

YEARLY PLANNING DISCUSSION TEMPLATE

General Questions

Program Name Agriculture **Academic Year** 2023-2024

1. Has your program mission or primary function changed in the last year?

Every year the mission of the agriculture program, while remaining fundamentally aligned with previous years, increases in its scope of program offerings to meet the continual emergence of new approaches, practices, and technologies advancing the industry. The previous mission included the Agricultural Science degree and certificate, an Agricultural Plant Science transfer degree, Agricultural Business transfer degree, Crop Protection and Pest Control Adviser Preparation stackable certificates, and a certificate in Precision Agriculture that is in progress of development. Additional programs in mechanized/automated agriculture and food safety are under consideration. Therefore, the Program Mission will continue to expand to include the more diverse educational opportunities now available to agriculture students for adequate preparation for transfer and to meet workforce needs.

2. Were there any noteworthy changes to the program over the past year? (eg, new courses, degrees, certificates, articulation agreements)

Since the 2022-2023 Annual Update, there have not been any new courses, degrees, or certificates offered. Two new seasonally-based agriculture enterprise courses were approved for articulation to the Santa Maria Joint Union High School District (SMJUHSD) Mark Richardson CTE Center and Agricultural Farm: AG 190 Agricultural Production Enterprise, Fall-Winter and AG 191 Agricultural Production Enterprise, Spring. The name for the previously titled Agricultural Science A.S. and Certificate was changed to Agriculture to distinguish it from a new program that is called Agricultural Science which is designed specifically to meet the transfer requirements to Cal Poly SLO in their Agricultural Science program. Historically, the Agricultural Science course requirements were designed to adequately prepare students for employment or to transfer to any of the other CSU programs. However, with its unique requirements, students who wished to transfer to Cal Poly SLO and also earn a AHC degree were forced to take additional units and remain at AHC for extra semesters to fit in the required coursework. This change will allow those who wish to transfer to Cal Poly in Agricultural Science to also meet the requirements to earn an A.S. from AHC.

3. Is your two-year program map in place and were there any challenges maintaining the planned schedule?

The program maps for all agriculture program degrees and certificates have all been established and are published on the Agriculture program web page:

<https://www.hancockcollege.edu/pathways/sciences-technologies/agriculture.php>

4. Were there any staffing changes?

The longtime part-time instructor for AG 157 Agriculture Sales, Communication, and Leadership was not able to teach the course again following maternity leave and a new instructor, Dr. Shehbaz

Singh, was hired to teach the course. He will also be teaching AG 158 Agricultural Economics in Fall 2024 for the same reason. The previous part-time instructor for AG 160 Plant Propagation and Production was no longer available to teach the class this spring and the class was taught by an additional new part-time instructor, Dr. Terry Vassey.

5. What were your program successes in your area of focus last year?

The 6-year comprehensive program review was completed for the 2021-2022 academic year and therefore in 2022-2023, only the Annual Planning Update was completed without an area of focus reviewed. The area of focus selected for review during the current academic year was “Innovative Scheduling”. A student survey was administered during both Fall 2023 and Spring 2024 semesters to all students who have declared any one of the agriculture degrees or certificates as their major. Reflecting on the results of the survey, which was completed by 83 respondents, the following trends are noted:

- 93% of respondents are either very satisfied or somewhat satisfied with current scheduling options for their major
- 72% of respondents indicated that they are able to find major-required courses that fit into their schedules easily
- 72% of respondents also indicated that they have not had to delay graduation or program completion due to course scheduling conflicts
- The majority of respondents prefer full-semester, morning, and in-person classes
- 82% of respondents are working while attending college, with 38% working fewer than 20 hours/week, 45% working 20-39 hours/week, and 19% working more than 40 hours/week

Implementation of program modifications and a determination of successes will be included in the 2024-2025 annual update.

Learning Outcomes Assessment

With the recent transition to the new learning assessment tool, learning outcome data has not been collected in recent years. The new assessment program does not have program learning outcomes appropriately designated given the split of Agriculture from Viticulture & Enology. The Agriculture Program Coordinator attempted to have the online tool updated to reflect this correction but due to the departure of the Research and Planning Analyst, who has only recently been replaced, the corrections have not been made and therefore it has not been possible to enter assessment data in the new online tool.

a. Please summarize key results from this year’s assessment.
n/a – see statement above

b. Please summarize your reflections, analysis, and interpretation of the learning outcome assessment and data.
n/a – see statement above

- c. Please summarize recommendations and/or accolades that were made within the program/department.

n/a – see statement above

- d. Please review and attach any *changes* to planning documentation, including PLO rubrics, associations, and cycles planning.

n/a – see statement above

Distance Education (DE) Modality Course Design Peer Review Update (Please attach documentation extracted from the *Rubric for Assessing Regular and Substantive Interaction in Distance Education Courses*)

DE courses are not currently offered in the Agriculture program.

- a. Which courses were reviewed for regular and substantive interactions (RSI)?

n/a – see statement above

- b. What were some key findings regarding RSI?

n/a – see statement above

- Some strengths:
- Some areas of possible improvement:

- c. What is the plan for improvement?

n/a – see statement above

CTE two-year review of labor market data and pre-requisite review

- a. Does the program meet documented labor market demand?

According to the State of California Employment Development Department (EDD), the number of annual job openings in Santa Barbara County for those with knowledge and skills in agricultural and food science, agricultural management, and farming supervision is estimated to be 5,230. The average hourly wage earned by Farmers, Ranchers and Other Agricultural Managers is \$35.54 while the average hourly wage earned by soil and plant scientists is nearly \$41.00. Considering the employment opportunities in the state of California for Agricultural and Food Science Technicians; Farmers, Ranchers, and Other Agricultural Managers; First-Line Supervisors/Managers of Farming, Fishing, and Forestry Workers, and Animal Scientists there is expected to be over 10,000 job openings annually with an average hourly wage earned of \$35.81. There is an expected annual increase of 6.3% in job openings. The continued expansion of the AHC Agriculture program, guided by regional industry partner needs and recommendations, serves to meet the documented and projected workforce needs. According to the Fall 2023 Occupational Overview Reports (see attached Lightcast Analysis documents), regional employment in all agricultural sectors is higher than the national average with “aggressive” job posting demand for most agricultural occupations.

- b. How does the program address needs that are not met by similar programs?

The AHC Agriculture program is the only program in the region to offer a pathway to qualifying to take the California Department of Pesticide Regulation Pest Control Advisor licensing exam without the need to earn a bachelor's degree. This unique opportunity provides students with an option for a career that is in extremely high demand and also is one of the highest paid agriculture positions available. This is particularly important for our returning and working adult students who are not in a position to transfer to a university. Additionally, the Plant Science, Agriculture, Agricultural Science, and Agricultural Business programs offer students curricular options that meet their specific area of interest and serve both to meet transfer requirements and workforce needs. The Precision Agriculture program that is under development will further support industry needs and student interest by providing education and training in the use of emerging agricultural technologies.

- c. Does the employment, completion, and success data of students indicate program effectiveness and vitality? Please, explain.

See attached Perkins College Core Indicator Information for specific data. In reviewing the Core Indicator Report, it is noted that in the following areas Allan Hancock College is exceeding the 90% negotiated level for Postsecondary Retention & Placement and Employment by nearly 15%. The AHC Agriculture program is 3.2% higher than the 90% negotiated level for the 2023-2024 cohort for Earned Postsecondary Credential. The AHC agriculture program sees a large number of students who transferred without earning an associate's degree from AHC, which likely skews this statistic. The most recent data available from AHC Institutional Effectiveness is for the 2022-2023 academic year shows that overall program retention is 97% and overall program success is 86%. These statistics indicate that the program is effective in its ability to ensure student success and completion.

- d. Has the program met the Title 5 requirements to review course prerequisites, and advisories within the prescribed cycle of every 2 year for CTE programs

and every 5 years for all others?

Yes, the program has completed a comprehensive course review that included a review and update, when needed, of all course prerequisites and advisories.

e. Have recommendations from the previous report been addressed?

The recommendations from the previous annual report have not been implemented, although the highest priority need is currently being addressed with a proposal for dedicated instructional and skills lab space, which have been identified in Building W for use by the agriculture, viticulture & enology, and veterinary technology programs.

The goals that are yet to be achieved are those that require additional funding and support, such as:

- Improve and maintain the “living laboratory” student garden and fruit orchard to create an effective environment where agriculture students can participate in valuable experiential learning activities.
- Hire a classified farm technician
- *Tentatively being addressed:* Establish a dedicated laboratory and classroom space for agriculture courses
- Establish a dedicated space for an “ag center” where students can collaborate, study, and gather with peers, tutors, and faculty.
- Expand on Produce Safety program to develop food safety curriculum
- Expand on other curricula as recommended by the AHC Agriculture Advisory Committee
- Improve agriculture part-time faculty program involvement and increase industry and university experiences to improve instruction and SLO assessment
- Use a “farm to table” model to increase collaboration between AHC agriculture, viticulture, enology, nutrition and culinary programs
- Establish a “Week of Discovery” to adequately welcome and prepare incoming agriculture students and their families

Use the tables below to fill in **NEW** resources and planning initiatives that **do not apply directly to core topics**. *This section is only used if there are new planning initiatives and resources requested.*

Resource Requests: Please use the Resource Request Excel template located on the Program Review web page to enter resource requests for equipment, supplies, staffing, facilities, and misc. resources needed. Send completed excel document along with completed program view core topic for signature.

Resource requests are included in the submission of the Agriculture program review documents.

EQUIPMENT NEEDS

Enter equipment requests below. Equipment is defined as having useful life of more than one year **AND** a purchase price of more than \$200 each including tax. This includes all items that are part of the initial purchase.

Dept	Program	Source	Year	Initiative (Objective) Reference	Resource Need	Requested Item(s) Please include per item
English	English Rhetoric	Yearly Planning and Core	2022-2023	ER OBJ - 2	Equipment	/video cameras \$600 each

Navigation tabs: EQUIPMENT, SUPPLIES, STAFFING, TECHNOLOGY, FACILITIES

New Program Planning Initiative

Title: Enhancement of Student Instructional Space

Planning years: 2023-2024 to 2027-2028

Description:

The lack of dedicated instructional, storage, and meeting space for the agriculture program limits the ability of faculty to make the best use of time, knowledge, and student engagement. The following resources address the need to enhance the foundations of the agriculture program: improvement of the “living laboratory” student farm (vegetable garden, fruit orchard, greenhouse, and vineyard), establishment of a dedicated classroom and laboratory, and creation of a student hub/center for gathering to study, work on projects, and engage with agriculture program students and faculty.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: A full-time student farm technician would be responsible for maintaining all aspects of the student farm living laboratory. This would include planting, weeding, irrigation, germination, harvest, repairs, and supplies and equipment maintenance and inventory in the greenhouse, fruit orchard, vegetable garden, and occasionally in the vineyard. A dedicated staffing position will adequately manage the operational needs of the student farm. A farm technician is essential for the maintenance of this valuable living laboratory learning space. Students consistently experience improved learning outcomes when they have access to a well-maintained farm lab space.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: Establishment of formal, seasonal agricultural production enterprise projects on the AHC student farm to be managed by a student worker dedicated to assisting the Student Farm Technician. Supplies to include, but not limited to: potting mix, soil amendments, seeds, plants, irrigation supplies, tools, gloves, compost and BEAM building supplies, flags, plant tags, organic pest management materials, applicator equipment, and pest identification tools.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: Establish a dedicated laboratory, classroom, storage, and meeting space for agriculture courses and students. An area that can be designated as an “ag center” on campus would serve to alleviate scheduling conflicts and issues finding lecture/lab space. The current system finds the agriculture courses interfering with the classroom and lab space needs of the other programs in the department and prevents agriculture students from having an identified place to work, study, attend lectures and labs, and gather with peers, tutors, and faculty. An agriculture program “center” should include at least one dedicated wet laboratory complete with a full set of microscopes, storage capacity, and the many tools and supplies needed for plant science, plant pathology, entomology, weed science, animal science, soil science, plant propagation, horticulture, integrated pest management, and fruit science. This includes, but is not limited to: a fume hood, incubator, refrigerator/freezer, petri dishes, agar, gas chromatograph mass spectrometer. Additionally, the center should include at least one lecture classroom with all standard classroom technology. A study and meeting space is also essential for student collaboration, studying, tutoring, peer engagement, club meetings, and faculty interaction with students.

What college plans are associated with this Objective? (Please select from the list below):

Ed Master Plan Student Equity Plan Guided Pathways AB 705/1705

Technology Plan Facilities Plan Strong Workforce Equal Employment Opp.

Title V

New Program Planning Initiative

Title: Industry-relevant and Transfer-preparation Curriculum Development

Planning years: 2023-2024 to 2026-2027

Description:

The agriculture industry is constantly on the forefront of emerging technologies and adoption of new practices, techniques, and approaches to adapt to changing consumer demands, increasing laws and regulations, advanced technologies, natural resource conservation, and the health and safety of the consumer. Due to these qualities of the industry, higher education technical training and academic preparation must be regularly updated to adequately prepare students for success. The following resources will serve to address curriculum development needs to maintain the agriculture program at the leading edge of agricultural advancements.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: Complete the development of the precision ag program and consider integration or alignment with the AHC industrial technology program to establish ag machining, engineering, and manufacturing curriculum. With rapidly emerging advanced technologies to support agriculture production, such as engineering, manufacturing, operating, diagnosing, and repairing autonomous and precision equipment, there is a significant workforce gap for skilled technical employees. The completion of these programs will require faculty research, industry collaboration, curriculum development, and the purchase of supplies and equipment required for adequate instruction. Student drones, GIS/GPS software and devices, water/weather/soil moisture/evapotranspiration monitors, and related software will all be required for the effective implementation of the precision agriculture program. Equipment and supplies needed for revitalizing the current AHC Mechanized Agriculture course include: woodworking, metal, concrete, electrical, and plumbing tools and equipment for broad workforce training, including table saw, drill press, miter saw, and concrete mixer.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: Expand on the produce safety program that was initiated through a collaboration with Cal Poly State University, funded by a USDA FSOP grant to develop a comprehensive food safety curriculum. Under federal food safety regulations, all farms that produce commodities covered under the FSMA Produce Safety Rule are required to have at least one employee trained via a curriculum that is FDA approved for produce safety. In order to meet this significant industry need and provide students with preparation for this career pathway, a formal produce safety course and food safety certificate program are recommended. The addition of this program would further serve to prepare the AHC student farm for expansion of produce sales on a larger scale. Equipment and supplies will be required for microbial detection on plant tissues and in soil and water samples along with pH analysis, cleaning and sanitizing of all produce contact tools and surfaces. Faculty time for research and curriculum development will also be necessary.

Resources:

Priority Level: Low Medium High

Resource Type: Equipment Staff Faculty Supplies and Materials

Description: Per the recommendations of the AHC Agriculture Program Advisory Committee, exploration of new curriculum concepts should include: agriculture laws & regulations, natural resource management, certified crop adviser preparation, greenhouse technician and grower training, regenerative/sustainable/organic production preparation, and agriculture biotechnology. Faculty time for research and curriculum development will serve to identify industry needs and university articulation potential. Equipment and supplies required will be determined based on the content of the recommended courses.

What college plans are associated with this Objective? (Please select from the list below):

- Ed Master Plan
 Student Equity Plan
 Guided Pathways
 AB 705/1705
 Technology Plan
 Facilities Plan
 Strong Workforce
 Equal Employment Opp.
 Title V

New Program Planning Initiative	
Title:	Field to Table Interdisciplinary Collaborations
Planning years:	2024-2025
Description:	
<p>Given the significant shift in the agriculture industry toward increasing small, diversified farming operations and USDA support of the “farm to table” model that uses an interdisciplinary, cross-industry approach to close the gap in the food system between producer and consumer, it is valuable to expose students to the many ways in which such collaborations can lead to successful career opportunities. As such, the continued support of the AHC Field to Table Week of Welcome event and an expansion of collaborative food systems projects between the Agriculture, Viticulture & Enology, Food Science & Nutrition, and Culinary Arts & Management programs is an essential component of a successful agriculture program at AHC.</p>	
Resources:	
<p>Priority Level: Low <u>Medium</u> High Resource Type: <u>Equipment</u> <u>Staff</u> <u>Faculty</u> <u>Supplies and Materials</u> Quantity: n/a Per Item Price: unknown Price with taxes/shipping, etc: Description: Farm to Table interdisciplinary collaborations bring together students and faculty from the Agriculture, Viticulture & Enology, Culinary Arts & Management, and Food Science & Nutrition programs to plant, maintain, harvest, prepare, cook, and distribute student-grown produce from the AHC student farm. This program is in its infancy and has the potential to serve the broader AHC community with farm-fresh, student-grown, organic produce while providing involved students with industry-relevant collaborative experiences. To impart effective and impactful grassroots campus food systems change, this program will require funding to support classified staff and faculty, student farm equipment and supplies that include but are not limited to a modernized greenhouse for soilless and various media fruit, vegetable, and flower production, automated greenhouse controls, computerized irrigation, temperature management along with related and required computer programs, and all potting, irrigation, fertilizer, and pest management supplies.</p>	
Resources:	
<p>Priority Level: <u>Low</u> Medium High Resource Type: <u>Equipment</u> <u>Staff</u> <u>Faculty</u> <u>Supplies and Materials</u> Quantity: n/a Per Item Price: \$10,000 Price with taxes/shipping, etc: Description: The Field to Table Week of Welcome event has been a successful event since its inception in 2019. Incoming students in any of the “Field to Table” disciplines (agriculture, viticulture & enology, culinary arts & management, or food science & nutrition), are encouraged to join a collaboration among these programs through an intimate “Week of Welcome” experience. This 2 to 3-day event offers an introduction to the campus, program resources such as the student farm, vineyard, winery, culinary kitchen, and food science lab; the program coordinators, full-time faculty, and part-time faculty; and student services counselors. This initial welcome introduces students to the resources they will need to ensure success at AHC and beyond, including a student panel of program alumni. The support offered by the Field to Table Week of Welcome is holistic in its approach to acknowledge and encourage the whole person – academic, social, emotional, and cultural values. A relevant Field to Table industry tour day is a highlight of the event, connecting students in these disciplines with local businesses participating in sustainable food systems. This</p>	

valuable event provides incoming students in any of the connected Field to Table disciplines with the formative opportunity to prepare for entrance into AHC and connect with fellow incoming students. This event should continue to be hosted on an annual basis.

