

HIGHER EDUCATION COORDINATING COMMISSION February 10, 2022 Docket Item #: 6.7

Docket Item:

Community College Bachelor of Applied Science (BAS) submission proposal: Chemeketa Community College, has submitted Appendices A, B, C, D and E for their proposed Applied Management and Leadership BAS. This submission is Phase Two out of a Three Phase process.

Summary:

Chemeketa Community College proposes a new Bachelor of Applied Science (BAS) in Applied Management and Leadership. Higher Education Coordinating Commission (HECC) staff completed a preliminary review of Appendices A, B, C, D and E. After analysis, HECC staff recommends this program move forward to Phase Three in the approval process.

Overview of Submission Process:

Review and approval of the Bachelor of Applied Science (BAS) is a three-step submission process:

- Phase One: Statement of Need (Appendices A and B)
- Phase Two: Notice of Application (Appendices C, D and E)
- Phase Three: Final Program Approval (Submission and Approval in Webforms)

Additional information about the <u>Applied Baccalaureate Process</u> maybe be found here: https://www.oregon.gov/highered/institutions-programs/ccwd/Documents/FULL_AB_Document_FINAL-10-14-20.pdf

Staff Recommendation:

The HECC recommends the adoption of the following resolution:

RESOLVED, that the Higher Education Coordinating Commission approves the following: The college be allowed to move into Phase Three of the review and approval process.



COVER SHEET

Chemeketa Community College Applied Management and Leadership

Please accept the attached Program Application and supporting documentation for our application to offer an Applied Baccalaureate Degree in Applied Leadership and Management at Chemeketa Community College. The Chemeketa Community College Board approved a resolution in support of this application on June 23, 2021. We look forward to working with you to advance this project to increase educational opportunities for our community.

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Documents Attached:

Appendix C: Program Proposal pages 5-78

Appendix D: Worksheets for Revenue and Expenditures pages 44-46

Appendix E External Review Team Worksheets pages 48-63

Most recent Accreditation Report pages 78-160



January 7, 2022

Higher Education Coordinating Commission 3225 25th Street SE Salem, OR 97302

Dear Chair Cross, Vice-Chair Rowe, Executive Director Cannon, and Members of the Commission,

I am pleased to submit Chemeketa Community College's Proposal to offer an Applied Leadership and Management Applied Baccalaureate Degree. Although this is a new degree level for our college, the proposed degree continues our work toward Chemeketa's original mission: opening doors for students by offering accessible, quality educational experiences and workforce training.

This new applied baccalaureate degree supports Oregon's workforce need for more adults to attain a bachelor's degree. Bachelor's degree attainment is particularly low in our service area, especially for members of low-income and minoritized communities. The degree is specifically designed to address the needs of adults currently most underrepresented in degree attainment. The degree builds on our existing Career and Technical Education AAS degrees and is targeted for these adults who are currently using their technical skills in the workplace but who need a sector-specific leadership degree to advance in their careers.

We see this applied baccalaureate degree as an opportunity to advance Oregon's education and diversity goals. As you know, community colleges serve the largest number of people from underrepresented groups. Many of our graduates report success working in industry but hitting a barrier when they try to advance into supervisory positions. Oregon's data on the lack of diversity at the supervisor or managerial level reflects that experience. This degree is designed to be relevant, accessible and affordable to students from low-income and equity populations. Studies from the 25 other states who have adopted the applied baccalaureate at the community college level confirm that this design creates more degree attainers from underrepresented groups.

As the largest college in our service district, Chemeketa is uniquely poised to offer this option for AAS graduates. By utilizing many of our existing physical and personnel resources, we will maximize the use of state resources while also providing an accessible option for place-bound students.

Collaboration with other colleges and universities has informed our proposal and we look forward to strengthening our relationships to continue providing the variety of pathways to higher education that our students require.

Collaboration with industry and community partners has guided the project design at each step. Our regional industry leaders recognize that we need to develop paths for their technically skilled workforce to advance within their organizations. They wholeheartedly support a model that is focused on sector-specific learning that allows the employee to remain in the workforce while attending college.

