exchange necessary information with bases, supervisors, or other drivers. Couple or uncouple trailers by changing trailer jack positions, connecting or disconnecting air or electrical lines, or manipulating fifth-wheel locks. Install or remove special equipment, such as tire chains, grader blades, plow blades, or sanders.</p> <p><b>Maintain Records, Follow and Give Instructions:</b> Obtain receipts or signatures for delivered goods and collect payment for services when required. Read bills of lading to determine assignment details. Collect delivery instructions from appropriate sources, verifying instructions and routes. Follow special cargo-related procedures, such as checking refrigeration systems for frozen foods or providing food or water for livestock. Give directions to laborers who are packing goods and moving them onto trailers.</p> <p><b>Inspect and Repair:</b> Check conditions of trailers after contents have been unloaded to ensure that there has been no damage. Perform emergency roadside repairs, such as changing tires or installing light bulbs, tire chains, or spark plugs. Perform basic vehicle maintenance tasks, such as adding oil, fuel, or radiator fluid or performing minor repairs.</p> |
| <b>ENVIRONMENTAL LAWS &amp; REGULATIONS</b>         | <b>Follow Environmentally Friendly Procedures:</b> Plan or adjust routes based on changing conditions, using computer equipment, global positioning systems (GPS) equipment, or other navigation devices, to minimize fuel consumption and carbon emissions. Operate idle reduction systems or auxiliary power systems to generate power from alternative sources, such as fuel cells, to reduce idling time, to heat or cool truck cabins, or to provide power for other equipment. Drive electric or hybrid-electric powered trucks or alternative fuel-powered trucks to transport and deliver products, livestock, or other materials  |
| <b>QUALITY CONTROL &amp; CONTINUOUS IMPROVEMENT</b> | <b>Maintain Accuracy:</b> Maintain logs of working hours or of vehicle service or repair status, following applicable state and federal regulations. Report vehicle defects, accidents, traffic violations, or damage to the vehicles. Check all load-related documentation for completeness and accuracy. Inventory and inspect goods to be moved to determine quantities and conditions  |
| <b>KNOWLEDGE</b>                                    | Transportation, Public Safety and Security, Customer and Personal Service, Mechanical  |



## AGRI-BUSINESS

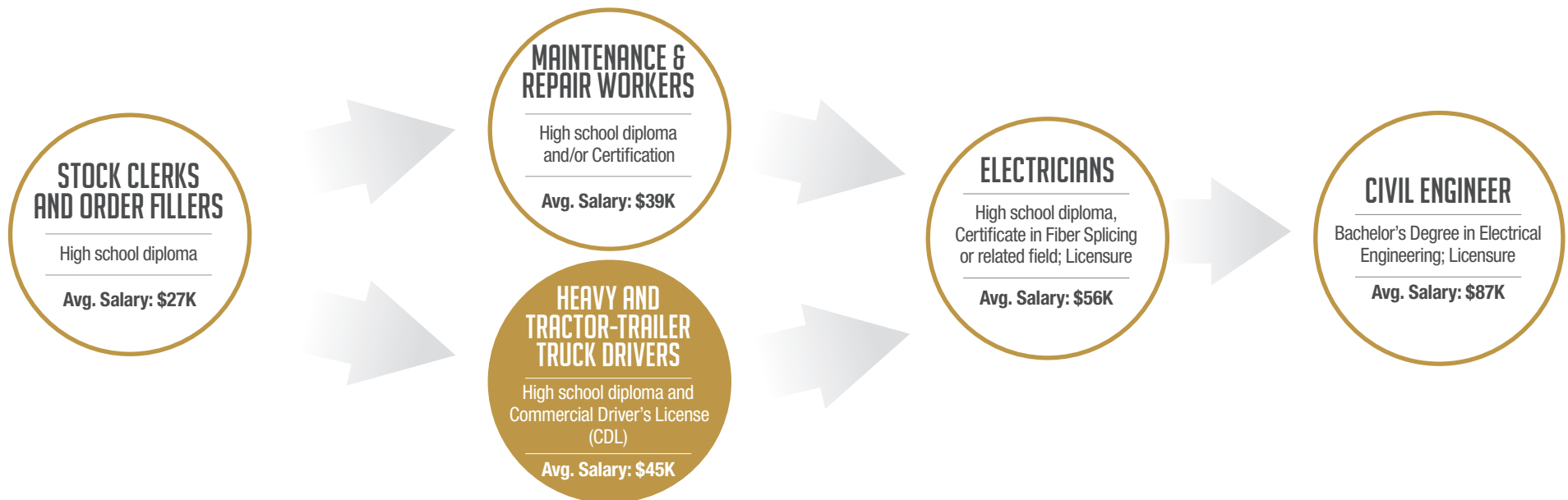
## HEAVY TRACTOR AND TRAILER TRUCK DRIVERS