What college plans are associated with this Objective? (Please select from the list below):

- Ed Master Plan Student Equity Plan Guided Pathways AB 705/1705
- Technology Plan Facilities Plan Strong Workforce Equal Employment Opp.
- Title V



California Community Colleges Chancellor's Office
Management Information Systems Division
Career Technical Education (CTE) (Perkins V)

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Forms - Parameter Selection Area

Select Form Type: Select District/College: Select Fiscal Year: Select TOP Code:

Forms - Report

1 of 1 Find | Next

Section 1 Part F (for Colleges)

Page 1 of 1

College Core Indicator Information by 2-Digit TOP (2023-2024)

Perkins V, Title I, Part C Local Application

Agreement # _____ District/College: **ALLAN HANCOCK/ALLAN HANCOCK**

01 - Agriculture and Natural Resources

Instructions: Print out forms. Complete and sign bottom of last page.

Cohort Year CTE Enrollments: 735 **CTE Headcount: 338**
(includes CTE enrollments above introductory level only) (CTE students enrolled above introductory level only)

Core Indicator 1 - Cohort Yr: 2020- 2021 Postsecondary Retention & Placement			Negotiated Level		College Performance	Percent Above or Below Negotiated Level	Percent Above or Below 90% Negotiated Level
	Count	Total	State	District			
1 CTE Cohort*	72	74	91.75	91.75	97.30	5.5	14.7
2 Individuals Preparing for Non-Traditional Fields	20	21	91.75	91.75	95.24	3.5	12.7
3 Out of Workforce Individuals	1	1	91.75	91.75	100.00	N/A	N/A
4 Individuals with Economically Disadvantaged Families	50	51	91.75	91.75	98.04	6.3	15.5
5 English Learners			91.75	91.75	N/R	N/R	N/R
6 Single Parents	4	4	91.75	91.75	100.00	N/A	N/A
7 Individuals with Disabilities	6	6	91.75	91.75	100.00	N/A	N/A
8 Homeless Individuals	2	2	91.75	91.75	100.00	N/A	N/A
9 Youth in Foster Care	1	1	91.75	91.75	100.00	N/A	N/A
10 Youth with Parent in Active Military			91.75	91.75	N/R	N/R	N/R

Core Indicator 2 - Cohort Yr: 2020- 2021 Earned Postsecondary Credential			Negotiated Level		College Performance	Percent Above or Below Negotiated Level	Percent Above or Below 90% Negotiated Level
	Count	Total	State	District			
11 CTE Cohort*	35	42	89.00	89.00	83.33	-5.7	3.2
12 Individuals Preparing for Non-Traditional Fields	13	14	89.00	89.00	92.86	3.9	12.8
13 Out of Workforce Individuals			89.00	89.00	N/R	N/R	N/R
14 Individuals with Economically Disadvantaged Families	25	31	89.00	89.00	80.65	-8.4	0.5
15 English Learners			89.00	89.00	N/R	N/R	N/R
16 Single Parents			89.00	89.00	N/R	N/R	N/R
17 Individuals with Disabilities		2	89.00	89.00	0.00	N/A	N/A
18 Homeless Individuals			89.00	89.00	N/R	N/R	N/R
19 Youth in Foster Care			89.00	89.00	N/R	N/R	N/R

20	Youth with Parent in Active Military			89.00	89.00	N/R	N/R	N/R
Core Indicator 3 - Cohort Yr: 2020- 2021 Non-traditional Program Enrollment				Negotiated Level		College Performance	Percent Above or Below Negotiated Level	Percent Above or Below 90% Negotiated Level
		Count	Total	State	District			
21	CTE Cohort*	27	85	26.00	26.00	31.76	5.8	8.4
22	Individuals Preparing for Non-Traditional Fields	27	85	26.00	26.00	31.76	5.8	8.4
23	Out of Workforce Individuals		1	26.00	26.00	0.00	N/A	N/A
24	Individuals with Economically Disadvantaged Families	15	59	26.00	26.00	25.42	-0.6	2.0
25	English Learners			26.00	26.00	N/R	N/R	N/R
26	Single Parents	1	4	26.00	26.00	25.00	N/A	N/A
27	Individuals with Disabilities	1	7	26.00	26.00	14.29	N/A	N/A
28	Homeless Individuals		2	26.00	26.00	0.00	N/A	N/A
29	Youth in Foster Care		1	26.00	26.00	0.00	N/A	N/A
30	Youth with Parent in Active Military			26.00	26.00	N/R	N/R	N/R

Core Indicator 4 - Cohort Yr: 2020- 2021 Employment				Negotiated Level		College Performance	Percent Above or Below Negotiated Level	Percent Above or Below 90% Negotiated Level
		Count	Total	State	District			
31	CTE Cohort*	29	33	73.23	73.23	87.88	14.6	22.0
32	Individuals Preparing for Non-Traditional Fields	5	6	73.23	73.23	83.33	N/A	N/A
33	Out of Workforce Individuals			73.23	73.23	N/R	N/R	N/R
34	Individuals with Economically Disadvantaged Families	21	24	73.23	73.23	87.50	14.3	21.6
35	English Learners			73.23	73.23	N/R	N/R	N/R
36	Single Parents			73.23	73.23	N/R	N/R	N/R
37	Individuals with Disabilities	DR	DR	73.23	73.23	DR	N/A	N/A
38	Homeless Individuals			73.23	73.23	N/R	N/R	N/R
39	Youth in Foster Care			73.23	73.23	N/R	N/R	N/R
40	Youth with Parent in Active Military			73.23	73.23	N/R	N/R	N/R

*Note: Students meeting criteria for for this indicator with 12+ CTE units in a discipline (one course is above intro) in 3 years. See cohort specifications for full criteria.

The DR notation indicates privacy requirements - EDD requires that counts less than six not be displayed. N/A (Not Applicable) indicates denominators 10 or N/R (Not Reported) indicates categories where no participants were reported. These performance indicators include all vocational programs whether or not they are supported with Perkins Title IC Funds. For more detailed reports, see Core Indicators 'Summary' and 'Detail' Reports. Shaded areas are for your information and are not included as accountability measures.

By totaling each positive, negative, N/A, N/R outcome in the last column from items 1 - 40, I certify and acknowledge that performance in the 40 Core Indicator categories is as follows:

_____ of the 40 are at or above the District negotiated level(s);
 _____ of the 40 are below the District negotiated level(s);
 _____ of the 40 are list as (N/A, N/R)

Department Chair (or authorized Designee) : _____

Form 1 Part E-C Last Revised 02/01/2010

* If no district target is available then state targets will be used.



Soil and Plant Scientists in 2 California Counties

Contents

What is Lightcast Data?	1
Report Parameters	2
Executive Summary	3
Jobs	4
Compensation	6
Job Posting Activity	7
Demographics	11
Occupational Programs	14
Appendix A	15

What is Lightcast Data?

Lightcast data is a hybrid dataset derived from official government sources such as the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. Leveraging the unique strengths of each source, our data modeling team creates an authoritative dataset that captures more than 99% of all workers in the United States. This core offering is then enriched with data from online social profiles, resumé, and job postings to give you a complete view of the workforce.

Lightcast data is frequently cited in major publications such as *The Atlantic*, *Forbes*, *Harvard Business Review*, *The New York Times*, *The Wall Street Journal*, and *USA Today*.



Report Parameters

1 Occupation

19-1013 Soil and Plant Scientists

2 Counties

6079 San Luis Obispo County, CA

6083 Santa Barbara County, CA

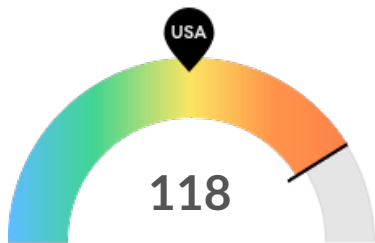
Class of Worker

QCEW Employees, Non-QCEW Employees, and Self-Employed

The information in this report pertains to the chosen occupation and geographical areas.

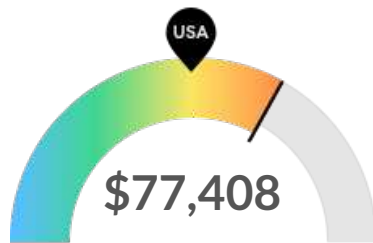
Executive Summary

Aggressive Job Posting Demand Over a Deep Supply of Regional Jobs



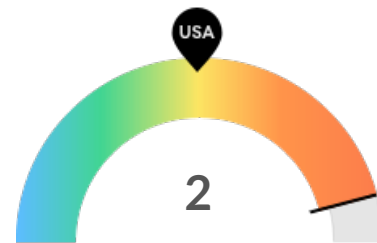
Jobs (2023)

Your area is a hotspot for this kind of job. The national average for an area this size is 47* employees, while there are 118 here.



Compensation

Earnings are high in your area. The national median salary for Soil and Plant Scientists is \$66,134, compared to \$77,408 here.



Job Posting Demand

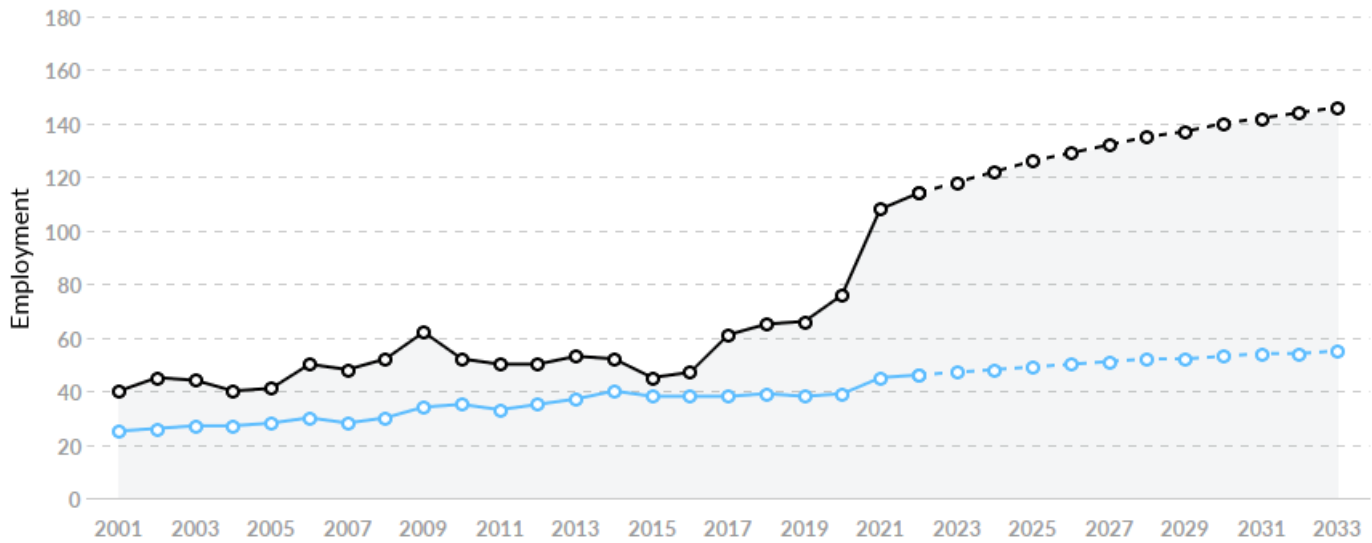
Job posting activity is high in your area. The national average for an area this size is 0* job postings/mo, while there are 2 here.

*National average values are derived by taking the national value for Soil and Plant Scientists and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Jobs

Regional Employment Is Higher Than the National Average

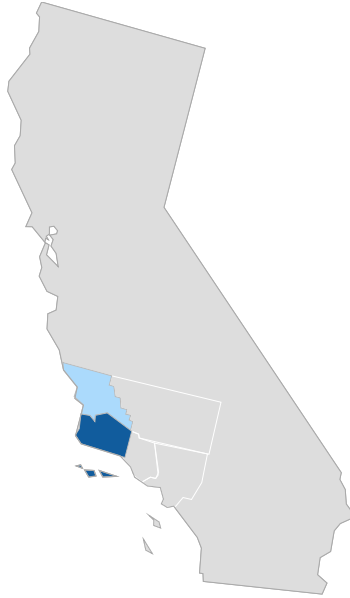
An average area of this size typically has 47* jobs, while there are 118 here. This higher than average supply of jobs may make it easier for workers in this field to find employment in your area.



Region	2023 Jobs	2033 Jobs	Change	% Change
● 2 California Counties	118	146	28	23.8%
● National Average	47	55	7	15.9%

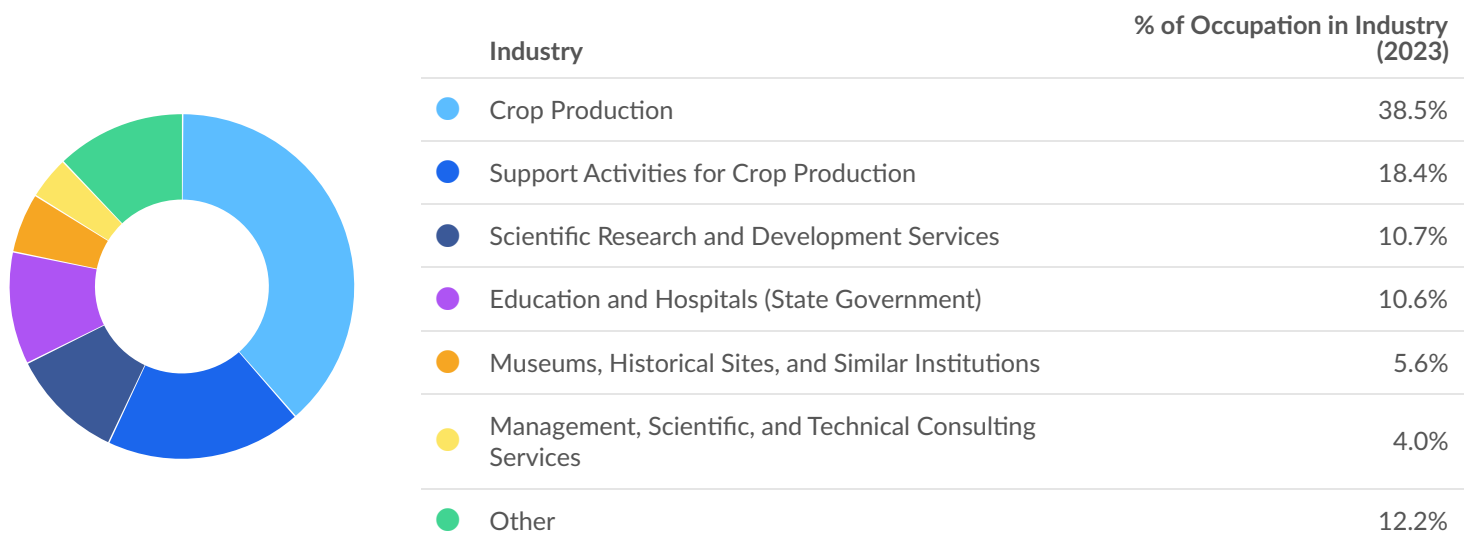
*National average values are derived by taking the national value for Soil and Plant Scientists and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Regional Breakdown



County	2023 Jobs
Santa Barbara County, CA	100
San Luis Obispo County, CA	18

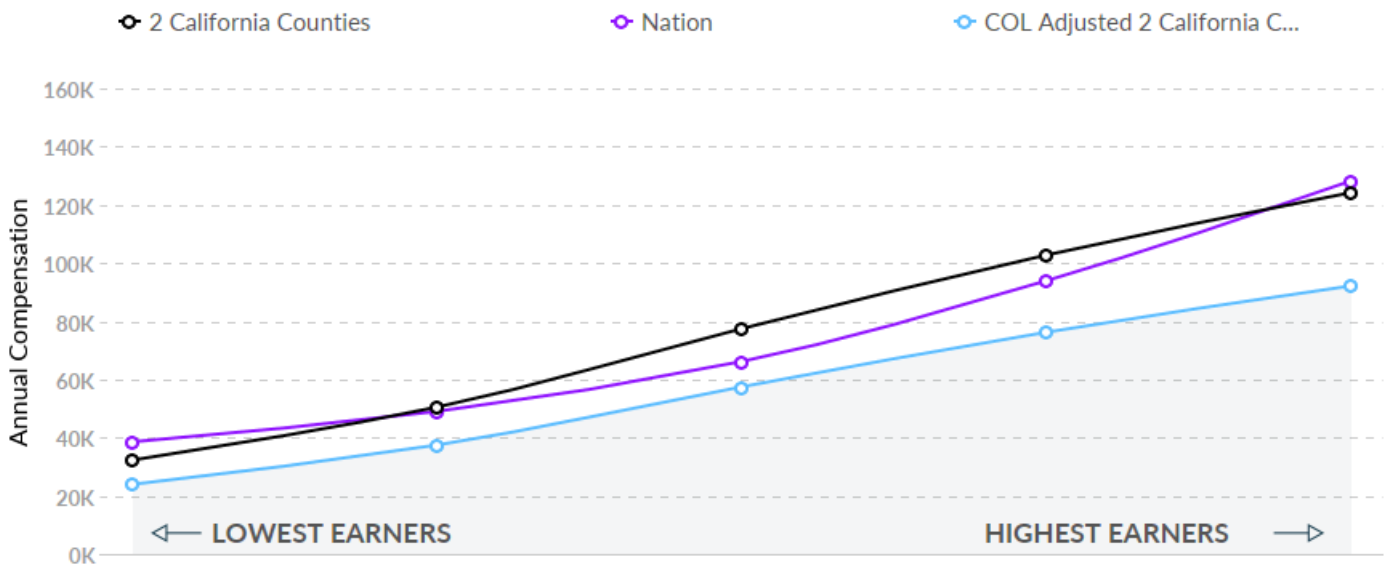
Most Jobs are Found in the Crop Production Industry Sector



Compensation

Regional Compensation Is 17% Higher Than National Compensation

For Soil and Plant Scientists, the 2021 median wage in your area is \$77,408, while the national median wage is \$66,134.