We look forward to working with you to create a more just, equitable and accessible higher education system. Thank you for your willingness to innovate in support of our community.

Sincerely,

Jessica Howard, President/CEO

APPENDIX C PROGRAM PROPOSAL

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APPENDIX C PROGRAM PROPOSAL

1. Curriculum Demonstrates Baccalaureate-level of Rigor

Describe the criteria to be used to evaluate achievement of baccalaureate-level learning outcomes in upper division courses as well as professional competencies for the program's discipline.

Provide list of all of the program's required courses (or course sequences) for the major and describe how they are intended to collectively build the competencies required for the intended occupation.

The Applied Leadership and Management Applied Baccalaureate degree (Applied Leadership AB) is designed to be offered as a cohort program, with students progressing through the coursework in two years of continuous attendance. Admitted students will have completed an AAS degree. The course schedule meets the needs of working adults through alternative scheduling, hybrid learning, and accelerated courses. The first year of the program focuses on introducing students to key concepts and skills that can be applied across public and private leadership roles, including understanding leadership concepts and how to effectively apply these in the workplace, budget and finance, and entrepreneurial thinking and management. Because students will be entering the cohort from a variety of technical fields, the second year of the program provides the opportunity to work in sector-specific groups with faculty who have experience in that sector, to engage in work-based projects, and to apply for credit for prior learning. In both years, students will complete general education coursework that connects these general fields of study to key practices in the workplace.

Faculty who teach general education or transfer courses across the college must have at least a Master's degree in their subject area. Many have Doctoral degrees. This requirement is well-aligned with university hiring practices, and is beneficial to our transfer agreements.

Learning activities in the Applied Leadership AB program are designed with the working professional in mind. Both the overall design of the program and the approaches in individual classes focus on acknowledging the adult learners' professional knowledge from both their associate degree program and their experience in the workplace. Faculty intentionally engage students in activities and projects that allow them to apply new learning to their current and future work contexts, creating transformative learning experiences for the students as individuals and as a group. These professional faculty, with experience in industry, serve as collaborators and guides for students who are themselves competent professionals in their fields.

Student learning is assessed throughout the program using a variety of methods including reflection activities, individual and team projects, and real-world applications of the material. The progression of courses is designed to ensure that students are building a foundation of key concepts throughout the first year, applying material in the workplace in the second year, and

having experiences that create a growing sense of confidence and efficacy, both as college students and workplace leaders.

Applied Leadership AB Degree- Program Learning Outcomes:

- Think as a leader 1.0-
 - 1.1-Develop comprehensive project plans, monitor the plans, identify areas of risk and deal with problems using appropriate strategies
 - 1.2- Identify the significant and key decisions that need to be made, gather the necessary resources or people to make the decision
 - 1.3- Identify and describe personal leadership style, characteristics, strengths, and philosophy
- Act as a leader 2.0-
 - 2.1- Demonstrate integrity through ethical behavior and socially responsible decision making
 - 2.2- Communicate effectively with all stakeholders using appropriate channels for the situation
 - 2.3- Demonstrate effective critical thinking, teamwork, and technical information literacy skills to make critical decisions to resolve interpersonal and organizational challenges that occur in the modern workplace
- Create opportunities for leadership 3.0-
 - 3.1- Apply and analyze multicultural strategies to facilitate respectful and equitable inclusion of diverse individuals and perspectives
 - 3.2- Apply organizational behavior principles and human resource management practices to effectively develop, hire, and retain a diverse workforce
 - 3.3- Understand cultivating and participating in a learning culture that facilitates effective teamwork

Students will document their learning and growth as leaders through the completion of a Leadership Portfolio throughout the program.