|                               |   |   |
|-------------------------------|---|---|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$30,000 - \$45,000 (depending on region and employer)<br><b>More Detail:</b> \$10 load bonus for every load they deliver (3 loads average per day)   | <b>Advanced Level:</b> \$45,000 - \$65,000  |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⌚ Analytical or scientific software</li> <li>⌚ Database user interface and query software</li> <li>⌚ Electronic mail software</li> <li>⌚ Enterprise resources planning (ERP) software</li> </ul> | <ul style="list-style-type: none"> <li>⌚ Inventory management software</li> <li>⌚ Materials requirements planning logistics and supply chain software</li> <li>⌚ Office suite software</li> </ul> |
| <b>CREDENTIALS</b>            | <b>Required:</b> High school diploma, Commercial driver's license (CDL)-A or B, Clean Driving Record  | <b>Optional/Dependent on Specialty:</b> CDL Endorsements: T: Double and triple trailers, P: Passenger vehicles, etc. Hazardous Materials Credential, Tanker Endorsement                           |
| <b>WORK EXPERIENCE</b>        | 0-3 years   |   |
| <b>OTHER JOB TITLES/ROLES</b> | Driver, Line Haul Driver, Log Truck Driver, Over the Road Driver (OTR Driver), Production Truck Driver, Road Driver, Semi Truck Driver, Tractor Trailer Operator, Truck Driver  |   |



## HEAVY TRACTOR AND TRAILER TRUCK DRIVERS PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.





|   |  |
|---|--|
| <b>JOB DESCRIPTION</b>                              | Directly supervise and coordinate activities of retail sales workers in an establishment or department. Duties may include management functions, such as purchasing, budgeting, accounting, and personnel work, in addition to supervisory duties.   |
| <b>KEY FOUNDATIONAL SKILLS</b>                      | Customer Focus, Communications, Basic Mathematics, Scheduling/Coordinating, Dependability  |
| <b>SAFETY AWARENESS</b>                             | <b>Safety Enforcement:</b> Enforce safety, health, and security rules.   |
| <b>INDUSTRY PRINCIPLES AND CONCEPTS</b>             | <p><b>Customer Service:</b> Provide customer service by greeting and assisting customers and responding to customer inquiries and complaints.</p> <p><b>Personnel Management &amp; Training:</b> Direct and supervise employees engaged in sales, inventory-taking, reconciling cash receipts, or in performing services for customers. Instruct staff on how to handle difficult and complicated sales. Assign employees to specific duties. Plan and prepare work schedules and keep records of employees' work schedules and time cards. Hire, train, and evaluate personnel in sales or marketing establishments, promoting or firing workers when appropriate.</p> <p><b>Maintain Records:</b> Keep records of purchases, sales, and requisitions.</p> <p><b>Clean and Manage Inventory:</b> Review inventory and sales records to prepare reports for management and budget departments. Inventory stock and reorder when inventory drops to a specified level. Perform work activities of subordinates, such as cleaning and organizing shelves and displays and selling merchandise.</p> <p><b>Develop Policies, Procedures, and Budgets:</b> Establish and implement policies, goals, objectives, and procedures for the department. Establish credit policies and operating procedures. Plan budgets and authorize payments and merchandise returns.</p> <p><b>Strategic Marketing &amp; Planning:</b> Confer with company officials to develop methods and procedures to increase sales, expand markets, and promote business. Formulate pricing policies for merchandise, according to profitability requirements. Estimate consumer demand and determine the types and amounts of goods to be sold. Plan and coordinate advertising campaigns and sales promotions and prepare merchandise displays and advertising copy.</p> |
| <b>QUALITY CONTROL &amp; CONTINUOUS IMPROVEMENT</b> | <b>Monitor and Assess Quality:</b> Examine merchandise to ensure that it is correctly priced and displayed and that it functions as advertised. Examine products purchased for resale or received for storage to assess the condition of each product or item. Monitor sales activities to ensure that customers receive satisfactory service and quality goods.   |
| <b>KNOWLEDGE</b>                                    | Customer and Personal Service, Administration and Management, Sales and Marketing, Education and Training  |



