

# Precision Agriculture Technicians Apprenticeship Program Standards

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**Article I Jurisdiction**

These standards shall apply to the employer signatory hereto and to all apprentice agreements hereunder.

**Article II Purpose and Policy**

The parties hereto declare it to be their purpose and policy to establish an organized, planned system of apprenticeship, conducted as an education sponsored, employer based undertaking.

These standards have, therefore, been adopted and agreed upon under the Shelley-Maloney Apprentice Labor Standards Act of 1939, as amended, to govern the employment and training of apprentices in the trade, craft or occupation defined herein, to become effective upon their approval.

**Article III Craft, Trade or Occupation, Related and Supplemental Instruction, Term of Apprenticeship, Ratio, Wage Schedule and Work Training****Occupation****19-4012.01**

Precision Agricultural Technicians

**Article IV Responsibilities of Program Sponsor**

The responsibilities of the apprenticeship committee shall be to:

- 1) supervise the administration and enforcement of these standards;
- 2) adopt such rules and regulations as are necessary to govern the program provided that the rules and regulations do not conflict with these standards and provide a copy of said rules and regulations to each apprentice;
- 3) make periodic evaluations of each apprentices on-the-job training and related and supplemental instruction;
- 4) provide reasonably continuous employment to all apprentices in its employ;
- 5) ensure safe work site facilities, skilled workers as trainers at the work site, and safe equipment sufficient to train apprentices;
- 6) determine the qualifications of apprentice applicants and ensure fair and impartial treatment of applicants for apprenticeship selected through uniform selection procedures;
- 7) file a signed copy, written or electronic, of each apprentice agreement with the Division of Apprenticeship Standards, within 30 days of execution, with copies to all parties to the agreement;

- 8) establish and utilize a procedure to record and maintain all records of the apprentice's worksite job progress and progress in related and supplemental instruction;
- 9) establish and utilize a system for the periodic review and evaluation of the apprentice's progress in job performance and related instruction;
- 10) discipline apprentices, up to and including termination, for failure to fulfill their obligations on-the-job or in related instruction, including provisions for fair hearings;
- 11) annually prepare and submit a Self-Assessment Review as well as a Program Improvement Plan to the Chief of the Division of Apprenticeship Standards;
- 12) ensure training and supervision, both on the job and in related instruction, in first aid, safe working practices and the recognition of occupational health and safety hazards;
- 13) ensure training in the recognition of illegal discrimination and sexual harassment;
- 14) establish an adequate mechanism to be used for the rotation of the apprentice from work process to work process to assure the apprentice of complete training in the apprenticeable occupation;
- 15) ensure the program's ability, including financial ability, and commitment to meet and carry out its responsibilities under federal and state law and regulations applicable to the apprenticeable occupation and for the welfare of the apprentice;
- 16) ensure there is meaningful representation of the apprentice in the management of the program;
- 17) adopt changes to these standards, as necessary, subject to the approval of the parties hereto and the Chief of the Division of Apprenticeship Standards.
- 18) abide by any and all relevant California Labor Codes and California Code of Regulations regarding apprenticeship.

## **Article V     Definition of an Apprentice**

An apprentice is a person at least 16 years of age, who has met the requirements for selection under the selection procedures of participating employer, who is engaged in learning a designated craft or trade and who has entered into a written apprentice agreement under the provisions of these standards.

## **Article VI     Duties of an Apprentice**

Each apprentice shall satisfactorily perform all work and learning assignments both on the job and in related instruction and shall comply with the rules, regulations, and decisions of the apprenticeship committee.

**Article VII Apprenticeship Agreement**

- 1) Each apprenticeship agreement shall conform to the State law governing apprenticeship agreements, shall be signed by the program sponsor and by the apprentice and shall remain in effect during a lay-off unless cancelled.
- 2) Each apprentice shall be furnished a copy of or be given an opportunity to study these standards before registration. These standards shall be considered a part of the apprenticeship agreement as though expressly written therein.
- 3) If the apprentice is under 18 years of age, the agreement must be signed by the apprentice's parent or guardian. When the period of training extends beyond 18, the apprenticeship agreement shall likewise be binding to such a period as may be covered.