Job Posting Activity



9 Unique Job Postings

The number of unique postings for this job from Jan 2023 to Jun 2023.



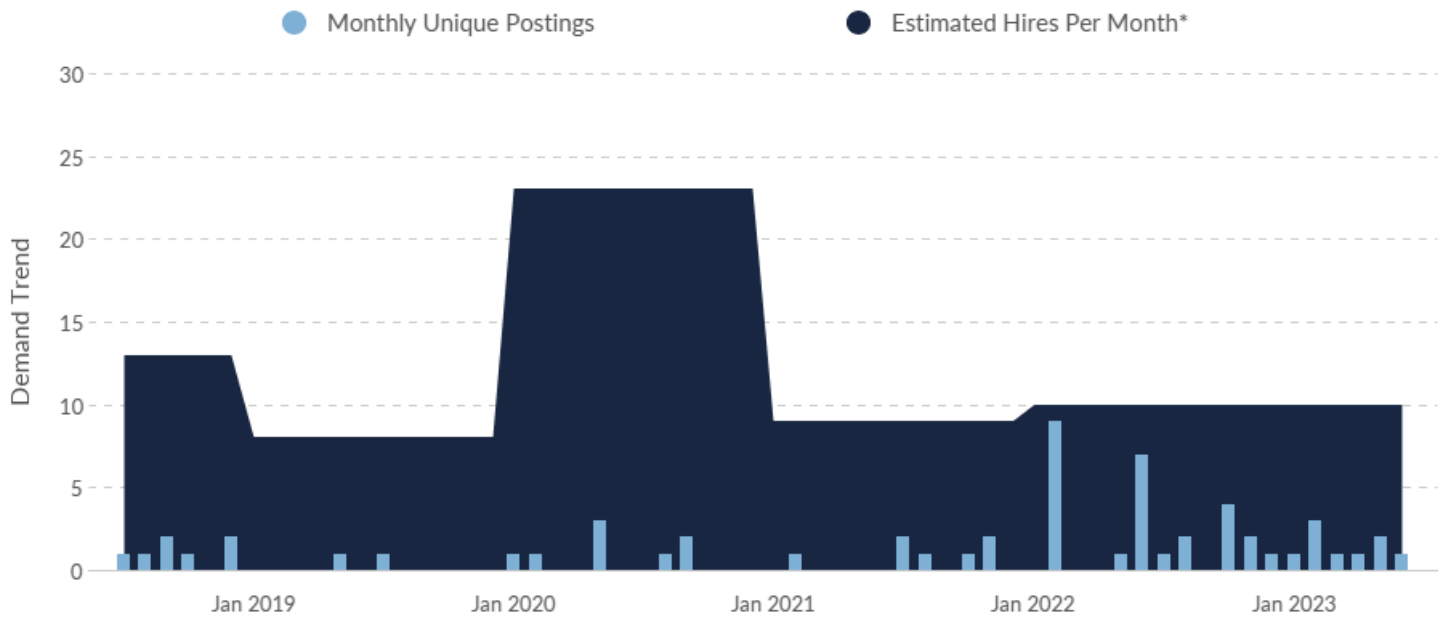
7 Employers Competing

All employers in the region who posted for this job from Jan 2023 to Jun 2023.



21 Day Median Duration

Posting duration is 12 days shorter than what's typical in the region.



Occupation	Avg Monthly Postings (Jan 2023 - Jun 2023)	Avg Monthly Hires (Jan 2023 - Jun 2023)
Soil and Plant Scientists	2	10

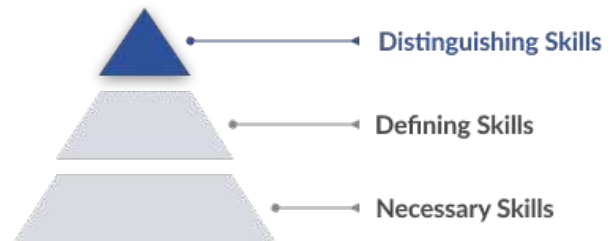
*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Lightcast hires are calculated using a combination of Lightcast jobs data, information on separation rates from the Bureau of Labor Statistics (BLS), and industry-based hires data from the Census Bureau.

Top Companies	Unique Postings
Ball Horticultural Company	2
University of California	2
Geosolutions	1
ManTech	1
Reiter Affiliated Companies	1
Stantec	1

Top Job Titles	Unique Postings
Plant Breeders	3
Botanists	2
Environmental Managers	2
Soils Technicians	1

Top Distinguishing Skills by Demand

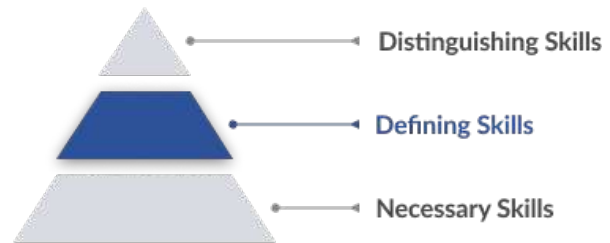
An occupation's Distinguishing Skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.



Skill	Salary Boosting	Job Postings Requesting
Crop Management		0
Certified Crop Advisor		0

Top Defining Skills by Demand

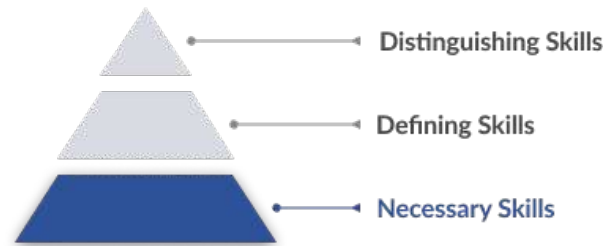
An occupation's Defining Skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.



Skill	Salary Boosting	Job Postings Requesting
Soil Science	✘	3
Agronomy	✘	1
Valid Driver's License	✘	1
Agriculture	✘	1

Top Necessary Skills by Demand

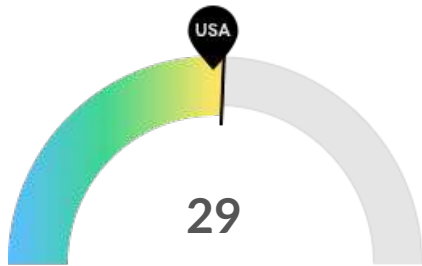
An occupation's Necessary Skills are the specialized skills required for that job and relevant across other similar jobs. An employee needs these skills as building blocks to perform the more complex Defining Skills.



Skill	Salary Boosting	Job Postings Requesting
Biology	✘	2
Botany	✘	2
Marketing	✘	2
Fertilizers	✘	1
Data Collection	✘	1
Environmental Science	✘	1
Irrigation (Landscaping And Agriculture)	✘	1
Plant Science	✘	0
Data Analysis	✘	0
Crop Production	✘	0

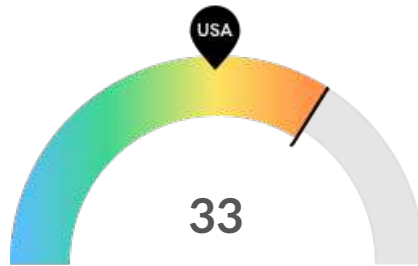
Demographics

Retirement Risk Is About Average, While Overall Diversity Is High



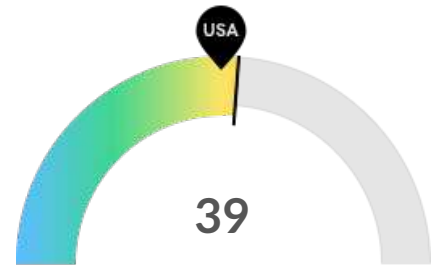
Retiring Soon

Retirement risk is about average in your area. The national average for an area this size is 28* employees 55 or older, while there are 29 here.



Racial Diversity

Racial diversity is high in your area. The national average for an area this size is 20* racially diverse employees, while there are 33 here.

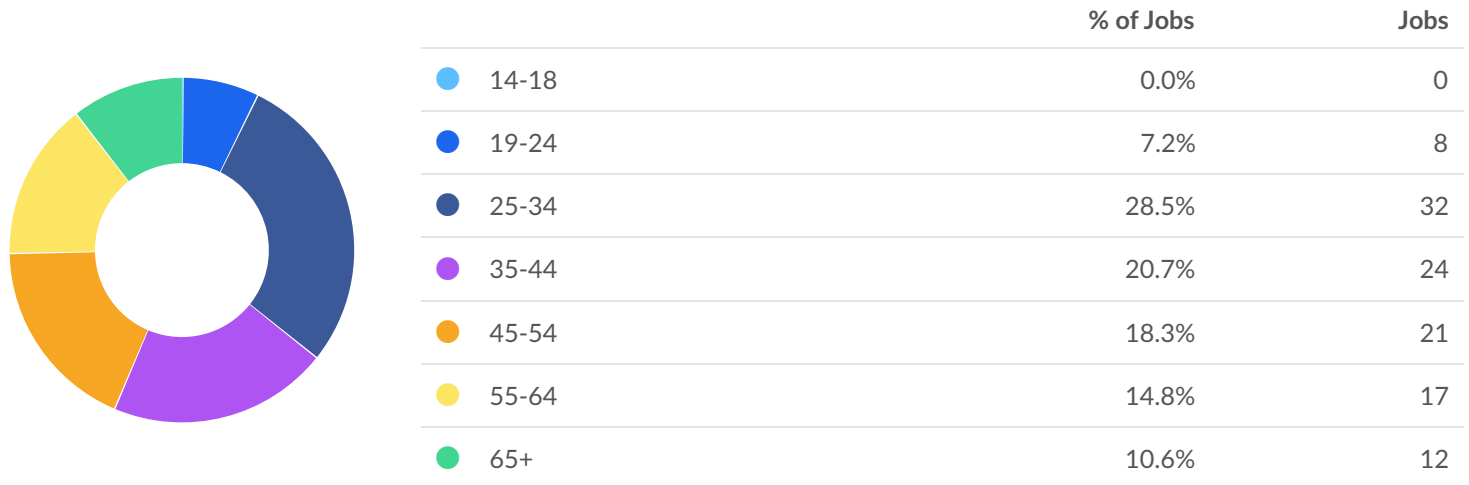


Gender Diversity

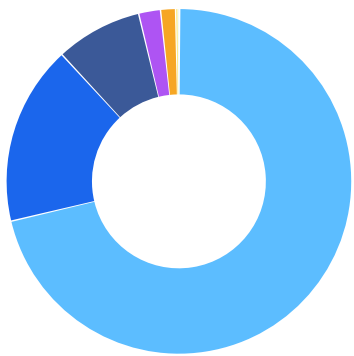
Gender diversity is about average in your area. The national average for an area this size is 36* female employees, while there are 39 here.

*National average values are derived by taking the national value for Soil and Plant Scientists and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Occupation Age Breakdown

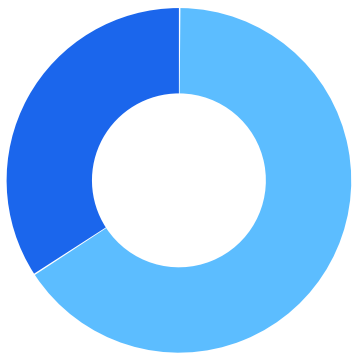


Occupation Race/Ethnicity Breakdown



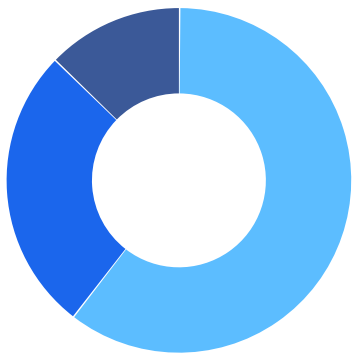
	% of Jobs	Jobs
● White	71.2%	81
● Asian	16.8%	19
● Hispanic or Latino	8.1%	9
● Two or More Races	2.0%	2
● Black or African American	1.4%	2
● American Indian or Alaska Native	0.2%	0
● Native Hawaiian or Other Pacific Islander	0.1%	0

Occupation Gender Breakdown



	% of Jobs	Jobs
● Males	65.8%	75
● Females	34.2%	39

National Educational Attainment



	% of Jobs
● Bachelor's degree	60.4%
● Master's degree	26.8%
● Doctoral or professional degree	12.8%

Occupational Programs



8 Programs

Of the programs that can train for this job, 8 have produced completions in the last 5 years.



1,254 Completions (2021)

The completions from all regional institutions for all degree types.



16 Openings (2021)

The average number of openings for an occupation in the region is 74.

CIP Code	Top Programs	Completions (2021)
26.0101	Biology/Biological Sciences, General	763
40.0501	Chemistry, General	209
01.1004	Viticulture and Enology	80
40.0601	Geology/Earth Science, General	55
01.1102	Agronomy and Crop Science	54
01.0000	Agriculture, General	52
03.0501	Forestry, General	41

Top Schools	Completions (2021)
University of California-Santa Barbara	541
California Polytechnic State University-San Luis Obispo	468
Santa Barbara City College	116
Allan Hancock College	60
Westmont College	38
Cuesta College	31

Appendix A

Soil and Plant Scientists (SOC 19-1013):

Conduct research in breeding, physiology, production, yield, and management of crops and agricultural plants or trees, shrubs, and nursery stock, their growth in soils, and control of pests; or study the chemical, physical, biological, and mineralogical composition of soils as they relate to plant or crop growth. May classify and map soils and investigate effects of alternative practices on soil and crop productivity.

Sample of Reported Job Titles:

Agronomist
Soil Fertility Extension Specialist
Plant Physiologist
Crop Nutrition Scientist
Research Soil Scientist
Microbiology Soil Scientist
Horticulture Specialist
Scientist
Research Scientist
Plant Research Geneticist

Related O*NET Occupation:

Soil and Plant Scientists (19-1013.00)

A man with dark hair, wearing a blue long-sleeved shirt and a grey apron, is walking away from the camera down a path in a greenhouse. The greenhouse has a curved metal frame and translucent panels. The plants are in rows, and there are yellow stakes with white labels in the foreground.

Farmers, Ranchers, and Other Agricultural Managers in 2 California Counties

Contents

What is Lightcast Data?	1
Report Parameters	2
Executive Summary	3
Jobs	4
Compensation	6
Job Posting Activity	7
Demographics	10
Occupational Programs	13
Appendix A	14

What is Lightcast Data?

Lightcast data is a hybrid dataset derived from official government sources such as the US Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics. Leveraging the unique strengths of each source, our data modeling team creates an authoritative dataset that captures more than 99% of all workers in the United States. This core offering is then enriched with data from online social profiles, resumé, and job postings to give you a complete view of the workforce.

Lightcast data is frequently cited in major publications such as *The Atlantic*, *Forbes*, *Harvard Business Review*, *The New York Times*, *The Wall Street Journal*, and *USA Today*.



Report Parameters

1 Occupation

11-9013 Farmers, Ranchers, and Other Agricultural Managers

2 Counties

6079 San Luis Obispo County, CA

6083 Santa Barbara County, CA

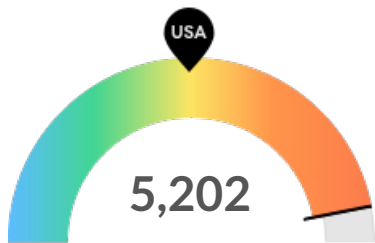
Class of Worker

QCEW Employees, Non-QCEW Employees, and Self-Employed

The information in this report pertains to the chosen occupation and geographical areas.

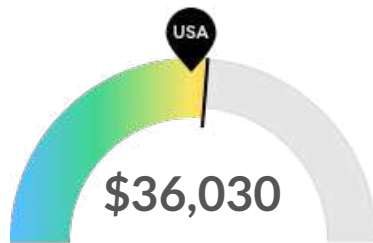
Executive Summary

Aggressive Job Posting Demand Over a Deep Supply of Regional Jobs



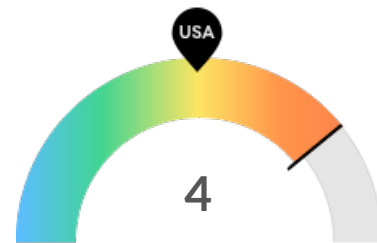
Jobs (2023)

Your area is a hotspot for this kind of job. The national average for an area this size is 1,289* employees, while there are 5,202 here.



Compensation

Earnings are about average in your area. The national median salary for Farmers, Ranchers, and Other Agricultural Managers is \$33,491, compared to \$36,030 here.



