



Precision Agricultural Technicians

CA and DOL – Precision Agricultural Technicians: [O*Net Code: 19-4012.01](#)

Apprenticeship Competencies. Related and Supplemental Instruction are not paid (compliance). On-the-job-training are paid hours. Apprenticeships span one year. Compliance allows completion in more than six months and less than one year in cases of demonstrated progress.

Competency Check List

Demonstrates Fundamentals: Apprentice can perform the task with some coaching.

Proficient in Task: Apprentice performs task properly and consistently.

Completion Date: Date apprentice completes final demonstration of competency.

Competencies:

1. Document and maintain records of precision agriculture information.
2. Collect information about soil or field attributes, yield data, or field boundaries, using field data recorders and basic geographic information systems (GIS).
3. 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.
4. Test, augment, and measure soil biology and soil health.
5. Divide agricultural fields into georeferenced zones, based on soil characteristics and production potentials.
6. Install, calibrate, or maintain sensors, mechanical controls, GPS-based vehicle guidance systems, or computer settings.
7. Contact equipment manufacturers for technical assistance, as needed.
8. Set up and maintain water systems for efficient resource use.
9. Create, layer, and analyze maps showing precision agricultural data, such as crop yields, soil characteristics, input applications, terrain, drainage patterns, or field management history.
10. Analyze geospatial data to determine agricultural implications of factors such as soil quality, terrain, field productivity, fertilizers, or weather conditions.
11. 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.
12. Draw or read maps, such as soil, contour, or plat maps.

13. 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.
14. Spreadsheet software — Microsoft Excel: Use Microsoft Excel to analyze data, create spreadsheets, and perform calculations.
15. Analyzing Data or Information — Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
16. Organizing, Planning, and Prioritizing Work — Developing specific goals and plans to prioritize, organize, and accomplish your work.
17. Making Decisions and Solving Problems — Analyzing information and evaluating results to choose the best solution and solve problems.
18. Communicating with Supervisors, Peers, or Subordinates — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
19. Establishing and Maintaining Interpersonal Relationships — Developing constructive and cooperative working relationships with others.
20. Communicating with People Outside the Organization — Communicating with people outside the organization, representing the organization to customers, the public, government, or 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 (RSI) will be provided by Open Source Agriculture Apprenticeship.

Time spent in related and supplemental instruction may not be compensated. Approximate RSI time by Category:

Precision Agriculture Technician Skills	60 Hours
Microsoft Office Suite	15 Hours
Technology	15 Hours
Communication	20 Hours
Analysis	20 Hours
Operations	20 Hours

Employers consistently ask for skills in the business - O*Net also list essential communication, technology, and communication competencies. Please refer to O*Net for their detailed lists. Typically, Open Source Ag and partner Bayha Group provide RSI and collaborate with employers for on-the-job training.