**Article VIII Termination**

- 1) During the probationary period, an apprenticeship agreement shall be terminated by the apprenticeship committee at the request in writing of either party. After such probationary period, an apprenticeship agreement may be terminated by the Administrator by mutual agreement of all the parties thereto or cancelled by the Administrator for good and sufficient reason.
- 2) Disciplinary proceeding for apprentices shall be duly noticed in writing to such individuals. The Division of Apprenticeship Standards shall attend all such proceedings.

**Article IX Controversies**

All controversies or differences concerning apprenticeship agreements that cannot be adjusted locally by the program sponsor or otherwise shall be submitted to the Administrator for determination.

**Article X Certificate of Completion**

- 1) In addition to previous on-the-job training and related school instruction, which is of an approved nature, the Apprentice shall have completed not less than an additional six (6) months as an apprentice under the laws of the State of California and demonstrated mastery of the skills and knowledge of the prescribed program.
- 2) In recognition of unusual ability and progress, the program sponsor or apprenticeship committee may decrease the term of apprenticeship for an individual apprentice not more than twelve and one-half percent (12½%).
- 3) Upon evidence of satisfactory completion of apprenticeship, and upon the recommendation of the program sponsor, each apprentice will be issued a Certificate of Completion by the authority of the Chief of the Division of Apprenticeship Standards and the Interagency Advisory Committee on Apprenticeship.

**Article XI Equal Opportunity in Apprenticeship**

The recruitment, selection, employment and training of apprentices during their apprenticeship shall be without discrimination because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, sexual orientation or veteran or military status.

Precision Agriculture Technicians Apprenticeship will create selection procedures that meet objective standards and maintain a fair and equitable selection process for all applicants.

**Article XII Written Applications**

Applications for apprenticeship will be accepted:

Applications will be accepted via the website portal <https://OpenSource.Ag>

**Article XIII Records**

All records will be maintained, in written or electronic form, for five years and kept at:

Open Source Ag 501(c)(3)  
2620 Gray Hawk Way  
San Miguel, CA 93451

**Article XIV Annual Compliance**

Precision Agriculture Technicians Apprenticeship will submit an annual compliance report to the Division of Apprenticeship Standards as requested by the Division.

Precision Agriculture Technicians Apprenticeship agrees to accept electronic signatures for these Division of Apprenticeship Standards and all related Division of Apprenticeship Standards documents.

The foregoing standards are hereby agreed to and adopted by Precision Agriculture Technicians Apprenticeship on **Click or tap to enter a date.** (Committee approval date).

**Employer Organization**

Open Source Ag 501(c)(3)  
2620 Gray Hawk Way San Miguel, CA 93451

\_\_\_\_\_  
Kelly Cooper, Director/President

\_\_\_\_\_  
Date

The foregoing apprenticeship standards, being in conformity with the applicable California Labor Code, California Code of Regulations and Federal Regulations, are hereby approved

\_\_\_\_\_  
(DAS approval date)

\_\_\_\_\_  
Eric Rood, Chief  
Division of Apprenticeship Standards

\_\_\_\_\_  
Date

**Attachment A**  
**Local Education Agency Letter(s)**  
Precision Agriculture Technicians Apprenticeship

# Attachment B-1

## Training Schedule and Working Conditions

### Precision Agriculture Technicians Apprenticeship

#### Occupation

**Occupation:** Precision Agricultural Technicians

**O\*Net Code:** 19-4012.01

#### Article I Term of Apprenticeship and Probation

The standard term of apprenticeship shall be competency based with 150 hours related and supplemental instruction (RSI) hours and completed within approximately 6 months.

The period of probation shall be reasonable in relation to the full apprenticeship term, with full credit given for such period toward completion of the apprenticeship, and in no event shall exceed the shorter of 25 percent of the length of the program or one year. The period of probation shall be 1.5 months.

#### Article II Wage Schedule

##### Professional Worker Wage:

\$ 20.76 per hour effective 1/1/2023.

##### Apprentice Wage and Advancement Schedule:

In no case shall an Apprentice receive a starting wage that is less than the applicable federal, state or local entity (city or county) minimum wage, whichever is higher for the county or city where the apprentice is working. The applicable minimum wage law shall establish the effective date of the minimum wage.