## AGRI-BUSINESS

## FIRST-LINE SUPERVISORS OF RETAIL SALES WORKERS

|                               |  |  |
|-------------------------------|--|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$20,000- \$40,000 (depending on region and employer)  | <b>Advanced Level:</b> \$40,000 - \$75,000   |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⌚ Accounting software</li> <li>⌚ Analytical or scientific software</li> <li>⌚ Business intelligence and data analysis software</li> <li>⌚ Calendar and scheduling software</li> <li>⌚ Computer aided design CAD software</li> <li>⌚ Customer relationship management CRM software</li> <li>⌚ Database management system software</li> <li>⌚ Database user interface and query software</li> <li>⌚ Data mining software</li> </ul> | <ul style="list-style-type: none"> <li>⌚ Desktop publishing software</li> <li>⌚ Document management software</li> <li>⌚ Electronic mail software</li> <li>⌚ Enterprise resource planning ERP software</li> <li>⌚ Graphics or photo imaging software</li> <li>⌚ Human resources software</li> <li>⌚ Internet browser software</li> <li>⌚ Office suite software</li> <li>⌚ Point of sale POS software</li> <li>⌚ Time accounting software</li> </ul> |
| <b>CREDENTIALS</b>            | <b>Required:</b> High school diploma or associate's degree in business or related field  | <b>Optional/Dependent on Specialty:</b> Certifications in specified field  |
| <b>WORK EXPERIENCE</b>        | <b>Entry Level:</b> 1-3 years  | <b>Advanced Level:</b> 3-5 years   |
| <b>OTHER JOB TITLES/ROLES</b> | Bakery Manager, Delicatessen Manager, Department Manager, Department Supervisor, Grocery Manager, Key Carrier, Meat Department Manager, Parts Sales Manager, Shift Manager, Store Manager  |  |



## FIRST-LINE SUPERVISORS OF RETAIL SALES WORKERS PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.







### JOB DESCRIPTION

Plan, direct, or coordinate the operations of public or private sector organizations, overseeing multiple departments or locations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Usually manage through subordinate supervisors. Excludes First-Line Supervisors.

### KEY FOUNDATIONAL SKILLS

Leadership, Communications, Customer Focus, Scheduling/Coordinating, Problem Solving/Decision Making

### INDUSTRY PRINCIPLES AND CONCEPTS

**Manage Budget, Review Financial Statements and Product Pricing:** Review financial statements, sales or activity reports, or other performance data to measure productivity or goal achievement or to identify areas needing cost reduction or program improvement. Direct or coordinate financial or budget activities to fund operations, maximize investments, or increase efficiency. Set prices or credit terms for goods or services, based on forecasts of customer demand.

**Manage Production and Logistics:** Direct and coordinate activities of businesses or departments concerned with the production, pricing, sales, or distribution of products. Direct administrative activities directly related to making products or providing services. Manage the movement of goods into and out of production facilities to ensure efficiency, effectiveness, or sustainability of operations.

**Customer Services:** Perform sales floor work, such as greeting or assisting customers, stocking shelves, or taking inventory.