Job Posting Demand

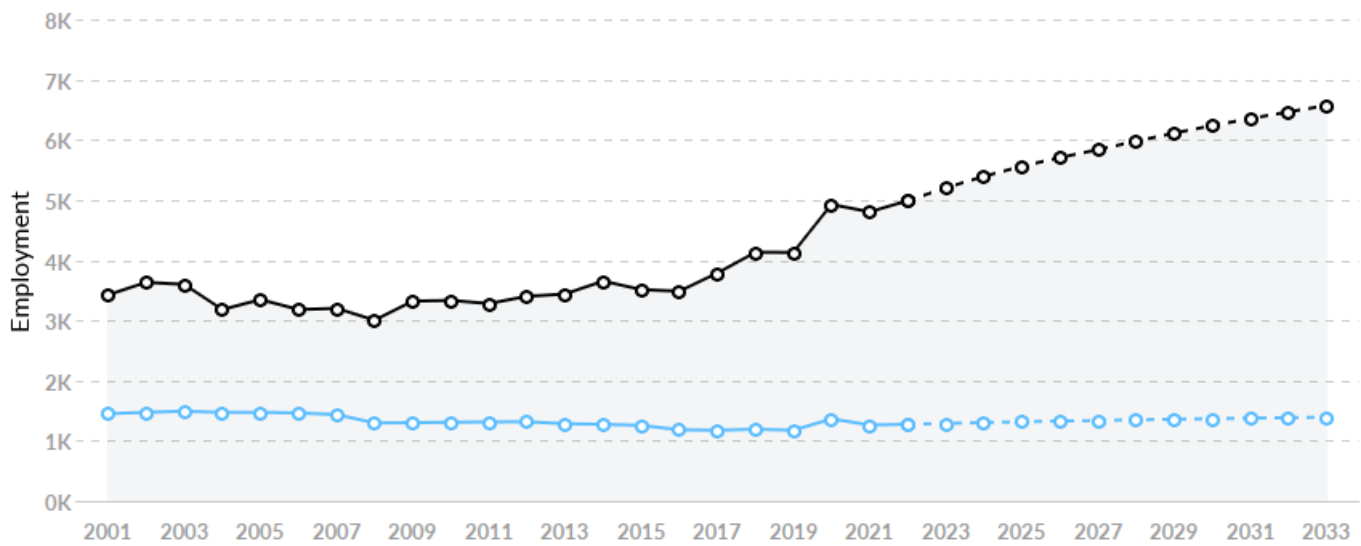
Job posting activity is high in your area. The national average for an area this size is 2* job postings/mo, while there are 4 here.

*National average values are derived by taking the national value for Farmers, Ranchers, and Other Agricultural Managers and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Jobs

Regional Employment Is Higher Than the National Average

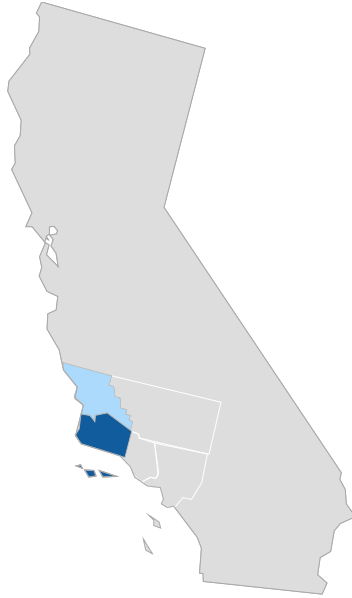
An average area of this size typically has 1,289* jobs, while there are 5,202 here. This higher than average supply of jobs may make it easier for workers in this field to find employment in your area.



Region	2023 Jobs	2033 Jobs	Change	% Change
● 2 California Counties	5,202	6,570	1,368	26.3%
● National Average	1,289	1,393	103	8.0%

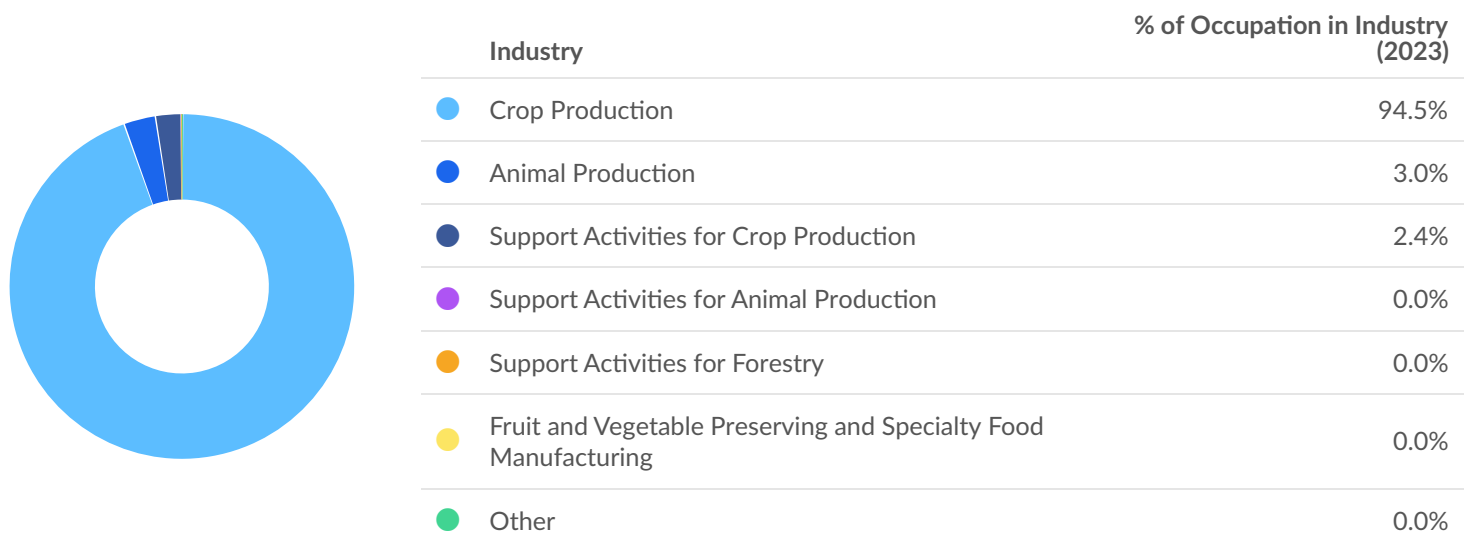
*National average values are derived by taking the national value for Farmers, Ranchers, and Other Agricultural Managers and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Regional Breakdown



County	2023 Jobs
Santa Barbara County, CA	4,560
San Luis Obispo County, CA	641

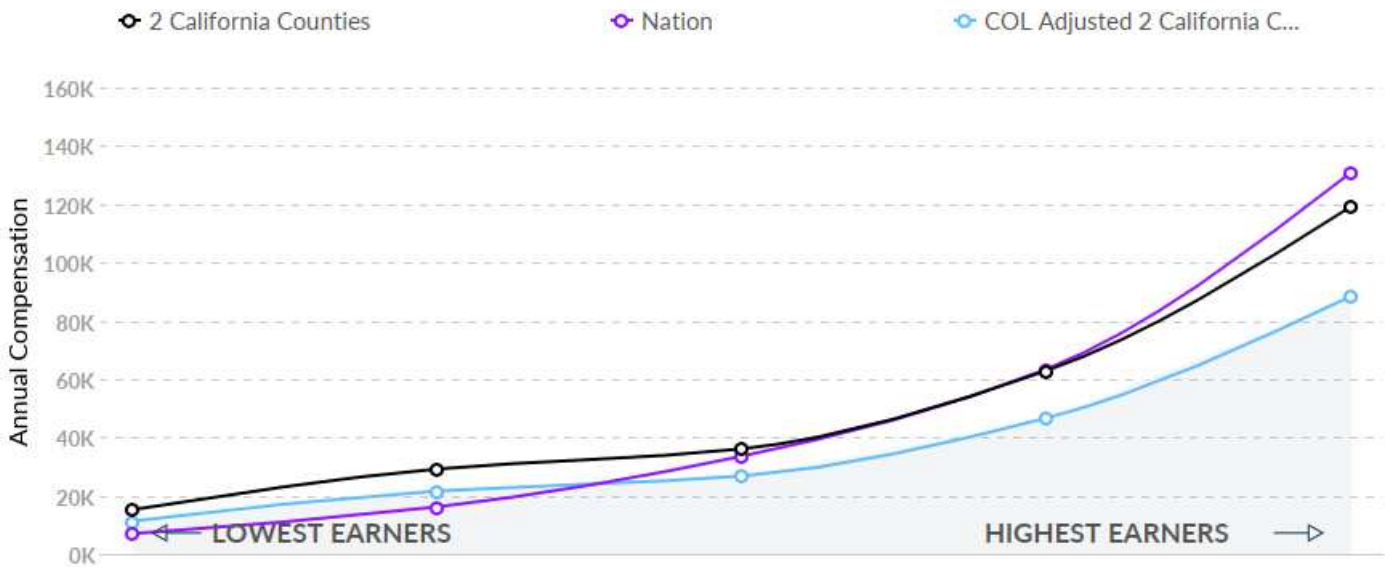
Most Jobs are Found in the Crop Production Industry Sector



Compensation

Regional Compensation Is 8% Higher Than National Compensation

For Farmers, Ranchers, and Other Agricultural Managers, the 2021 median wage in your area is \$36,030, while the national median wage is \$33,491.



Job Posting Activity



24 Unique Job Postings

The number of unique postings for this job from Jan 2023 to Jun 2023.



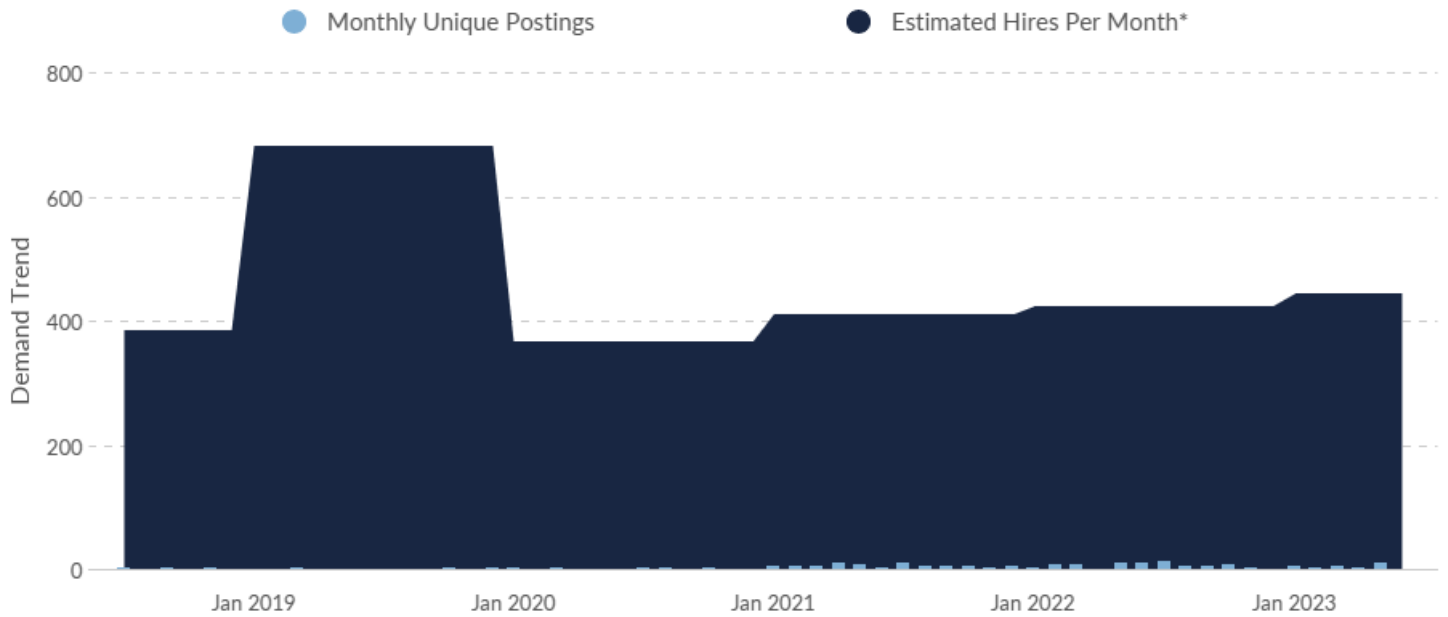
15 Employers Competing

All employers in the region who posted for this job from Jan 2023 to Jun 2023.



29 Day Median Duration

Posting duration is 4 days shorter than what's typical in the region.



Occupation	Avg Monthly Postings (Jan 2023 - Jun 2023)	Avg Monthly Hires (Jan 2023 - Jun 2023)
Farmers, Ranchers, and Other Agricultural Managers	4	443

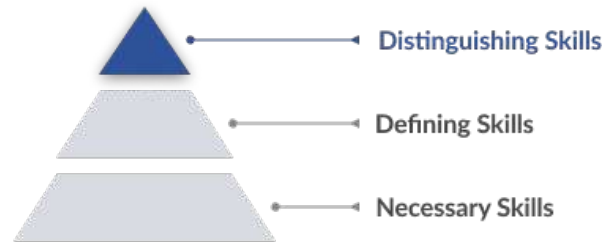
*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Lightcast hires are calculated using a combination of Lightcast jobs data, information on separation rates from the Bureau of Labor Statistics (BLS), and industry-based hires data from the Census Bureau.

Top Companies	Unique Postings
Good Samaritan Shelter	3
Speedling Incorporated	3
Cal Poly Corporation	2
City Of San Luis Obispo	2
Ecological Farming Association	2
Alisal Guest Ranch And Resort	1
Ambyth Estate	1
Bee Sweet Citrus	1
Calpoly Investments LLC.	1
Central Coast Aquarium	1

Top Job Titles	Unique Postings
Farm Managers	6
Farm Assistants	3
Fisheries Technicians	3
Greenhouse Managers	3
Farmers Market Managers	2
Activity Leaders	1
Animal Husbandry Interns	1
Horticulture Managers	1
Scan Technicians	1
Sustainable Agriculture Interns	1

Top Distinguishing Skills by Demand

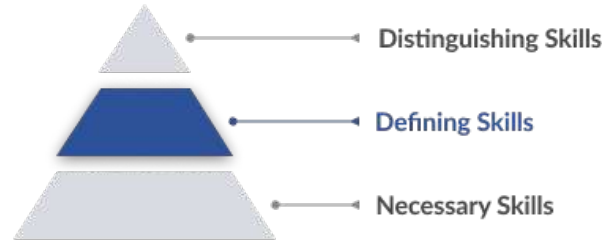
An occupation's Distinguishing Skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.



Skill	Salary Boosting	Job Postings Requesting
Cannabis Cultivation		1
Fish Culture		0
Aquaculture		0
Spawning		0

Top Defining Skills by Demand

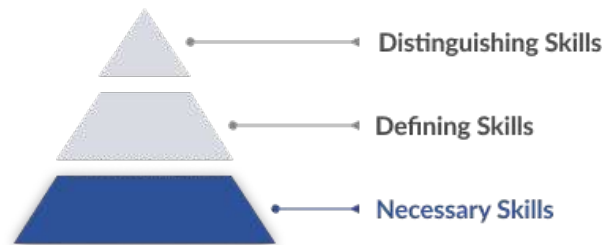
An occupation's Defining Skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.



Skill	Salary Boosting	Job Postings Requesting
Valid Driver's License	✘	9
Transplanting	✘	1

Top Necessary Skills by Demand

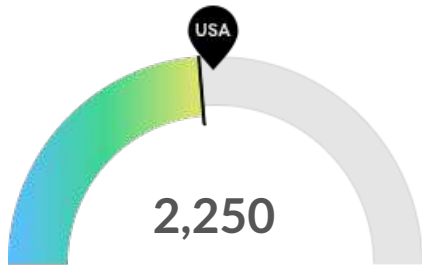
An occupation's Necessary Skills are the specialized skills required for that job and relevant across other similar jobs. An employee needs these skills as building blocks to perform the more complex Defining Skills.



Skill	Salary Boosting	Job Postings Requesting
Irrigation (Landscaping And Agriculture)	✘	7
Biology	✘	5
Agriculture	✘	4
Pruning	✘	1
Cannabis	✘	0
Food Safety And Sanitation	✘	0

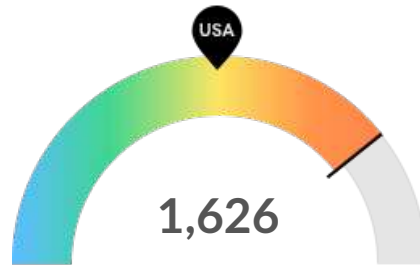
Demographics

Retirement Risk Is About Average, While Overall Diversity Is High



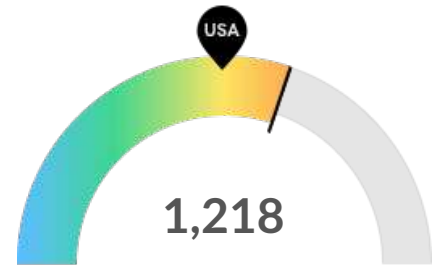
Retiring Soon

Retirement risk is about average in your area. The national average for an area this size is 2,422* employees 55 or older, while there are 2,250 here.



Racial Diversity

Racial diversity is high in your area. The national average for an area this size is 730* racially diverse employees, while there are 1,626 here.

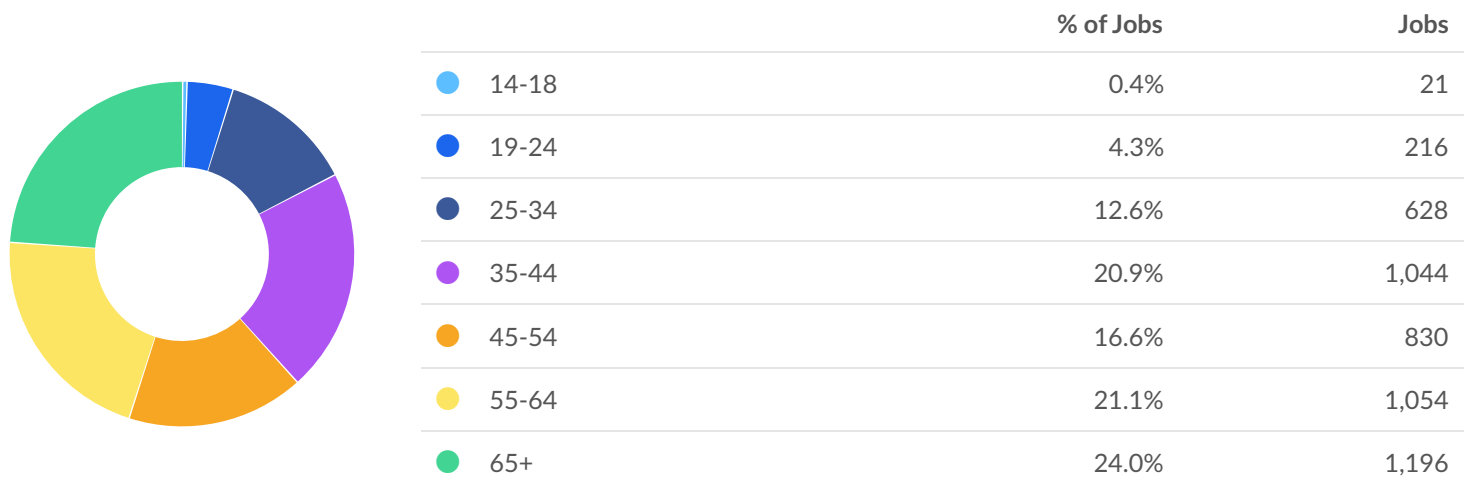


Gender Diversity

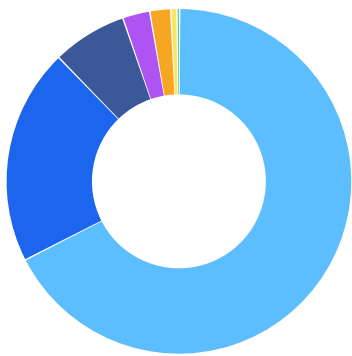
Gender diversity is high in your area. The national average for an area this size is 911* female employees, while there are 1,218 here.