To advance from one period to the next, the apprentice shall have met the following requirements:

1st period	0-5 Competency Requirements	\$ 20.00 /hour
2nd period	6-8 Competency Requirements	\$ 22.00 /hour



**Hours of Work and Working Conditions and Overtime Provision:**

Eight hours of labor constitutes a day's work. Employment beyond eight hours in any workday or more than six days in any workweek requires the employee to be compensated for the overtime at not less than one and one-half times the employee's regular rate of pay for all hours worked in excess of eight hours, up to and including 12 hours in any workday, and for the first eight hours worked on the seventh consecutive day of work in a workweek; and double the employee's regular rate of pay for all hours worked in excess of 12 hours in any workday and for all hours worked in excess of eight on the seventh consecutive day of work in a workweek. If employers utilize an alternative workweek schedule in accordance with the California Industrial Welfare Commission Orders, the overtime will be determined and paid in accordance with the applicable alternative workweek provisions.

The workday and workweek and all other conditions of employment for apprentices shall conform to all applicable laws and regulations and shall not be greater than for those of a professional worker.

Overtime shall not be allowed if it will interfere with or impair the training or be detrimental to the health and safety of the apprentice.

**ARTICLE III Work-Training**

- 1) The employer shall see that all apprentices are under the supervision of a qualified professional worker or instructor and shall provide the necessary diversified experience and training in order to develop the apprentice into a proficiently skilled worker, as outlined herein.
- 2) Each apprentice shall be trained in the use of new equipment, materials and processes as they come into use in the occupation.
- 3) The major categories in which apprentices will be trained (although not necessarily in the order listed) are as follows:

**The Competencies shall be measured by demonstrating the following tasks:**

- Document and maintain records of precision agriculture information.
- Collect information about soil or field attributes, yield data, or field boundaries, using field data recorders and basic geographic information systems (GIS).
- Use geospatial technology to develop soil sampling grids or identify sampling sites for testing characteristics such as nitrogen, phosphorus, or potassium content, pH, or micronutrients.
- Divide agricultural fields into georeferenced zones, based on soil characteristics and production potentials.
- Install, calibrate, or maintain sensors, mechanical controls, GPS-based vehicle guidance systems, or computer settings.

- Create, layer, and analyze maps showing precision agricultural data, such as crop yields, soil characteristics, input applications, terrain, drainage patterns, or field management history.
- Analyze geospatial data to determine agricultural implications of factors such as soil quality, terrain, field productivity, fertilizers, or weather conditions.
- Identify spatial coordinates, using remote sensing and Global Positioning System (GPS) data.
- Apply precision agriculture information to specifically reduce the negative environmental impacts of farming practices.
- Demonstrate the applications of geospatial technology, such as Global Positioning System (GPS), geographic information systems (GIS), automatic tractor guidance systems, variable rate chemical input applicators, surveying equipment, or computer mapping software.
- Draw or read maps, such as soil, contour, or plat maps.
- Project Management Software —Microsoft Teams: Utilize Microsoft Teams and Outlook to schedule and attend meetings, collaborate with team members, manage project tasks, and track progress.
- Spreadsheet software — Microsoft Excel: Use Microsoft Excel to analyze data, create spreadsheets, and perform calculations.
- Communicate projects and progress utilizing computer aided design CAD software.
- Utilize Geographic Information Systems (GIS) to communicate and share data.
- Utilize graphics, photo imaging, or mapping software to communicate and share information.
- Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work.
- Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
- Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Establishing and Maintaining Interpersonal Relationships — Developing constructive and cooperative working relationships with others.
- Communicating with People Outside the Organization — Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources.

#### **ARTICLE IV Related Instruction**

Apprentices shall satisfactorily complete prescribed courses of related and supplemental instruction, which will not be less than 144 hours per year. Related and supplemental instruction is approved by Davis Joint Unified School District, Winters Unified School District and delivered by Open Source Ag and Bayha Group.

Time spent in related and supplemental instruction may not be compensated.