**Marketing Strategy and Coordination:** Plan or direct activities, such as sales promotions, that require coordination with other department managers. Develop or implement product-marketing strategies, including advertising campaigns or sales promotions. Direct non-merchandising departments of businesses, such as advertising or purchasing.

**Establish Policies & Procedures:** Establish or implement departmental policies, goals, objectives, or procedures in conjunction with board members, organization officials, or staff members.

**Personnel Management:** Prepare staff work schedules and assign specific duties. Perform personnel functions, such as selection, training, or evaluation.

**Facility Management:** Recommend locations for new facilities, or oversee the remodeling or renovating of current facilities.

**Manage Vendor Relationships:** Monitor suppliers to ensure that they efficiently and effectively provide needed goods or services within budgetary limits.

### ENVIRONMENTAL LAWS & REGULATIONS

**Manage Environmental Management/Sustainability Programs:** Implement or oversee environmental management or sustainability programs addressing issues such as recycling, conservation, or waste management.

### KNOWLEDGE

Administration and Management, Customer and Personal Service, Personnel and Human Resources, Mathematics



## AGRI-BUSINESS

## GENERAL AND OPERATIONS MANAGERS

|                               |  |  |
|-------------------------------|--|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$50,000 - \$100,000 (depending on region and employer)  | <b>Advanced Level:</b> \$100,000 - \$240,000   |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⊗ Accounting software Analytical or scientific software</li> <li>⊗ Calendar and scheduling software</li> <li>⊗ Computer aided manufacturing CAM software</li> <li>⊗ Database reporting software</li> <li>⊗ Database user interface and query software</li> <li>⊗ Electronic mail software</li> <li>⊗ Enterprise resource planning ERP software</li> <li>⊗ Facilities management software</li> </ul> | <ul style="list-style-type: none"> <li>⊗ Information retrieval or search software</li> <li>⊗ Internet browser software</li> <li>⊗ Office suite software</li> <li>⊗ Project management software</li> <li>⊗ Spreadsheet software</li> <li>⊗ Video creation and editing software</li> <li>⊗ Word processing software</li> </ul> |
| <b>CREDENTIALS</b>            | <b>Required:</b> Bachelor's Degree in Business, Retail Management or related field   | <b>Optional/Dependent on Specialty:</b> Associate's Degree or Certificate in Business, Retail Management, or related field   |
| <b>WORK EXPERIENCE</b>        | 3 - 5+ years   |  |
| <b>OTHER JOB TITLES/ROLES</b> | Business Manager, General Manager (GM), Operations Director, Operations Manager, Plant Superintendent, Store Manager   |  |