*National average values are derived by taking the national value for Farmers, Ranchers, and Other Agricultural Managers and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Occupation Age Breakdown

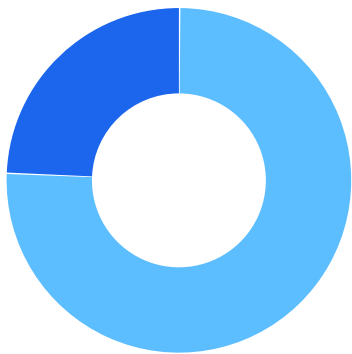


Occupation Race/Ethnicity Breakdown



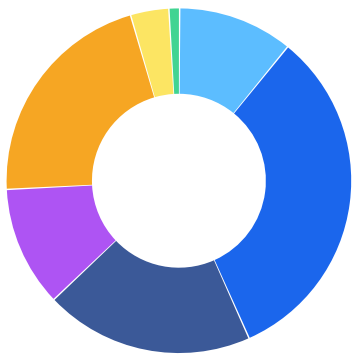
	% of Jobs	Jobs
White	67.4%	3,362
Hispanic or Latino	20.3%	1,011
Asian	7.0%	349
Two or More Races	2.6%	127
Black or African American	2.0%	97
American Indian or Alaska Native	0.6%	29
Native Hawaiian or Other Pacific Islander	0.3%	13

Occupation Gender Breakdown



	% of Jobs	Jobs
Males	75.6%	3,770
Females	24.4%	1,218

National Educational Attainment



	% of Jobs
● Less than high school diploma	10.8%
● High school diploma or equivalent	32.5%
● Some college, no degree	19.6%
● Associate's degree	11.3%
● Bachelor's degree	21.3%
● Master's degree	3.6%
● Doctoral or professional degree	1.0%

Occupational Programs



11 Programs

Of the programs that can train for this job, 11 have produced completions in the last 5 years.



604 Completions (2021)

The completions from all regional institutions for all degree types.



703 Openings (2021)

The average number of openings for an occupation in the region is 74.

CIP Code	Top Programs	Completions (2021)
01.0901	Animal Sciences, General	169
01.0102	Agribusiness/Agricultural Business Operations	161
01.1004	Viticulture and Enology	80
01.1102	Agronomy and Crop Science	54
01.0000	Agriculture, General	52
04.0601	Landscape Architecture	50
01.0905	Dairy Science	18
01.0304	Crop Production	14
01.0601	Applied Horticulture/Horticulture Operations, General	4
01.0603	Ornamental Horticulture	1

Top Schools	Completions (2021)
California Polytechnic State University-San Luis Obispo	540
Allan Hancock College	33
Cuesta College	26
Santa Barbara City College	5

Appendix A

Farmers, Ranchers, and Other Agricultural Managers (SOC 11-9013):

Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities. Excludes First-Line Supervisors of Farming, Fishing, and Forestry Workers (45-1011).

Sample of Reported Job Titles:

- Hatchery Manager
- Greenhouse Manager
- Fish Hatchery Manager
- Farm Manager
- Ranch Manager
- Nursery Manager
- Hatchery Supervisor
- Harvesting Manager
- Farm Operations Technical Director
- Aquaculture Director

Related O*NET Occupation:

Farmers, Ranchers, and Other Agricultural Managers (11-9013.00)

Agricultural Technicians in 2 California Counties

Contents

What is Lightcast Data?	1
Report Parameters	2
Executive Summary	3
Jobs	4
Compensation	6
Job Posting Activity	7
Demographics	10
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Appendix A	14

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Lightcast data is frequently cited in major publications such as *The Atlantic*, *Forbes*, *Harvard Business Review*, *The New York Times*, *The Wall Street Journal*, and *USA Today*.



Report Parameters

1 Occupation

19-4012 Agricultural Technicians

2 Counties

6079 San Luis Obispo County, CA

6083 Santa Barbara County, CA

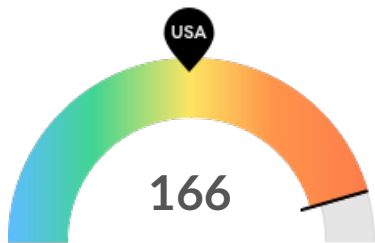
Class of Worker

QCEW Employees, Non-QCEW Employees, and Self-Employed

The information in this report pertains to the chosen occupation and geographical areas.

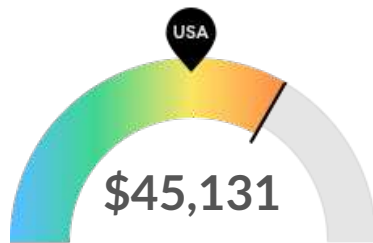
Executive Summary

Average Job Posting Demand Over a Deep Supply of Regional Jobs



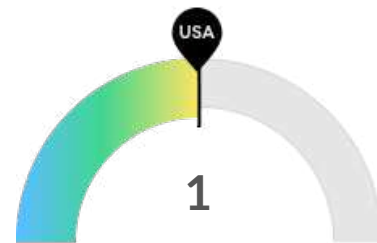
Jobs (2023)

Your area is a hotspot for this kind of job. The national average for an area this size is 47* employees, while there are 166 here.



Compensation

Earnings are high in your area. The national median salary for Agricultural Technicians is \$40,429, compared to \$45,131 here.



Job Posting Demand

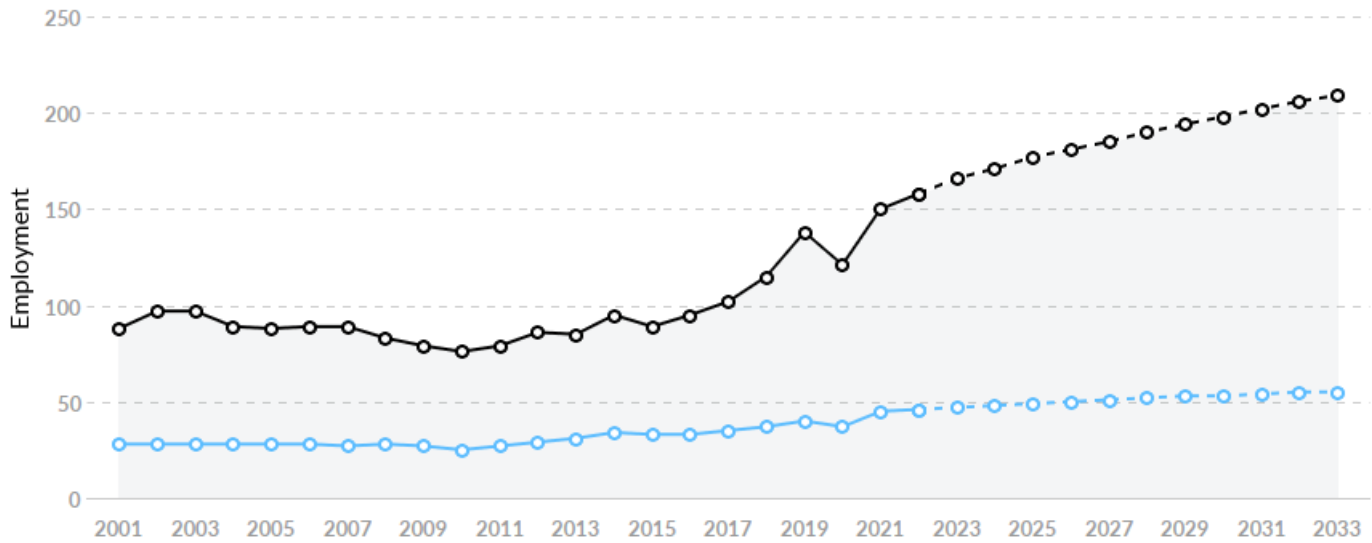
Job posting activity is about average in your area. The national average for an area this size is 1* job posting/mo, while there is 1 here.

*National average values are derived by taking the national value for Agricultural Technicians and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Jobs

Regional Employment Is Higher Than the National Average

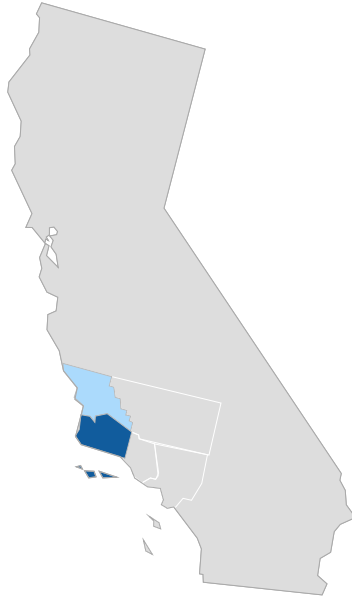
An average area of this size typically has 47* jobs, while there are 166 here. This higher than average supply of jobs may make it easier for workers in this field to find employment in your area.



Region	2023 Jobs	2033 Jobs	Change	% Change
● 2 California Counties	166	209	43	26.1%
● National Average	47	55	8	17.1%

*National average values are derived by taking the national value for Agricultural Technicians and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Regional Breakdown



County	2023 Jobs
Santa Barbara County, CA	141
San Luis Obispo County, CA	25

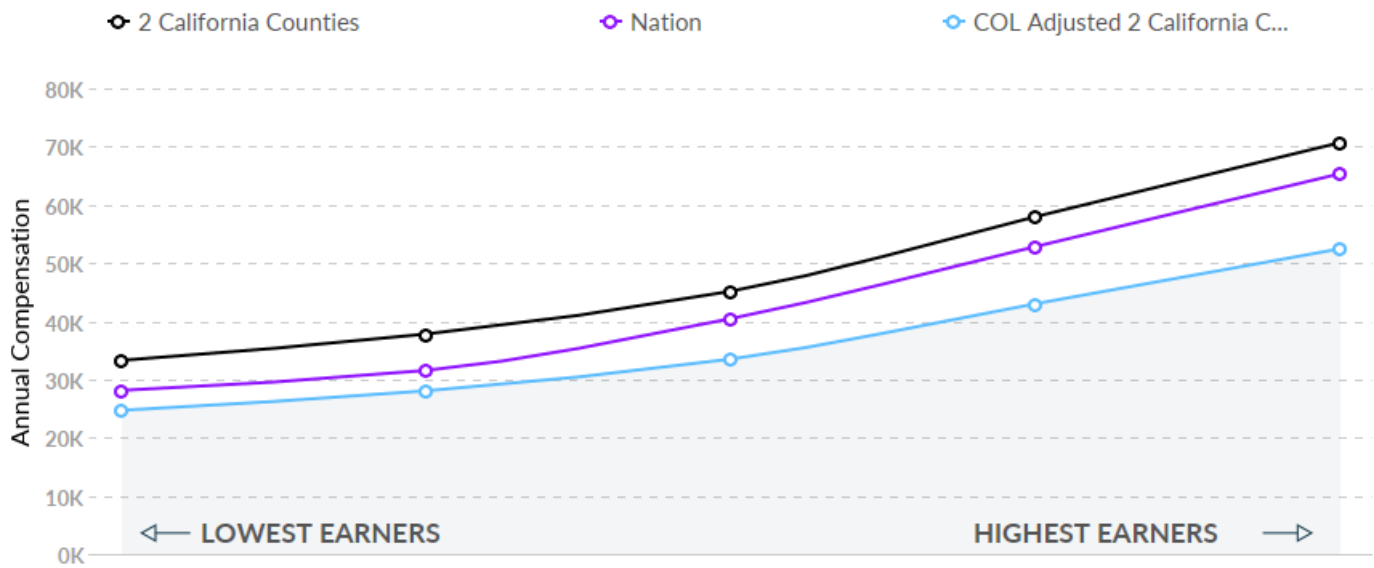
Most Jobs are Found in the Crop Production Industry Sector



Compensation

Regional Compensation Is 12% Higher Than National Compensation

For Agricultural Technicians, the 2021 median wage in your area is \$45,131, while the national median wage is \$40,429.



Job Posting Activity



7 Unique Job Postings

The number of unique postings for this job from Jan 2023 to Jun 2023.



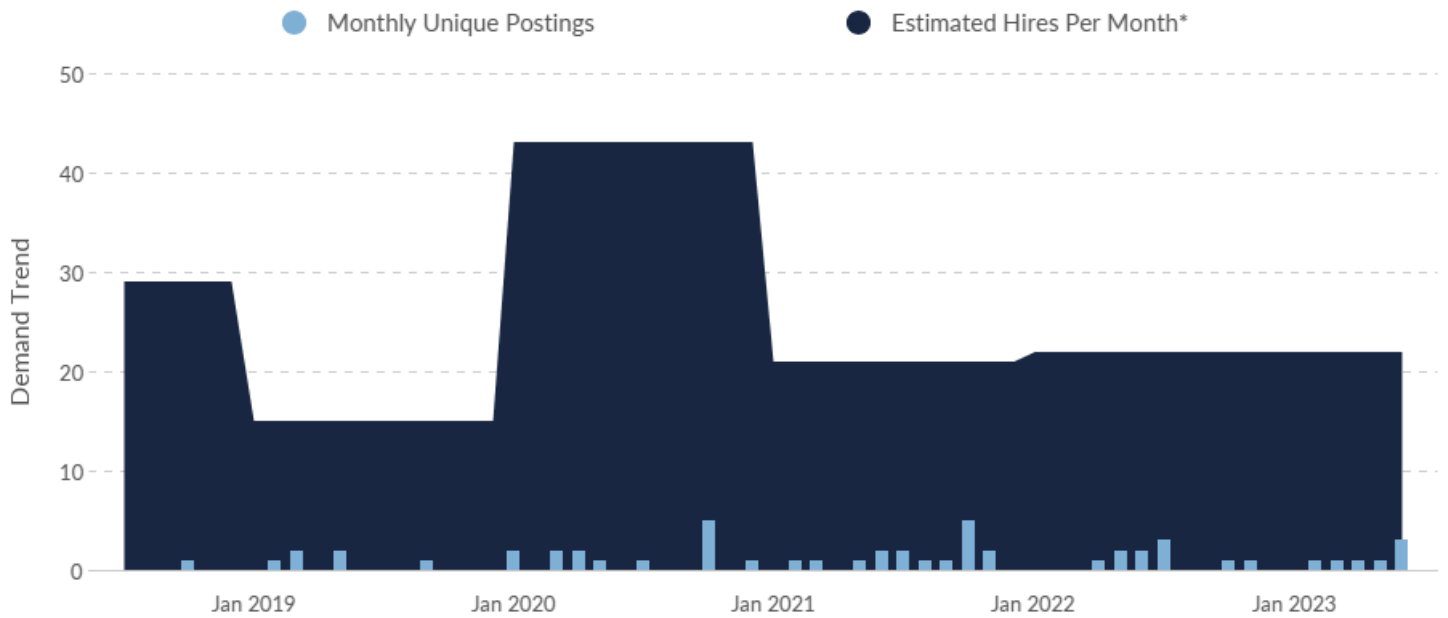
6 Employers Competing

All employers in the region who posted for this job from Jan 2023 to Jun 2023.



0 Day Median Duration

Posting duration is 33 days longer than what's typical in the region.



Occupation	Avg Monthly Postings (Jan 2023 - Jun 2023)	Avg Monthly Hires (Jan 2023 - Jun 2023)
Agricultural Technicians	1	22

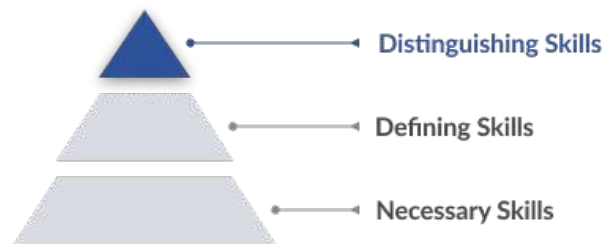
*A hire is reported by the Quarterly Workforce Indicators when an individual's Social Security Number appears on a company's payroll and was not there the quarter before. Lightcast hires are calculated using a combination of Lightcast jobs data, information on separation rates from the Bureau of Labor Statistics (BLS), and industry-based hires data from the Census Bureau.

Top Companies	Unique Postings
Pacific Ag Research	2
California Public Utilities Comm...	1
County Of San Luis Obispo	1
Le Vigne Winery	1
Viridian Staffing	1

Top Job Titles	Unique Postings
Agricultural Technicians	5
Harvest Cellar Interns	1
Harvest Managers	1

Top Distinguishing Skills by Demand

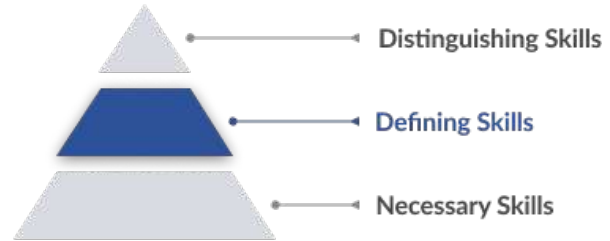
An occupation's Distinguishing Skills are the advanced skills that are called for occasionally. An employee with these skills is likely more specialized and able to differentiate themselves from others in the same role.