**Precision Agriculture Technician Skills:****60 hours**

- Document and maintain records of precision agriculture information.
- Collect information about soil or field attributes, yield data, or field boundaries, using field data recorders and basic geographic information systems (GIS).
- Use geospatial technology to develop soil sampling grids or identify sampling sites for testing characteristics such as nitrogen, phosphorus, or potassium content, pH, or micronutrients.
- Divide agricultural fields into georeferenced zones, based on soil characteristics and production potentials.
- Install, calibrate, or maintain sensors, mechanical controls, GPS-based vehicle guidance systems, or computer settings.
- Create, layer, and analyze maps showing precision agricultural data, such as crop yields, soil characteristics, input applications, terrain, drainage patterns, or field management history.
- Analyze geospatial data to determine agricultural implications of factors such as soil quality, terrain, field productivity, fertilizers, or weather conditions.
- Identify spatial coordinates, using remote sensing and Global Positioning System (GPS) data.
- Apply precision agriculture information to specifically reduce the negative environmental impacts of farming practices.
- Demonstrate the applications of geospatial technology, such as Global Positioning System (GPS), geographic information systems (GIS), automatic tractor guidance systems, variable rate chemical input applicators, surveying equipment, or computer mapping software.
- Draw or read maps, such as soil, contour, or plat maps.
- Prepare reports in graphical or tabular form, summarizing field productivity or profitability.
- Contact equipment manufacturers for technical assistance, as needed.
- Support farm management tasks, including livestock care, pasture moves, garden harvesting, and crop planting.
- Test, augment, and measure soil biology and soil health.
- Set up and maintain water systems for efficient resource use.
- Keep work areas clean and organized, perform general farm maintenance tasks.
- Participate in farm team meetings to coordinate work and share knowledge.
- Record data pertaining to experimentation, research, or animal care.
- Prepare data summaries, reports, or analyses that include results, charts, or graphs to document research findings and results.
- Collect animal or crop samples. Examine animals or crop specimens to determine the presence of diseases or other problems.
- Determine the germination rates of seeds planted in specified areas.
- Assess comparative soil erosion from various planting or tillage systems, such as conservation tillage with mulch or ridge till systems, no-till systems, or conventional tillage systems with or without moldboard plows.
- Examine characteristics or behavior of living organisms.

**Microsoft Office Suite:****15 hours**

- Project Management Software —Microsoft Teams: Utilize Microsoft Teams and Outlook to schedule and attend meetings, collaborate with team members, manage project tasks, and track progress.
- Presentation software — Microsoft PowerPoint: Create engaging forestry and conservation visualizations.
- Spreadsheet software — Microsoft Excel: Use Microsoft Excel to analyze data, create spreadsheets, and perform calculations.
- Word processing software — Microsoft Word: Use Microsoft Word to create and edit professional documents, reports, and correspondence.

**Technology:****15 hours**

- Support and maintain computer databases and analytical or scientific software.
- Communicate projects and progress utilizing computer aided design CAD software.
- Utilize Geographic Information Systems (GIS) and Geographic Positioning Systems (GPS) to communicate and share data.
- Utilize graphics, photo imaging, or mapping software to communicate and share information.

**Communication:****20 hours**

- Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Establishing and Maintaining Interpersonal Relationships — Developing constructive and cooperative working relationships with others.
- Communicating with People Outside the Organization — Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources.
- Resolving Conflicts and Negotiating with Others — Handling complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.
- Performing for or Working Directly with the Public — Performing for people or dealing directly with the public.
- Interpreting the Meaning of Information for Others — Translating or explaining what information means and how it can be used.

**Analysis:****20 hours**

- Identifying Objects, Actions, and Events — Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Getting Information — Observing, receiving, and otherwise obtaining information from all relevant sources.
- Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work.

- Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
- Evaluating Information to Determine Compliance with Standards — Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Processing Information — Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.

**Operations:****20 hours**

- Inspecting Equipment, Structures, or Materials — Inspecting equipment, structures, or materials to identify the cause of errors or other problems or defects.
- Monitoring Processes, Materials, or Surroundings — Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.
- Documenting/Recording Information — Entering, transcribing, recording, storing, or maintaining information.
- Estimating the Quantifiable Characteristics of Products, Events, or Information — Estimating sizes, distances, and quantities; or determining time, costs, resources, or materials needed to perform a work activity.
- Repairing and Maintaining Mechanical Equipment — Servicing, repairing, adjusting, and testing machines, devices, moving parts, and equipment that operate primarily based on mechanical (not electronic) principles.

**Total      150 hours****ARTICLE V Ratio**

The ratio of apprentices to professional workers shall be:

Each professional worker may supervise 4 (four) apprentice(s)