### GENERAL AND OPERATIONS MANAGERS PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.





## AGRI-BUSINESS

### SALES REPRESENTATIVES, WHOLESALE AND MANUFACTURING, EXCEPT TECHNICAL AND SCIENTIFIC PRODUCTS

|   |   |
|---|---|
| <b>JOB DESCRIPTION</b>  | Sell goods for wholesalers or manufacturers to businesses or groups of individuals. Work requires substantial knowledge of items sold.  |
| <b>KEY FOUNDATIONAL SKILLS</b>                                | Communication, Customer Focus, Detail Orientation, Leadership, Initiative   |
| <b>OPERATION MANAGEMENT</b>                                   | <p><b>Client Consultation:</b> Contact regular and prospective customers to demonstrate products, explain product features, and solicit orders. Recommend products to customers, based on customers' needs and interests. Answer customers' questions about products, prices, availability, product uses, and credit terms. Consult with clients after sales or contract signings to resolve problems and to provide ongoing support. Provide customers with product samples and catalogs.</p> <p><b>Business Development:</b> Identify prospective customers by using business directories, following leads from existing clients, participating in organizations and clubs, and attending trade shows and conferences. Obtain credit information about prospective customers.</p> <p><b>Cost Estimation:</b> Estimate or quote prices, credit or contract terms, warranties, and delivery dates. Prepare drawings, estimates, and bids that meet specific customer needs.</p> <p><b>Product Purchasing:</b> Buy products from manufacturers or brokerage firms and distribute them to wholesale and retail clients.</p> |
| <b>PRODUCTION IN THE SUPPLY CHAIN/ SUPPLY CHAIN LOGISTICS</b> | <b>Logistics:</b> Communicate with manufacturers and logistics personnel by forwarding orders to manufacturers and arranging for delivery and installation of products and equipment.   |
| <b>QUALITY ASSURANCE &amp; CONTINUOUS IMPROVEMENT</b>         | <p><b>Training:</b> Train customers' employees to operate and maintain new equipment.</p> <p><b>Professional Development &amp; Research:</b> Monitor market conditions, product innovations, and competitors' products, prices, and sales.</p> <p><b>Administrative Duties:</b> Perform administrative duties by preparing sales budgets and reports, keeping sales records, filing expense account reports, checking stock levels and reordering merchandise as necessary.</p> <p><b>Contract Negotiation:</b> Prepare sales contracts and order forms by negotiating the details of contracts and payments.</p> <p><b>Vendor Negotiation:</b> Improve product exposure, such as shelf positioning and advertising by negotiating with merchants and vendors. Plan, assemble, and stock product displays in wholesale stores, by making recommendations to vendors regarding product displays, promotional programs, and advertising.</p>  |
| <b>KNOWLEDGE</b>  | Sales and Marketing, Customer and Personal Service, Computer and Electronics, Customer Relationship Management, Business Development, Cold Calling, Sales Management, Sales Territory, Business to Business, Sales Process, Merchandising   |



## AGRI-BUSINESS

### SALES REPRESENTATIVES, WHOLESALE AND MANUFACTURING, EXCEPT TECHNICAL AND SCIENTIFIC PRODUCTS

|                               |   |  |
|-------------------------------|---|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$25,000 - \$60,000 (depending on region and employer)  | <b>Advanced Level:</b> \$60,000 - \$115,000  |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⊕ Access Software</li> <li>⊕ Accounting software</li> <li>⊕ Analytical or scientific software</li> <li>⊕ Application server software</li> <li>⊕ Database User Interface and Query Software</li> <li>⊕ Electronic Mail Software</li> <li>⊕ Enterprise Resource Planning (ERP) Software</li> <li>⊕ Business Intelligence and Data Analysis Software</li> </ul> | <ul style="list-style-type: none"> <li>⊕ Calendar and Scheduling Software</li> <li>⊕ Computer Aided Design (CAD) Software</li> <li>⊕ Customer Relationship Management CRM Software</li> <li>⊕ Database management system software</li> <li>⊕ Database reporting software</li> <li>⊕ Data mining software</li> <li>⊕ Desktop publishing software</li> <li>⊕ Development environment software</li> </ul> |
| <b>CREDENTIALS</b>            | <b>Required:</b> High school diploma, Bachelor's Degree in Business, Marketing or related field   | <b>Optional/Dependent on Specialty:</b> Customer Service Specialist Certification, Welding Sales Representative Certification  |
| <b>WORK EXPERIENCE</b>        | 3-5+ years  |  |
| <b>OTHER JOB TITLES/ROLES</b> | Account Representative, Customer Account Technician, Inside Sales Person, Outside Sales Representative, Route Sales Representative, Sales Consultant, Sales Professional, Sales Representative (Sales Rep), Salesman, Salesperson   |  |