The curriculum for the Applied Leadership AB program is designed in three distinct blocks: Core Leadership and Management Courses, General Education Courses, and the Flexible 15 credits. The core curriculum courses focus on leadership and management principles and concepts. The General Education courses allow all students in the program to attain baccalaureate-level coursework in writing, math, communications, psychology, and science regardless of the courses contained in their AAS degree. The Flexible 15 creates flexibility for students by allowing them the opportunity to apply for credit for prior learning, exploring graduate-level courses at Western Oregon University, or applying the concepts and principles from the core courses in an internship or externship experience.

Applied Leadership AB Course Scope and Sequence with Outcomes:

Core Leadership and Management Courses

General Education Courses

Flexible 15 Courses

Year	Term	Course (Credits)	Course Outcomes (Program outcomes)
1	1	MLD 301- Introduction to Leadership (6)	 Define Leadership (1.3) Formal and informal opportunities for leadership Theories of Leadership (1.2) Leadership Framework: Think as a Leader, Act as a Leader, Create opportunities for Leadership (1.1, 2.1,3.3)
1	1	MLD 302- Personal Effectiveness in Leadership (6)	 Understanding and Capitalizing on Strengths (1.3, 2.3,3.2) Employing growth mindset (1.1) Who am I as a Leader? (1.3, 2.1, 3.1) Effectiveness as a learner (2.1)
1	2	WR 427- Writing and Research (6)	 Information Literacy-finding, evaluating, using, citing, of resources (2.2, 2.3) Technical writing skills for the workplace (1.1, 2.2) Organization of written communication (2.2) Using information to ethically influence decisions (1.2, 2.3, 3.2)
1	2	MLD 304- Diversity, Equity, and Inclusion (5)	 Exploring identity and bias (3.1) Understanding and cultivating belonging (2.3, 3.2) Moving beyond compliance to high performance (1.1, 2.2, 3.3) Proactively creating an inclusive workplace (3.1)
1	3	MG 391- Data Analytics for Leaders (6)	 Types of data (1.1) Technical skills for data analysis- embed technical skills across content (2.3) Data-informed practice and decision making (1.2) Ethical use of data in persuasive communication (2.1)
1	3	MTH 322- Public and Private Sector Business Finance (5)	 Defining organizational finance types and goals (1.1, 1.2) Fundamental business math (2.3) Identifying developing and using financial resources to effectively reach organizational goals (2.1, 3.2)

			Developing long-term financial strategy (1.1, 2.3)
1	4	MLD 350- Innovation, Development, and Entrepreneurial Thinking (5)	 Innovation as a business practice (1.1, 3.3) Moving from idea to implementation (1.1, 1.2, 1.3, 2.3) Fostering creativity in the workplace (3.1, 3.2) Identifying, managing, and expanding risk tolerance (3.3)
1	4	MLD 387- Project Management (6)	 Problem identification (1.2, 2.1) Developing project goals and scope (1.2, 2.3) Leading and managing a project team (3.2) Task development, assignment, and follow through (1.1) Project evaluation (2.3)
2	1	COM 419- Communication for Leaders (5)	 Communication types and leveraging personal communication style (2.2) Theories of effective communication (2.2) Aligning communication approach and organizational goals (1.2, 2.3) Demonstrate ability to use technical skills to effectively communicate information and ideas (2.2, 2.3, 3.3)
2	1	MLD 410-Sector Seminar (4), MLD 481-Applied Leadership (6)	 Application of management principles in specific sectors of industry Exploration of management practices in development of individual style or approach Connecting to key leaders in industry sectors to deepen understanding of management responsibilities and opportunities Career Connected Learning Credit for prior learning Externship/Internship Advanced Studies in Leadership/Management
2	2	PSY 404- The Psychology of Leadership and Supervision (5)	 Workplace dynamics and culture (3.1) Effective and ethical performance of administrative functions- evaluations, hiring, firing, procedures, policies (3.2) Recognize and cultivate individual and team strengths for organizational mission (3.3) Leading beyond goals: identifying vision and purpose (2.3, 3.1)