Skill	Salary Boosting	Job Postings Requesting
Crop Scouting		0
Commercial Applicator License		0

Top Defining Skills by Demand

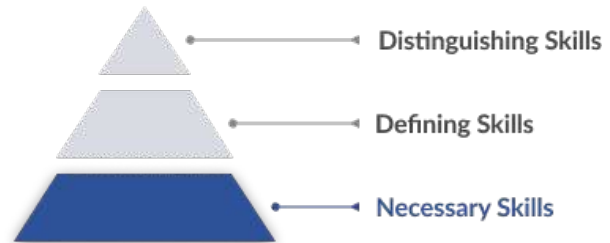
An occupation's Defining Skills represent the day-to-day tasks and responsibilities of the job. An employee needs these skills to qualify for and perform successfully in this occupation.



Skill	Salary Boosting	Job Postings Requesting
Agriculture	✘	4
Valid Driver's License	✘	1

Top Necessary Skills by Demand

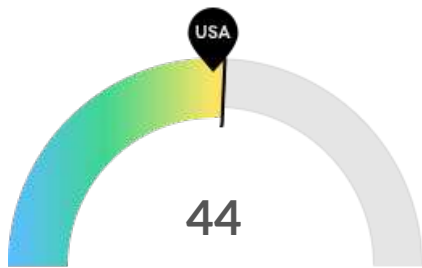
An occupation's Necessary Skills are the specialized skills required for that job and relevant across other similar jobs. An employee needs these skills as building blocks to perform the more complex Defining Skills.



Skill	Salary Boosting	Job Postings Requesting
Fertilizers	✘	2
Irrigation (Landscaping And Agriculture)	✘	1
Agronomy	✘	0
Marketing	✘	0
Precision Agriculture	✔	0

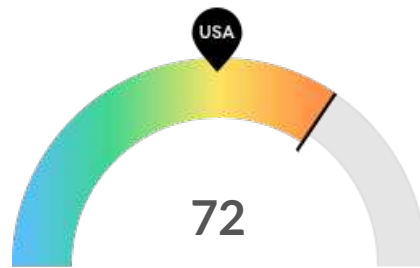
Demographics

Retirement Risk Is About Average, While Overall Diversity Is High



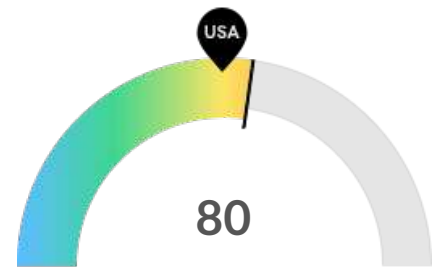
Retiring Soon

Retirement risk is about average in your area. The national average for an area this size is 42* employees 55 or older, while there are 44 here.



Racial Diversity

Racial diversity is high in your area. The national average for an area this size is 43* racially diverse employees, while there are 72 here.

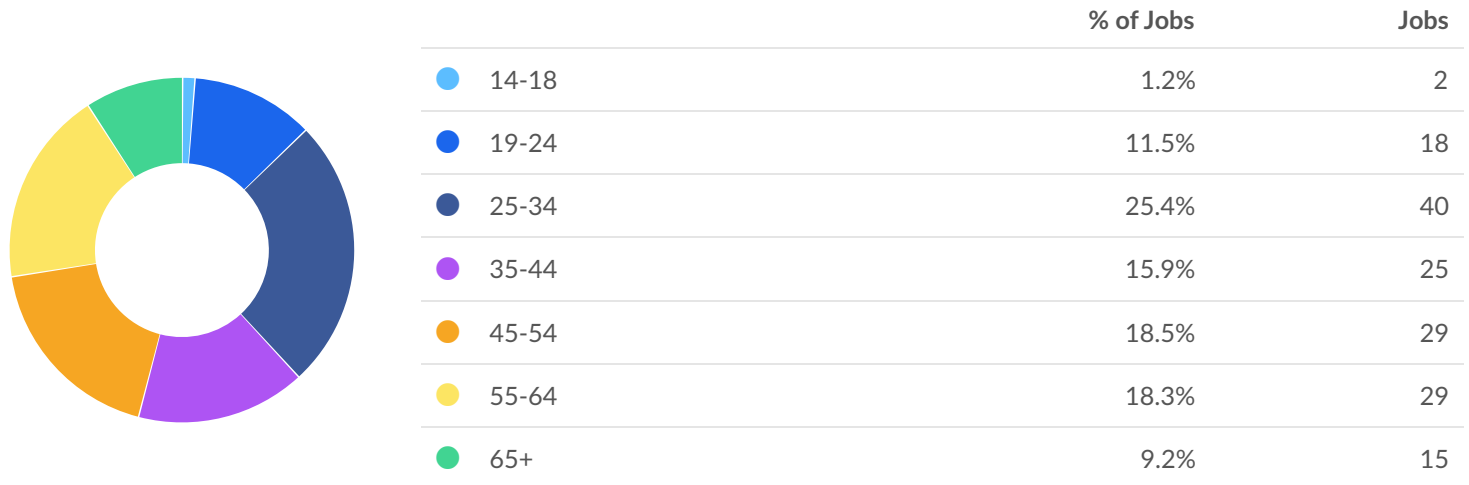


Gender Diversity

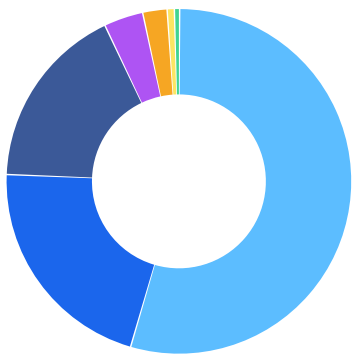
Gender diversity is high in your area. The national average for an area this size is 70* female employees, while there are 80 here.

*National average values are derived by taking the national value for Agricultural Technicians and scaling it down to account for the difference in overall workforce size between the nation and your area. In other words, the values represent the national average adjusted for region size.

Occupation Age Breakdown

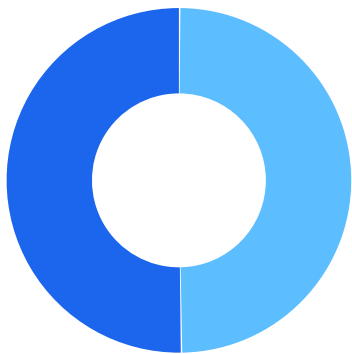


Occupation Race/Ethnicity Breakdown



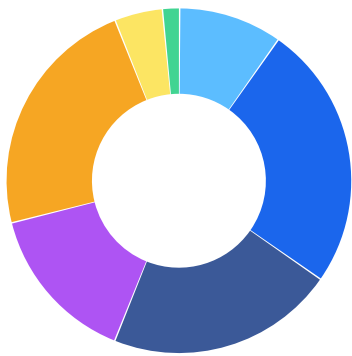
	% of Jobs	Jobs
White	54.5%	86
Hispanic or Latino	21.1%	33
Asian	17.3%	27
Black or African American	3.7%	6
Two or More Races	2.3%	4
Native Hawaiian or Other Pacific Islander	0.7%	1
American Indian or Alaska Native	0.5%	1

Occupation Gender Breakdown



	% of Jobs	Jobs
Males	49.7%	79
Females	50.3%	80

National Educational Attainment



	% of Jobs
● Less than high school diploma	9.7%
● High school diploma or equivalent	24.9%
● Some college, no degree	21.4%
● Associate's degree	15.0%
● Bachelor's degree	22.9%
● Master's degree	4.5%
● Doctoral or professional degree	1.6%

Occupational Programs



2 Programs

Of the programs that can train for this job, 2 have produced completions in the last 5 years.



132 Completions (2021)

The completions from all regional institutions for all degree types.



29 Openings (2021)

The average number of openings for an occupation in the region is 74.

CIP Code	Top Programs	Completions (2021)
01.1004	Viticulture and Enology	80
01.0000	Agriculture, General	52

Top Schools	Completions (2021)
California Polytechnic State University-San Luis Obispo	114
Allan Hancock College	18

Appendix A

Agricultural Technicians (SOC 19-4012):

Work with agricultural scientists in plant, fiber, and animal research, or assist with animal breeding and nutrition. Set up or maintain laboratory equipment and collect samples from crops or animals. Prepare specimens or record data to assist scientists in biology or related life science experiments. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.

Sample of Reported Job Titles:

- Seed Analyst
- Research Technician
- Research Specialist
- Research Associate
- Research Assistant
- Precision Agriculture Specialist (Precision Ag Specialist)
- Precision Farming Coordinator
- Crop Specialist
- Soil Fertility Specialist
- Nutrient Management Specialist

Related O*NET Occupations:

- Agricultural Technicians (19-4012.00)
- Precision Agriculture Technicians (19-4012.01)

Agriculture Program, 2023-2024

Area of Focus Discussion INNOVATIVE SCHEDULING

Innovative Scheduling embraces mapping, scheduling, and student outcomes. This focus includes a review of modalities, times, days, and sequence of courses. It supports areas of interest. It is based on student success, retention, and completion/graduation data. Sample activities include the following:

Possible topics:

- Review scheduling matrices – program map alignment, successes, and challenges.
- Collaborate with guided pathways success teams to assess scheduling conflicts and bottlenecks within and across disciplines that impact student completion.
- Assess mix of teaching modalities – mornings-afternoons-evenings; weekends; face-to-face, hybrid, and distance learning. NOTE: Hybrid is the combined use of various teaching modalities.
- Address scheduling conflicts or dependencies across disciplines or general education areas.
- Student access – cultivate majors, support cohorts and interdisciplinary connections.
- Review units and time to course and program completion.

1. What data were analyzed and what were the main conclusions?

An Innovative Scheduling Survey was provided by Institutional Effectiveness and widely shared with students who have selected any one of the agriculture-related majors. The survey was conducted during both Fall 2023 and Spring 2024 semesters and concluded at the end of Spring 2024 with 83 total respondents. The selected major of the respondents corresponded with the number of students who have declared each major, with an almost equivalent number of students in each of the dominant pathways (30% Agricultural Science, 27% Agricultural Business, and 25% Plant Science). An additional 10% of respondents have declared the Crop Protection/Pest Control Adviser Preparation pathway while 8% selected “other agriculture related major” which they indicated was predominantly animal science and viticulture.

93% of respondents were either “very satisfied” (43%) or “somewhat satisfied” (50%) with the current schedule for courses in their major. 72% of students have been able to find courses that fit their schedule and major requirements easily and likewise 72% of students have not had to delay graduation or program completion due to course scheduling conflicts. While the majority of students (47%) selected “difficulty balancing work and class schedules” as a reason for scheduling conflicts, an additional 34% cited “time conflicts between required courses”, 22% “lack of evening or weekend course options”, and 34% “insufficient course offerings during a specific semester”.

61% of respondents prefer the standard 17-week course length, while 26% selected a 12-week format, and 13% prefer an 8-week course length. The majority of students (71%) are able to attend classes during the 8:00 am – 12:00 pm class time, while a nearly equal number prefer either 12:00 pm – 4:00 pm (51%) or 5:00 – 10:00 pm (48%). 93% of respondents prefer in-person (traditional face to face) courses.

82% of responding students are working while attending Allan Hancock College and of those, 55% are working between 10-29 hours per week, while 33% are working 30 hours per week or more (19% of those are working more than 40 hours per week).

The complete survey results are attached to this report.

2. Based on the data analysis and looking through a lens of equity, what do you perceive as *challenges* with student success or access in your area of focus?

Considering both the quantitative data and the student feedback provided in the answers to the open-ended survey questions, there are some key recommendations to consider:

- a. Several students commented about the semester offerings of agriculture major courses, stating that since each one is only offered in either fall or spring semester, it can be problematic for scheduling. This could be particularly true for student athletes or for those who work in positions that require more hours during certain seasons.
- b. The cancellation of major-required courses due to low enrollment poses a challenge for those students pursuing a lower enrolled major.
- c. While careful attention is already paid to not overlapping agriculture courses with viticulture & enology courses so that scheduling conflicts are minimized, one concern that was highlighted by the survey is the long gap between morning agriculture classes (which often run from 8:00 – 10:50 am) and evening agriculture classes (which often don't start until 5:30 or 6:00 pm). This is particularly problematic for commuter students.
- d. There were some comments also regarding the length of the class meetings, which is nearly 3 hours for all of the AHC agriculture classes.

3. What are your plans for change or *innovation*?

In an effort to address the concerns shared by students, the following options might be considered:

- a. Assess the possibility of offering some of the courses that have two lab sections (double lecture) or consistently high enrollment in one semester as one-section courses in both semesters. This could be for AG 125 Introduction to Soil Science, AG 161 Introduction to Plant Science, and/or AG 152 Introduction to Animal Science. Additionally, if these classes are offered in both fall and spring semesters, consider scheduling them for different days and/or times each semester to better accommodate varying student schedules. For example, AG 161 could be taught in the fall on Tuesdays/Thursdays from 8:00 – 10:50 am and in the spring on Mondays/Wednesdays from 4:00 – 6:50 pm.
- b. Efforts are already underway to spread out the course offerings of major elective courses with the intention of boosting enrollment during the semesters that those courses are offered.

- c. The program coordinator is working with the AHC Agriculture Advisory Committee, industry experts, and industry organizations to determine an effective strategy for providing students with the content of AG 162 Agricultural Plant Pathology, AG 163 Economic Entomology, and AG 164 Weed Science in a combined course that would be offered every other year in order to address the consistently low enrollment in these very specific classes.
- d. Evaluate the possibility of splitting some of the 3-hour lecture classes into two 1.5-hour class meetings twice a week.

4. How will you *measure* the results of your plans to determine if they are successful?

Validation for Program Planning Process: If you have chosen to do the Validation this year, please explain your process and the findings.

Measure of the success of the implementation of planned course adjustments based on the Innovative Scheduling student survey will be evaluated in the following ways:

- a. Change in enrollment for all agriculture classes (positive, negative, or unchanged).
- b. Timely completion of degree and/or certificate programs for students in any of the agriculture majors.
- c. Student survey to assess satisfaction with changes that have been implemented.

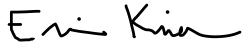
Validation for the Agriculture program is not occurring during this 2023-2024 program review process.

- 1. Who have you identified to validate your findings? (Could include Guided Pathway Success Teams, Advisory Committee Members, related faculty, industry partners or higher education partners)
n/a – see comment above
- 2. Are there specific recommendations regarding the core topic responses from the validation team?
n/a – see comment above

Based on the narratives for the prompts above, what are some program planning initiatives and resources needed for the upcoming years? Use the tables below to fill in **NEW** resources and planning initiatives. ***This section is only used if there are new planning initiatives and resources requested that pertain to the Core Topic only.***

Resource requests for the Agriculture program are provided in the Yearly Update document, as they pertain to the overall program needs rather than the Core Topic only.

Program Review Signature Page:



Program Review Lead

Date


Sean Abel (Jun 27, 2024 17:07 PDT)

Program Dean

Date



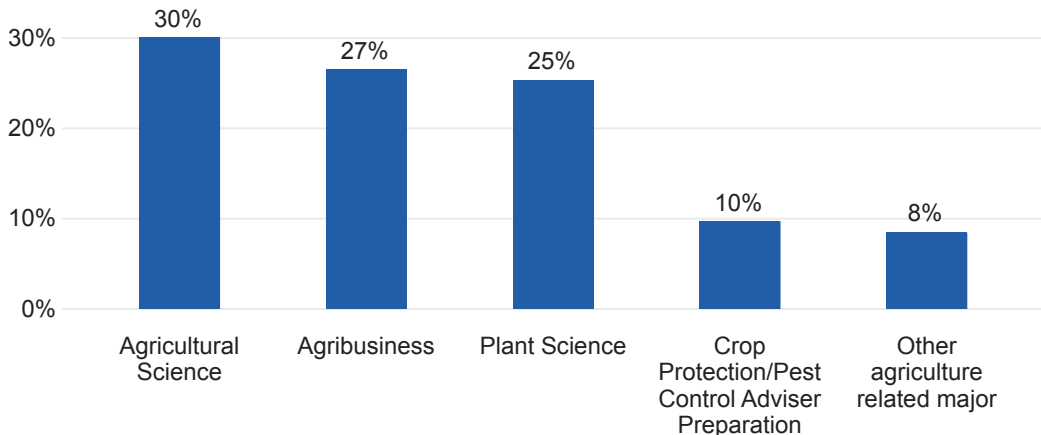
Vice President, Academic Affairs

Date

AG Innovative Scheduling Survey Fall 2023-Spring 2024

What is your current major or program of study? - Selected Choice

83 Responses



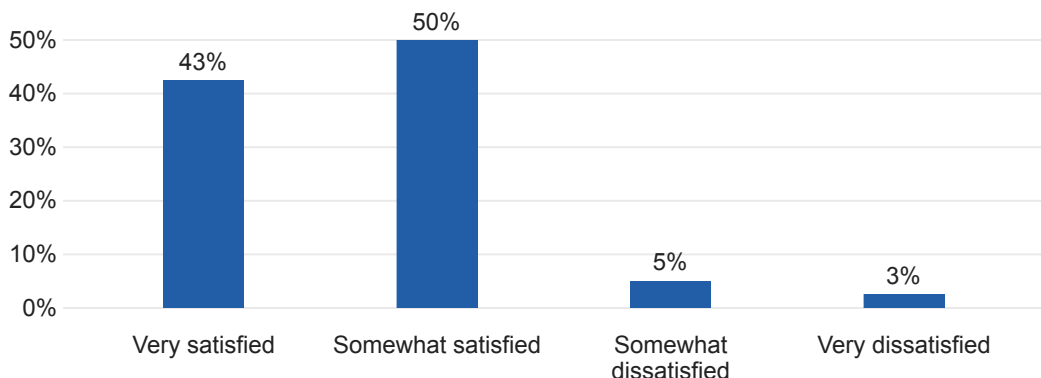
Other agriculture related major - Text

Other agriculture related major - Text

- VEN
- Viticulture and Enology
- VEN
- Viticulture and enology
- Animal Science and Food Science/Technology
- animal science

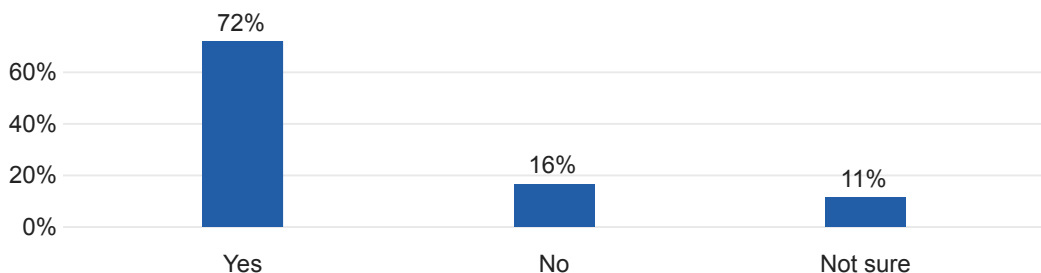
How satisfied are you with the current scheduling options for courses in your major?