### SALES REPRESENTATIVES, WHOLESALE AND MANUFACTURING PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.





|   |   |
|---|---|
| <b>JOB DESCRIPTION</b>  | Operate or tend machines to prepare industrial or consumer products for storage or shipment. Includes cannery workers who pack food products.   |
| <b>KEY FOUNDATIONAL SKILLS</b>                                    | Mathematics, Detail Orientation, Communication, Problem Solving/Decision Making, Basic Computer Skills  |
| <b>PRODUCTION IN THE SUPPLY CHAIN/<br/>SUPPLY CHAIN LOGISTICS</b> | <p><b>Labeling:</b> Attach identification labels to finished packaged items, or cut stencils and stencil information on containers, such as lot numbers or shipping destinations.</p> <p><b>Machinery Operation &amp; Maintenance:</b> Stop or reset machines when malfunctions occur, clear machine jams, and report malfunctions to a supervisor. Observe machine operations to ensure quality and conformity of filled or packaged products to standards. Start the machine by engaging controls. Tend or operate machine that packages product. Clean, oil, and make minor adjustments or repairs to machinery and equipment, such as opening valves or setting guides. Regulate machine flow, speed, or temperature. Adjust machine components and machine tension and pressure according to size or processing angle of product. Supply materials to spindles, conveyors, hoppers, or other feeding devices and unload packaged product.</p> <p><b>Organizing and Packaging:</b> Stack finished packaged items, or wrap protective material around each item, and pack the items in cartons or containers. Package the product in the form in which it will be sent out, for example, filling bags with flour from a chute or spout. Stock and sort product for packaging or filling machine operation, and replenish packaging supplies, such as wrapping paper, plastic sheet, boxes, cartons, glue, ink, or labels. Count and record finished and rejected packaged items.</p> <p><b>Cleaning:</b> Clean packaging containers, line and pad crates, or assemble cartons to prepare for product packing. Clean and remove damaged or otherwise inferior materials to prepare raw products for processing.</p> |
| <b>QUALITY ASSURANCE &amp; CONTINUOUS IMPROVEMENT</b>             | <p><b>Product Sorting and Inspection:</b> Sort, grade, weigh, and inspect products, verifying and adjusting product weight or measurement to meet specifications. Remove finished packaged items from machine and separate rejected items. Secure finished packaged items by hand tying, sewing, gluing, stapling, or attaching fastener.</p> <p><b>Production Line Monitoring:</b> Monitor the production line, watching for problems such as pile-ups, jams, or glue that isn't sticking properly. Inspect and remove defective products and packaging material.</p>  |
| <b>KNOWLEDGE</b>  | Production and Processing, Mechanical Knowledge, Public Safety and Security, Customer and Personal Service, Mathematics   |



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|-------------------------------|--|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$20,000- \$30,000 (depending on region and employer)  | <b>Advanced Level:</b> \$30,000 - \$50,000   |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⌚ Database user interface and query software</li> <li>⌚ Electronic mail software</li> <li>⌚ Enterprise resource planning ERP software</li> <li>⌚ Label making software</li> </ul> | <ul style="list-style-type: none"> <li>⌚ Office suite software</li> <li>⌚ Presentation software</li> <li>⌚ Spreadsheet software</li> <li>⌚ Word processing software</li> </ul> |
| <b>CREDENTIALS</b>            | <b>Required:</b> High school diploma   |  |
| <b>WORK EXPERIENCE</b>        | 0 - 3 years  |  |
| <b>OTHER JOB TITLES/ROLES</b> | A-Operator, Bundler, Closing Machine Operator, Computer Numerical Control Machine Operator (CNC Machine Operator), Filler Operator, Machine Operator, Packaging Operator, Packing Attendant, Packing Machine Operator    |  |



### PACKAGING AND FILLING MACHINE OPERATORS AND TENDERS PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.





### JOB DESCRIPTION

Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; or cleaning, grading, sorting, packing, and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities.

### KEY FOUNDATIONAL SKILLS

Customer Focus, Communications, Detail Orientation, Basic Computer Skills, Initiative

### OPERATION MANAGEMENT

**Harvest and Tend to Plants:** Harvest plants, and transplant or pot and label them. Haul and spread topsoil, fertilizer, peat moss, and other materials to condition soil, using wheelbarrows or carts and shovels. Plant, spray, weed, fertilize, water, and prune plants, shrubs, and trees, using gardening tools. Harvest fruits and vegetables by hand. Sow grass seed, or plant plugs of grass. Cut, roll, and stack sod. Feel plants' leaves and note their coloring to detect the presence of insects or disease.