2	2	MLD 420- Sector Seminar (4), MLD 482- Applied Leadership (6)	 Application of leadership principles in specific sectors of industry Exploration of leadership practices in development of individual style or approach Connecting to key leaders in industry sectors to deepen understanding of leadership responsibilities and opportunities Career Connected Learning Credit for prior learning Externship/Internship Advanced Studies in Leadership/Management
2	3	GS 490- Principles and Practices of Sustainability (5)	 Sustainability in business and industry (1.1) Finding and utilizing scientific data across sectors (1.2) Understanding environmental impact (2.1) Understand and assess the interrelated internal and external impact of business decisions (3.2)
2	3	MLD 430- Sector Seminar (4), MLD 483- Applied Leadership Capstone (6)	 Synthesis of leadership/management principles in specific sectors of industry Demonstration of effective practices in individual approach leadership/management Connecting to key leaders in industry sectors to deepen understanding of leadership/management responsibilities and opportunities Career Connected Learning Credit for prior learning Externship/Internship Advanced Studies in Leadership/Management

Admittance to the Applied Leadership AB program will require that students have an earned an AAS degree. This degree will comprise the first 90 credits of the Applied Leadership AB degree for all students. The coursework will consist of three distinct areas of curriculum: Leadership and Management Core, General Education, and Flexible 15.

All students in the Applied Leadership AB program will be required to earn 180 credits to complete the degree. As indicated above, 90 credits will be applied from the AAS degree. Students will earn 45 credits in year one and 45 credits in year two of the program. Students must complete all required coursework, but will be able to apply for credit for prior learning for up to 15 credits. Applied Leadership 1, Applied Leadership 2, and Applied Leadership Capstone will be eligible for credit for prior learning based on the student's ability to document meeting the course outcomes in current or previous leadership positions. Students may also receive credit for 300 or 400 level general education courses in writing and research, psychology, and lab science to apply to the general education requirements.

Scope and Sequence of Courses

Year 1

Term	First Term - Fall (tentatively)	2023	Winter 2024		Spring 2024		Summer 2024	
Credits/ILC	6	6	6	5	6	5	5	6
Course	Intro to Leadership	Personal Effective- ness	Writing and Research	Diversity, Equity and Inclusion	Data Analytics for Leaders	Business Finance in the Public and Private Sectors	Innovation and Development Entrepreneur- ial Thinking	Project Management
Topics/Outcomes		Portfolio CPL	Gen Ed/ Writing			Gen Ed/ Math		Outside Certification

Year 2

Term	Fall 2024			Winter 2025			Spring 2025			
Credits	5	4	6	5	4	6	5	4	6	30 ILCs coursework 3.4 ILCs internship
Course	Gen Ed	Sector- Specific Seminar	Work- Based Learning	Gen Ed	Sector- Specific Seminar	Work- Based Learning	Gen Ed	Sector- Specific Seminar	Work- Based Learning	
Topics/ Outcomes	Communica- tion		Workplace Project Internship CPL MBA credits	Business Psycholo- gy /Inclusive Supervi- sion		Workplace Project Internship CPL MBA Credits	Lab Science Resource Sustainabi -lity	Capstone	Work- place Project Internship CPL MBA Cred	

Year 1 Courses

MLD301 Introduction to Leadership (6)

- Defining leadership
 - Formal and informal opportunities
- Theories of leadership
- Leadership framework: Thinking, acting, and creating

MLD302 Personal Effectiveness (6)

- Understanding and capitalizing on strengths
- Employing a growth mindset
- Who am I as a leader?
- Effectiveness as a learner

WR427 Writing and Research (6) (General Education)

- Information literacy (finding, evaluating, using, citing)
- Technical writing skills for the workplace
- Organization of written communication
- Using information to ethically influence decisions

MLD304 Diversity, Equity and Inclusion (5)

- Exploring identity and bias
- Understanding and cultivating belonging
- Moving beyond compliance to high performance
- Proactively creating an inclusive workplace

MG391 Data Analytics for Leaders (6)

- Types of data
- Technical skills for data analysis (embed technical skills across content)
- Data informed practice and decision making
- Ethical use of data in persuasive communication

MTH322 Public and Private Sector Business Finance (5)