80 Responses



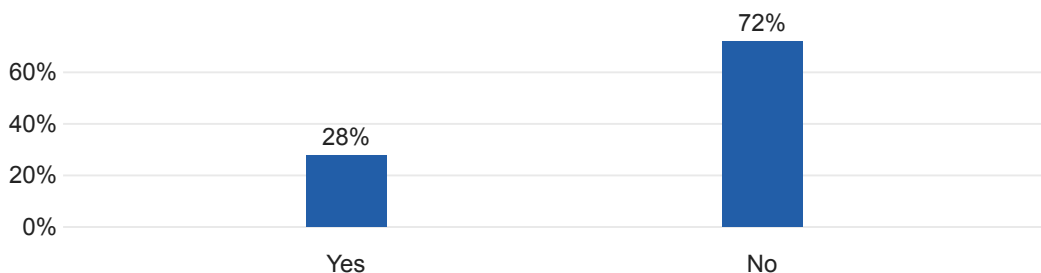
Are you able to find courses that fit your schedule and major requirements easily?

79 Responses



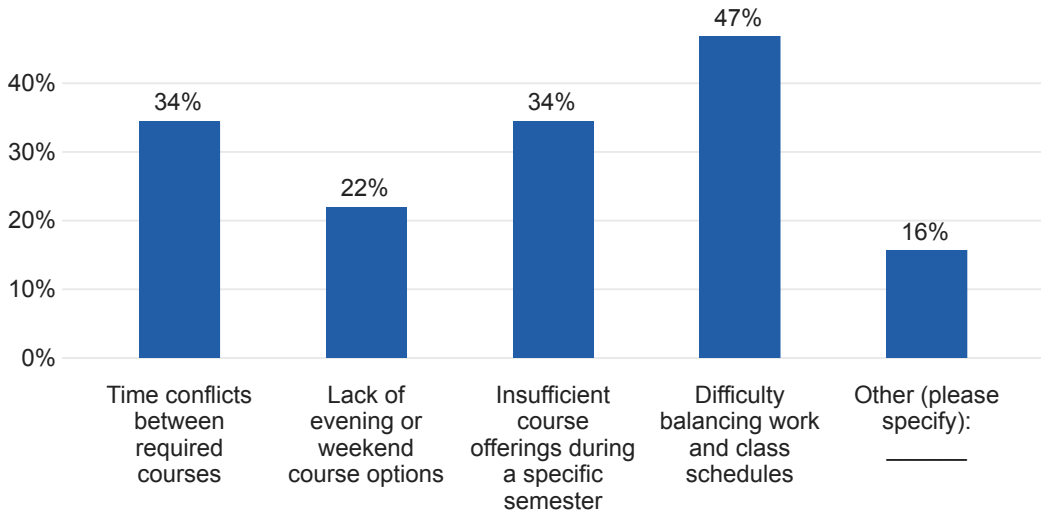
Have you ever had to delay your graduation or program completion due to course scheduling conflicts?

79 Responses



What types of scheduling conflicts have you encountered? (Select all that apply) - Selected Choice

64 Responses



Q7_5_TEXT - Other (please specify): _____ - Text

Other (please specify): _____ - Text

some classes are only offered in the evening and only certin symesters

One class I wanted to take was removed due to not enough students and possibly lack of money

I really hate 8ams as a commuter student from a different town. Also, I had an 8am and a 5:30pm class on the same day, so I ended up being here around 13 hours on Tuesdays because I didn't want to spend 2 hours a day driving back and forth.

Sports and Class schedules

None

Nothing

None

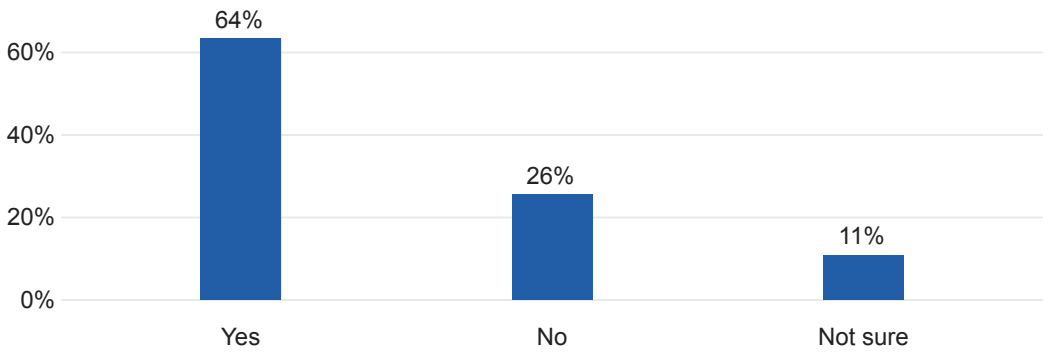
some courses aren't offered that are needed for an AA degree

none

NONE-N/A

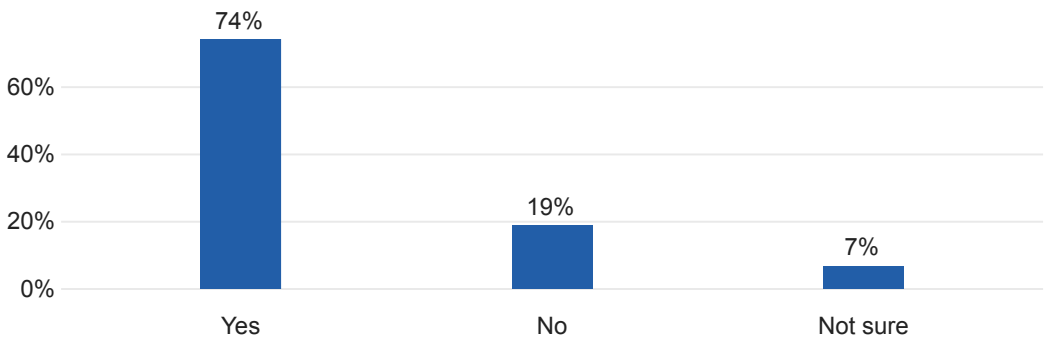
Do you look for courses with zero-textbook cost?

74 Responses



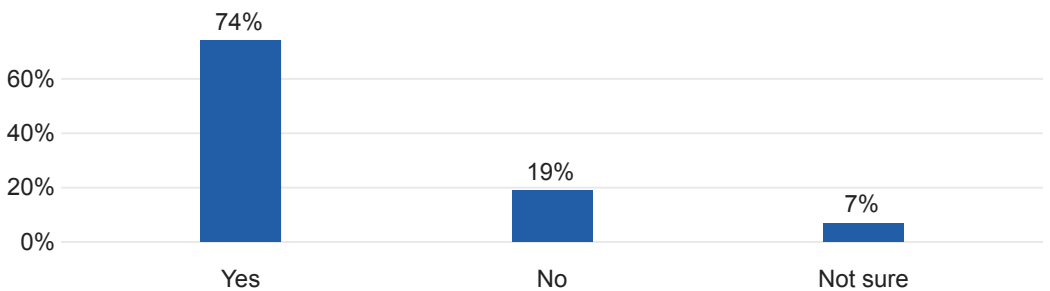
Are you more likely to take a course that is designated low-cost or zero-textbook costs?

74 Responses



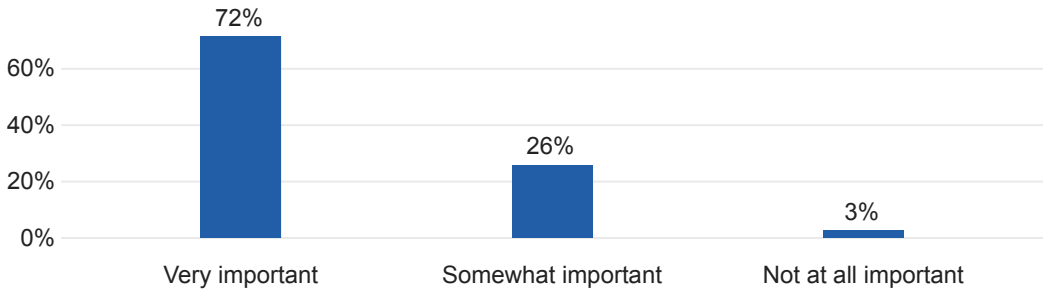
Are you more likely to take a course that is designated low-cost or zero-textbook costs?

74 Responses



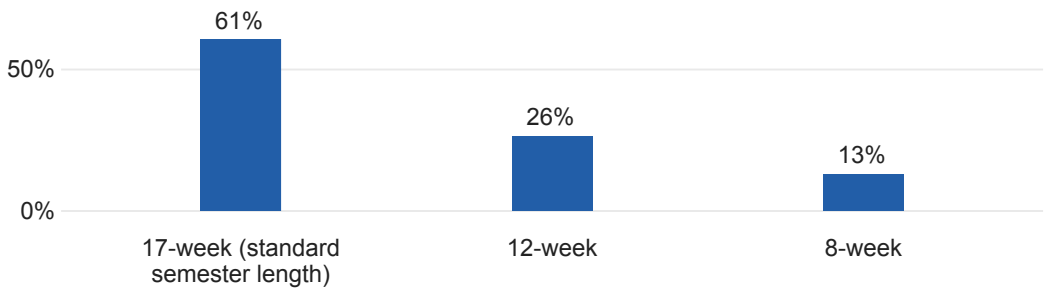
If we posted a two-year Agriculture schedule online, how important would that be to your educational planning?

74 Responses



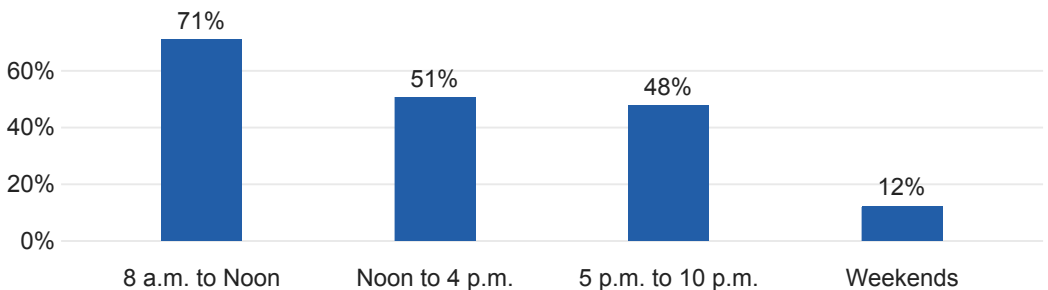
Which course length would you prefer to enroll in for the Agriculture program? (Select all that apply)

74 Responses



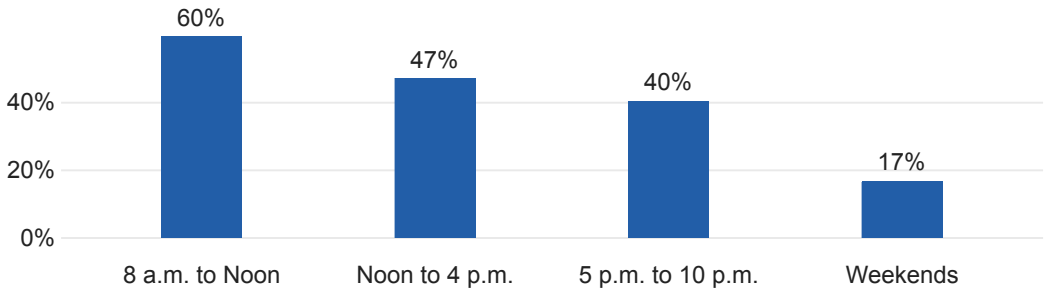
During which of the following times are you typically able to attend on-site courses? (Select all that apply)

73 Responses



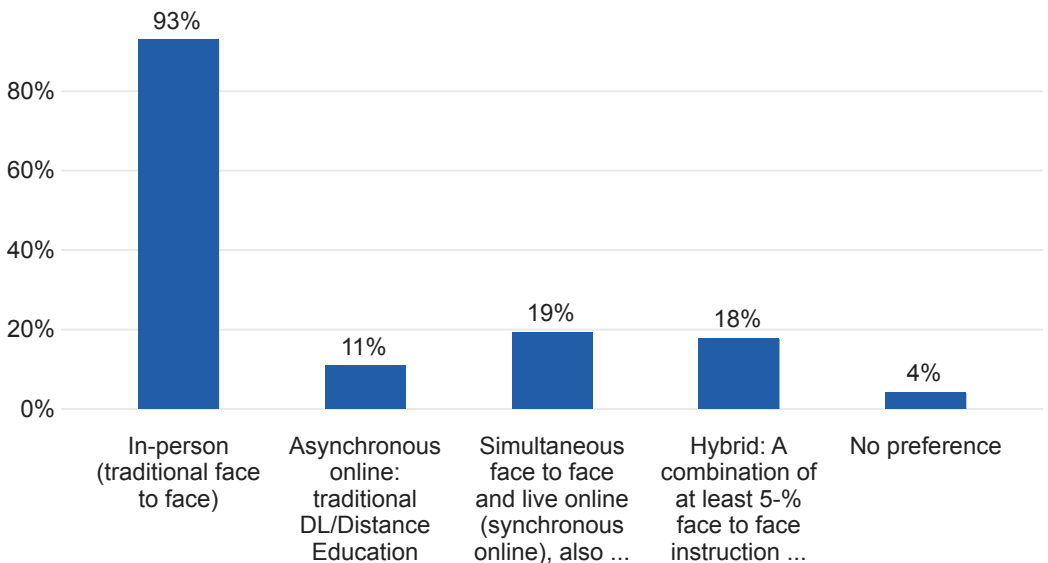
During which of the following times would you prefer to attend on-site courses? (Select all that apply)

72 Responses



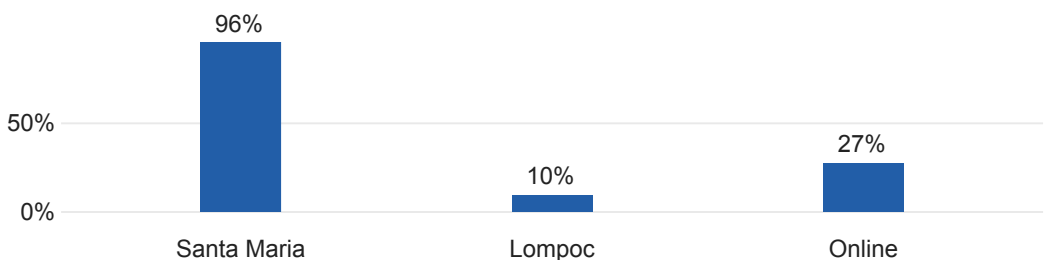
Which type of course format would you most likely enroll in for the Agriculture program? (Select all that apply)

73 Responses



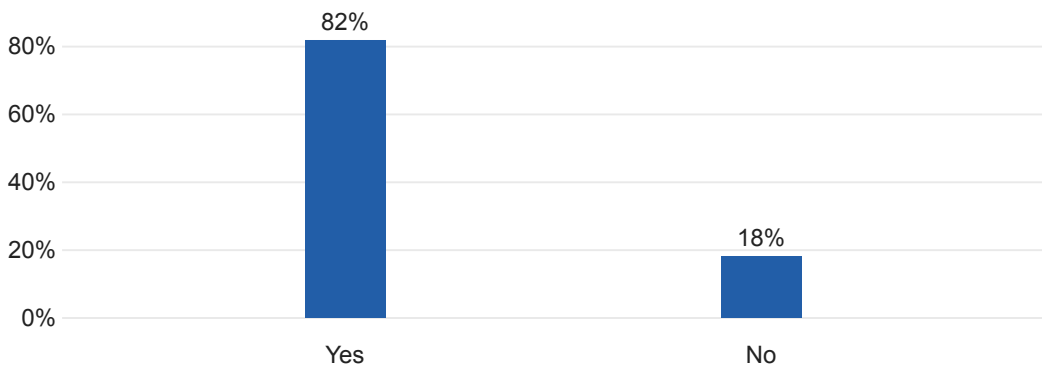
What is your preferred location for taking courses? (Select all that apply)

73 Responses



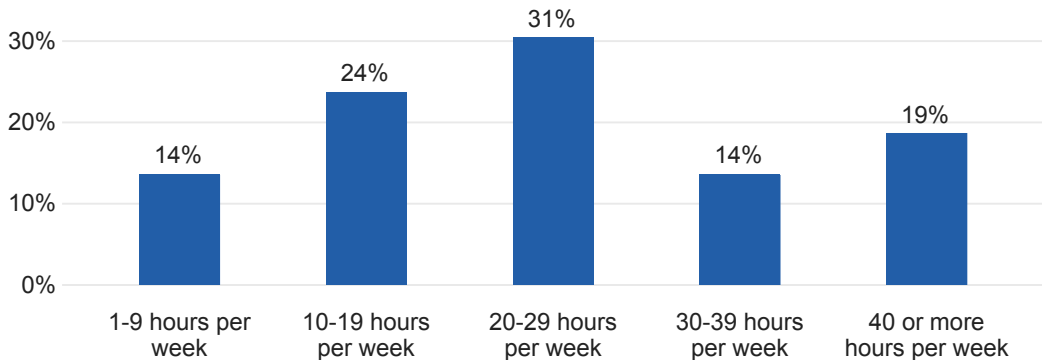
Are you working while attending Allan Hancock College?