**Digging and Loading:** Dig, cut, and transplant seedlings, cuttings, trees, and shrubs. Dig, rake, and screen soil, filling cold frames and hot beds in preparation for planting. Move containerized shrubs, plants, and trees, using wheelbarrows or tractors. Tie and bunch flowers, plants, shrubs, and trees, wrap their roots, and pack them into boxes to fill orders. Load agricultural products into trucks, and drive trucks to market or storage facilities.

**Operate Machinery:** Set up and operate irrigation equipment.

**Repair Equipment:** Operate tractors, tractor-drawn machinery, and self-propelled machinery to plow, harrow and fertilize soil, or to plant, cultivate, spray and harvest crops. Repair and maintain farm vehicles, implements, and mechanical equipment. Maintain and repair irrigation and climate control systems. Repair farm buildings, fences, and other structures.

**Cleaning:** Clean work areas, and maintain grounds and landscaping.

**Teamwork:** Inform farmers or farm managers of crop progress.

**Customer Service:** Sell and deliver plants and flowers to customers. Provide information and advice to the public regarding the selection, purchase, and care of products.

**Personnel Management:** Direct and monitor the work of casual and seasonal help during planting and harvesting.

**Operate Irrigation Systems:** Regulate greenhouse conditions, and indoor and outdoor irrigation systems.

**Record Data & Maintain Inventory:** Record information about crops, such as pesticide use, yields, or costs. Maintain inventory, ordering materials as required. Record information about plants and plant growth.

**Inspection:** Participate in the inspection, grading, sorting, storage, and post-harvest treatment of crops. Inspect plants and bud ties to assess quality.

**Pest Control:** Trap and destroy pests, such as moles, gophers, and mice, using pesticides. Identify plants, pests, and weeds to determine the selection and application of pesticides and fertilizers.

### KNOWLEDGE

Irrigation (Landscaping and Agriculture), Weed Controls, Pruning, Farming, Agriculture, Transplanting, Soil Science, Moving, Warehousing



## AGRI-BUSINESS

## FARMWORKERS AND LABORERS, CROP, NURSERY, AND GREENHOUSE

|                               |  |  |
|-------------------------------|--|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$15,000 - \$25,000 (depending on region and employer)   | <b>Advanced Level:</b> \$25,000 - \$50,000   |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⌚ Database user interface and query software</li> <li>⌚ Electronic mail software.</li> <li>⌚ Internet browser software</li> <li>⌚ Mobile location based services software</li> <li>⌚ Office suite software</li> <li>⌚ Spreadsheet software</li> <li>⌚ Word processing software</li> </ul> |  |
| <b>CREDENTIALS</b>            | <p><b>Required:</b> High school diploma</p> <p><b>Preferred:</b> Forklift and/or Palletjack and/or Truck Operation</p>   | <p><b>Optional/Dependent on Specialty:</b> Certifications in Equipment Operation, Farm Equipment Operation Certification, Irrigation, Pesticide; 4H Certifications</p> |
| <b>WORK EXPERIENCE</b>        | 0-3 years  |  |
| <b>OTHER JOB TITLES/ROLES</b> | Farm Laborer, Field Irrigation Worker, Gardener, Greenhouse Worker, Grower, Harvester, Nursery Worker, Orchard Worker, Picker, Propagation Worker  |  |



## FARMWORKERS AND LABORERS, CROP, NURSERY, AND GREENHOUSE PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.







|   |  |
|---|--|
| <b>JOB DESCRIPTION</b>  | Set up and operate equipment that mixes or blends ingredients used in the manufacturing of food products. Includes candy makers and cheese makers.   |
| <b>KEY FOUNDATIONAL SKILLS</b>                                | Mathematics, Communication, Detail Orientation, Problem Solving/Decision Making, Basic Computer Skills   |
| <b>PRODUCTION IN THE SUPPLY CHAIN/ SUPPLY CHAIN LOGISTICS</b> | <p><b>Recording Data:</b> Record production and test data for each food product batch, such as the ingredients used, temperature, test results, and time cycle.</p> <p><b>Prepare Food:</b> Follow recipes to produce food products of specified flavor, texture, clarity, bouquet, or color. Mix or blend ingredients, according to recipes, using a paddle or an agitator, or by controlling vats that heat and mix ingredients. Fill processing or cooking containers, such as kettles, rotating cookers, pressure cookers, or vats, with ingredients, by opening valves, by starting pumps or injectors, or by hand. Select and measure or weigh ingredients, using English or metric measures and balance scales. Manipulate products, by hand or using machines, to separate, spread, knead, spin, cast, cut, pull, or roll products.</p> <p><b>Equipment and Machine Maintenance:</b> Set up, operate, and tend equipment that cooks, mixes, blends, or processes ingredients in the manufacturing of food products, according to formulas or recipes. Turn valve controls to start equipment and to adjust operation to maintain product quality. Press switches and turn knobs to start, adjust, and regulate equipment, such as beaters, extruders, discharge pipes, and salt pumps. Observe and listen to equipment to detect possible malfunctions, such as leaks or plugging, and report malfunctions or undesirable tastes to supervisors. Observe gauges and thermometers to determine if the mixing chamber temperature is within specified limits, and turn valves to control the temperature. Operate refining machines to reduce the particle size of cooked batches. Place products on carts or conveyors to transfer them to the next stage of processing. Cool food product batches on slabs or in water-cooled kettles. Homogenize or pasteurize material to prevent separation or to obtain prescribed butterfat content, using a homogenizing device.</p> <p><b>Cleaning:</b> Clean and sterilize vats and factory processing areas.</p> <p><b>Food Testing:</b> Test food product samples for moisture content, acidity level, specific gravity, or butter-fat content, and continue processing until desired levels are reached.</p> <p><b>Modification and Assessment of Methods:</b> Modify cooking and forming operations based on the results of sampling processes, adjusting time cycles and ingredients to achieve desired qualities, such as firmness or texture. Determine mixing sequences, based on knowledge of temperature effects and of the solubility of specific ingredients. Formulate or modify recipes for specific kinds of food products.</p> <p><b>Supervision:</b> Give directions to other workers who are assisting in the batchmaking process.</p> |
| <b>QUALITY ASSURANCE &amp; CONTINUOUS IMPROVEMENT</b>         | <p><b>Inspection and Examination:</b> Inspect vats after cleaning to ensure that fermentable residue has been removed. Grade food products according to government regulations or according to type, color, bouquet, and moisture content. Inspect and pack the final product. Examine, feel, and taste product samples during production to evaluate quality, color, texture, flavor, and bouquet, and document the results.</p>  |
| <b>KNOWLEDGE</b>  | Production and Processing, Operation and Control, Critical Thinking, Operating Monitoring, Reading Comprehension   |



## AGRI-BUSINESS

## FOOD BATCHMAKERS

|                               |   |  |
|-------------------------------|---|--|
| <b>SALARY RANGE</b>           | <b>Entry Level:</b> \$20,000 - \$35,000 (depending on region and employer)  | <b>Advanced Level:</b> \$35,000 - \$50,000 |
| <b>TECHNOLOGIES</b>           | <ul style="list-style-type: none"> <li>⌚ Database user interface and query software</li> <li>⌚ Enterprise resource planning ERP software</li> <li>⌚ Inventory management software</li> <li>⌚ Office suite software</li> </ul> |  |
| <b>CREDENTIALS</b>            | <b>Required:</b> High school diploma; on-the-job training   |  |
| <b>WORK EXPERIENCE</b>        | 0-3 years   |  |
| <b>OTHER JOB TITLES/ROLES</b> | Batching Operator, Blender, Brewing Technician, Compounder, Dough Scaler and Mixer, Mixer, Process Operator, Processing Operator, Syrup Maker   |  |



### FOOD BATCHMAKERS PATHWAY

The pathway below represents a typical career pathway in the ever-changing industry of Agri-Business. The key occupation is represented by the colored-in circle.