72 Responses



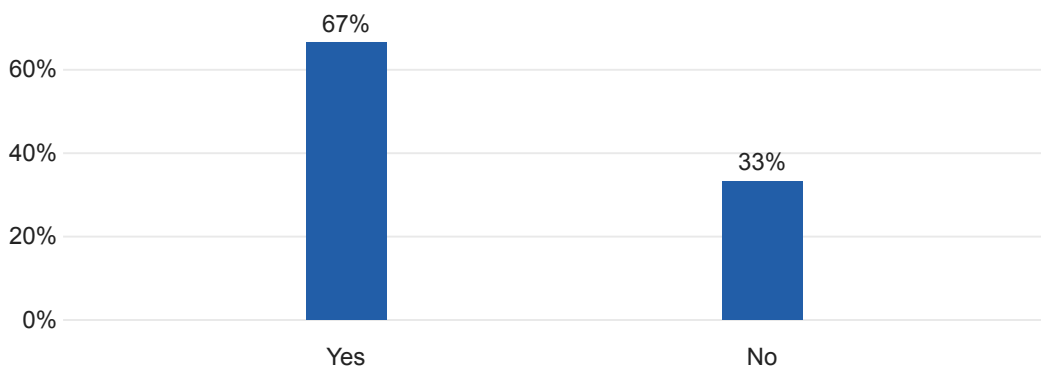
How many hours per week do you work on average?

59 Responses



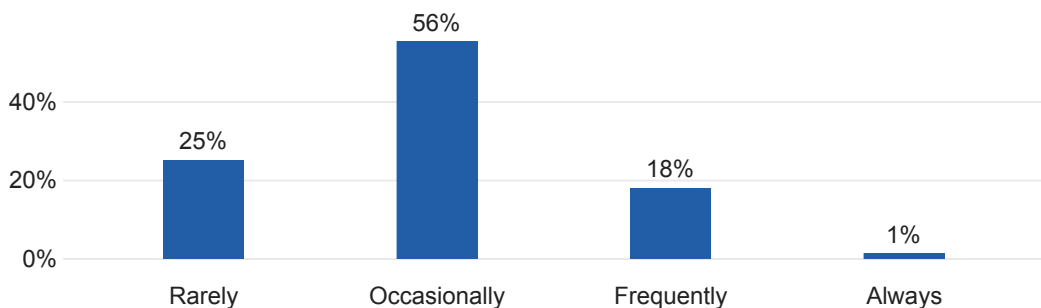
Are you going to school full-time (12 or more units)?

72 Responses



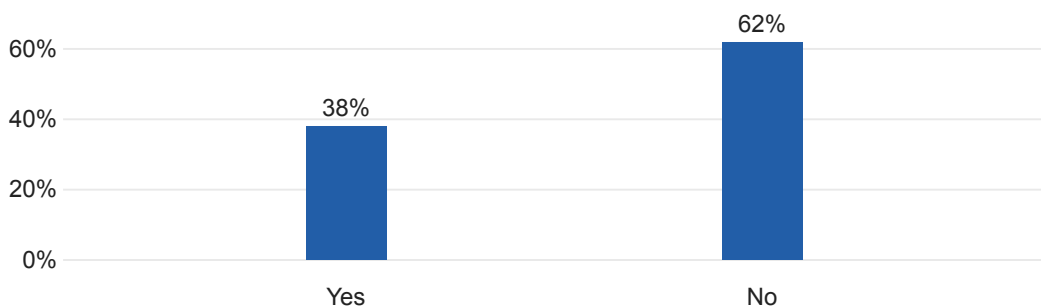
How often do you encounter course scheduling conflicts in a typical semester?

72 Responses

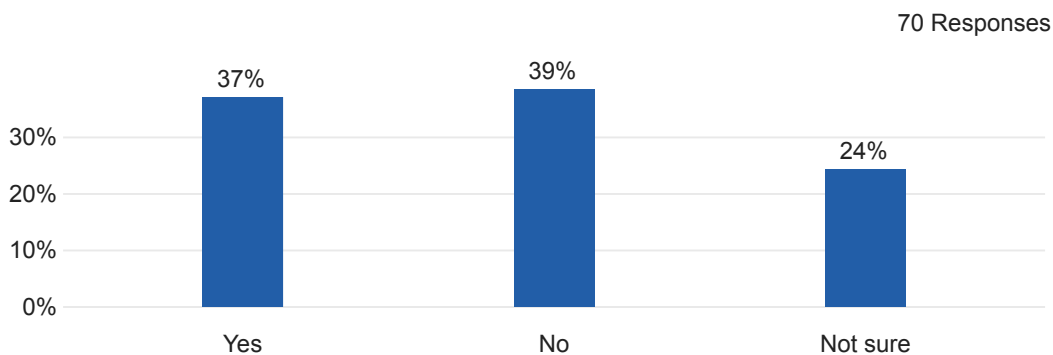


Have you experienced delays in completing your program on-time due to scheduling issues?

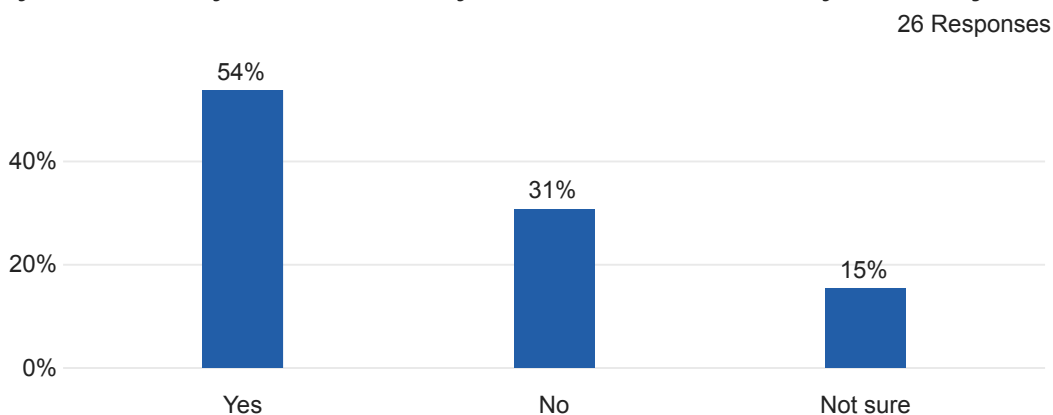
71 Responses



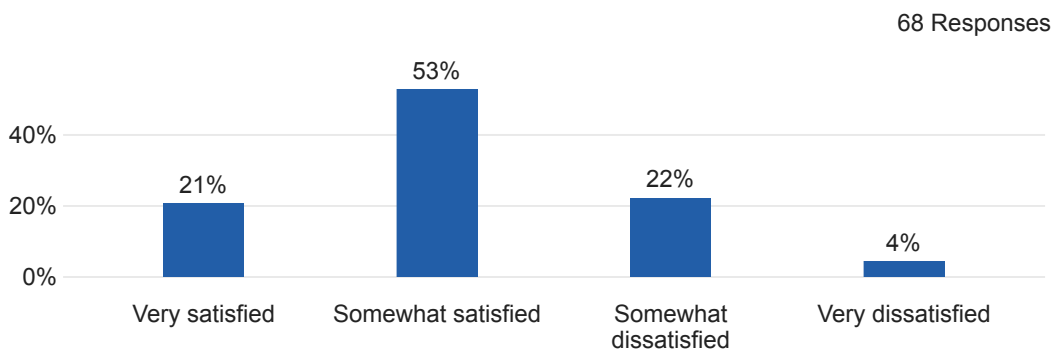
Are you aware of any online course scheduling options in your major?



If yes, have you taken any online courses in your major?

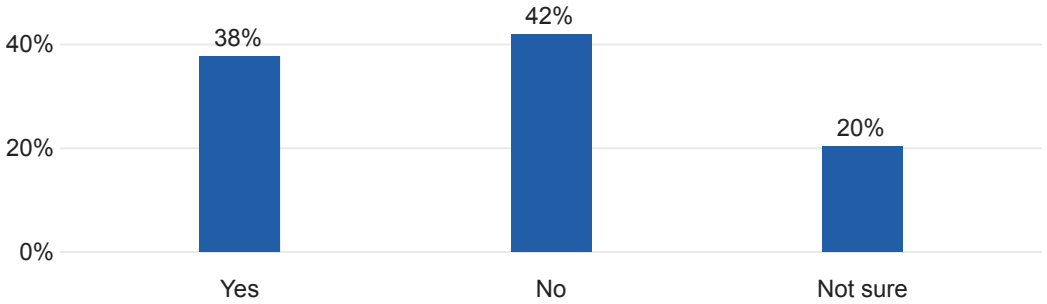


How satisfied are you with the availability of online course options in your major?



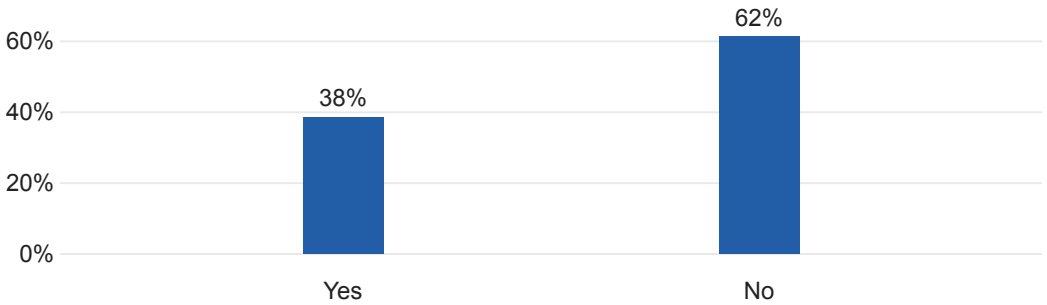
Are you aware of any accelerated course options (8-week format, summer/winter sessions) in your major?

69 Responses



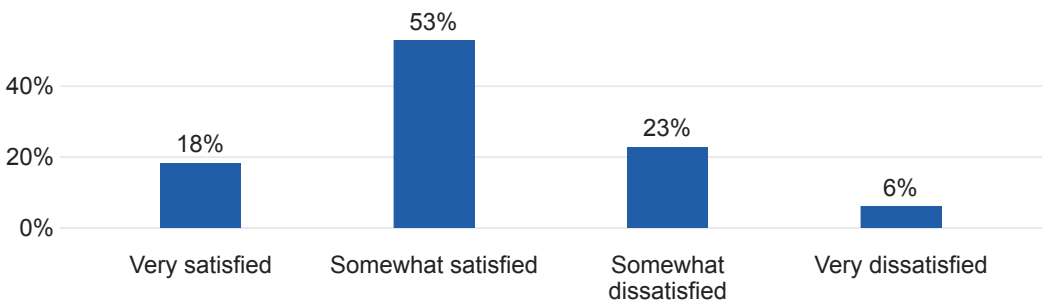
Have you taken any accelerated courses (8-week format, summer/winter sessions) in your major?

26 Responses



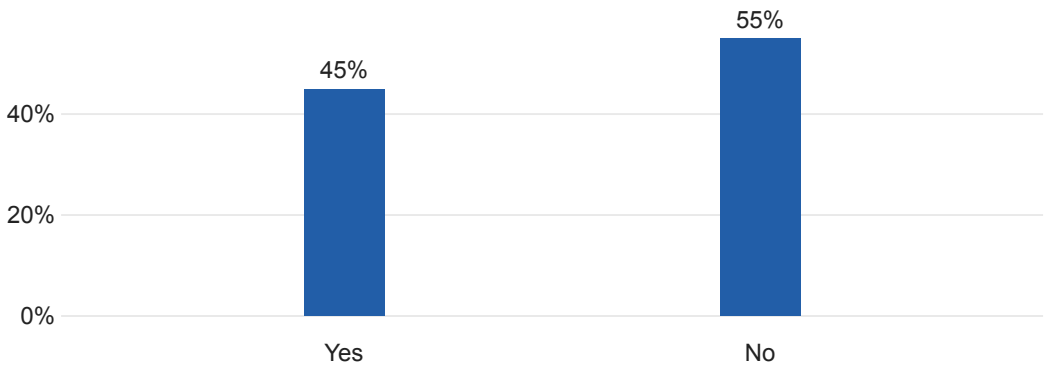
How satisfied are you with the availability of accelerated course options in your major?

66 Responses



Would you be interested in a fully online program?

69 Responses



Q28 - Are there any specific courses or subjects within your major that you believe should be offered at more convenient times or in different formats?

Are there any specific courses or subjects within your major that you believe should be offered at more convenient times or in different formats?

Ag 125

I wish there are courses that are more specific to certain majors

No.

Stop with the 8AMs, Erin 🙄. Just generally I'd rather have classes back to back or with an hour gap than a multi-hour gap between classes. That's because I'm really specifically taking ag classes, though, and I'm not going to gen eds between them.

No

No

I believe they should still be offering classes even if they can't fill up a whole class necessarily. There's people like me who are doing there two year PCA program and all I need is two more classes but their not offering them because of low numbers which I totally understand but what about the people who need to finish the two year on time? It's unfair and they should offer alternates for us who are almost done instead of having us wait and waste our times . Thank you

Some courses, that are only available during certain semesters, should be available during spring and fall semesters.

No

Most of the ag classes we need in order to complete this degree.

More diverse ag classes with more staff thats knowledgeable. Jill was an interesting professor she would tell students to google questions rather than asking her.

Not at the moment

Ag classes in general they are not offered every semester and it can be challenging if a class isn't available if that's what is needed to transfer

No

I think the time that the classes are offered is fine. It is just that the courses required to graduate oftentimes overlap with the only times that I can take a specific viticulture or wine class and I have to decide which is more important. This has set me back a year from transferring.

The Ag courses some of them are offered during the day it would help if they can be offered in the afternoon as well

more funding for labs. My teacher always complained how she didn't have the resources for a proper lab. And it's partly true.

After work or weekends for students that work

No input information.

No 8am classes

I think that the Ag Economics and Ag Sales classes would be better if they were not offered at night but it would be more difficult to do with all of the other classes during the day.

Some of introductions classes be offered also in the spring

animal science in the evening

Q29 - What are challenges you experience with taking classes in the program?

What are challenges you experience with taking classes in the program?

No challenges really

Some classes are in the morning that are required I'm not able to take in the morning at the moment.

N/A

I'm not able to take evening classes or longer time length classes

there are no tutors that can help specifically for your major classes

Memorization of all the subjects

None

Canvas accuracy/tech issues in AG Econ was a frustrating factor.

I'm not sure

None

None

There are not enough classes and the ones that are there, they are very specific and not many options.

Nothing at all

They're mainly offered during the day in person but I work from 8-5 Monday-Friday.

Diverse classes

None at the moment

Classes not offered every semester

None

None

There are one or two wine specific courses that aren't offered or are only offered once in a blue moon. It would be nice to know when they will be offered in advance, so students can plan ahead.

The semesters that they are given

Time conflicts: limited classes in the evening

for me personally, its the fact that our teacher would like us to take notes but, she claims that the majority of the test and exams are going to be based off of what she says during the lecture. it is annoying because i preferror to take notes and she wants to write down note even though she wants us to listen to what she says.

Students that work usually don't qualify for any programs that help pay for classes or books

Sometimes it's the only class there is and your fighting for a spot or it's only offered during a certain semester.

For me night classes do not work because I feel burnt out by the time the night class would commence.

time management conflictions

Balancing my schoolwork load with my work schedule

A lot of the Ag classes that I take are extremely long and long lectures and labs. I do not have a problem with having a class more often during the week but making the lectures and labs shorter.

None

Working too many hours

Q30 - What suggestions do you have for improving the scheduling of courses in your major to better meet your needs and those of your fellow students?

What suggestions do you have for improving the scheduling of courses in your major to better meet your needs and those of your fellow students?

more class hours and days options and the all Ag classes be available for spring and fall semesters

Have more classes available during spring, because some parts are during fall and students don't have time to attend in person class due to games being out of town

I feel that if there are more courses offered in the morning or even online it would allow more students to have access to these courses

plan your schedule ahead on time for each semester so there are no large gaps of free time between classes.

I think when you can take a certain amount of classes during the same day would be good to just ask for those specific days off at work.

Group the classes in a tight block or offer multiple sections, if possible.

Try to have more time during the middle of the day

I just go with the flow

None

More classes within the major and adding more online classes.

Do not know at the moment

More online ag classes or night classes.

Ag classes to be offered every semester

Include more online options for mainly in person classes, teach courses year round

None

For counselors to recommend what classes to take for you major.

Having more onling or evening classes available.

none

Lots of times

Students need help in person with counselors and/or advisers and is hard to schedule an in person appointment

Have more classes in the afternoon, since most college students work and also provide classes for both fall and spring semesters. Have more options for Agriculture students overall. There's about two night classes that relate to agriculture, you could also have them for more in the earlier afternoon instead of late afternoon.

I have no input.

hopefully have class after noon

Weekend offered courses

I think that there should be more options for classes that are only one day a week that there should be more offerings because someone might have a class also for their major at the same time as another class that they need for their major.

Put some class in spring












Agriculture Innovative Scheduling 2023-24

Final Audit Report

2024-07-22


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