- Defining organizational finance types and goals
- Fundamental business math
- Identifying developing and using financial resources to effectively reach organizational goals
- Developing long term financial strategy

MLD350 Innovation, Development, and Entrepreneurial Thinking (5)

- Innovation as a business practice
- Moving from idea to implementation
- Fostering creativity in the workplace
- Identifying, managing, and expanding risk tolerance

MLD387 Project Management (6)

- Problem identification
- Developing project goals and scope
- Leading and managing a project team
- Task development, assignment, and follow through
- Project evaluation

Year 2 Courses

COMM419 Communication for Leaders (5) (General Education)

- Communication types and leveraging personal communication style
- Theories of effective communication
- Aligning communication approach and organizational goals
- Demonstrate ability to use technical skills to effectively communicate information and ideas

MLD410 Sector Seminar 1 (4)

MLD481 Applied Leadership 1 (6)

PSY404 The Psychology of Leadership and Supervision (5) (General Education)

- Workplace dynamics and culture
- Effective and ethical performance of administrative functions (evaluations, hiring, firing, procedures, policies)
- Recognize and cultivate individual and team strengths for organizational mission
- Leading beyond goals: identifying vision and purpose

MLD420 Sector Seminar 2 (4)

MLD482 Applied Leadership 2 (6)

GS490 Principles and Practices of Sustainability (5) (General Education: Lab Science)

- Sustainability in business and industry
- Finding and utilizing scientific data across sectors
- Understanding environmental impact
- Understand and assess the interrelated internal and external impact of business decisions

MLD430 Sector Seminar 3 (4)

MLD483 Applied Leadership Capstone (6)

2. Focus on targeted professional or technical fields with input from members of those fields

Describe how this program has been designed to fill specific labor market needs within its targeted field. How have industry professionals specifically participated in program planning, defining program outcomes, program design, or other efforts that help ensure success in student employment, stability or advancement?

Chemeketa has partnered with leaders from regional businesses and industries over the past few years to develop this program. Employer surveys, employment data, graduate data, and job listings constitute just some of the data points used in the development of this program. The Applied Leadership AB Advisory Committee was formed to provide input on degree development and offer suggestions and their perspectives as sector experts and employers. The committee is comprised primarily of representatives from Chemeketa's related Career and Technical Education advisory committees and represents industries and agencies that need a need for a path for employees to advance in their careers to management roles requiring the type of degree Chemeketa is proposing.

Advisory Board Members:

NAME	TITLE	ORGANIZATION	EMAIL	CTE PROGRAM ADVISORY COMMITTEE
Janell Piercy	Residential Inspection Manager	City of Portland	Janell.Piercy@Portlandoreg on.gov	Building Inspection
Daryl Jones	Building Official	City of Silverton	DJones@silverton.or.us	Building Inspection
Michael Rosenbalm	Retired	Retired Industry Member	michael.rosanbalm@gmail. com	Electronics
Mel Gregg	Human Resources Director	City of Woodburn	Mel.Gregg@ci.woodburn.or .us	
Randy Scheid	Building Official	Deschutes County Community Development	Randy.Scheid@deschutes. org	Building Inspection
Cheney Vidrine	Wine Maker	Union Wine	Cheney@unionwinecompa ny.com	Wine Studies
Billie Jo Nelson	Clinic Supervisor	Providence Medical Group	BillieJo.Nelson@providence .org	Medical Assisting
Heather		West Hills Healthcare	heather@westhillshealthcar	Medical Assisting

Opitz		Clinic	e.com	
Jennie Price	Instructor	Chemeketa	jennie.price@chemeketa.ed u	SLPA
Harmoney Forbes	MA Coordinator	Santiam Hospital and Clinics	hdetrick@santiamhospital.o	Medical Assisting
Summer Highfill	CTE Business Teacher	Oregon Charter Academy	shighfill@oregoncharter.org	Hospitality and Tourism Management (HTM)
Ron Dodge	Business Education Program Specialist	Office of Teaching, Learning and Assessment, Secondary Postsecondary Transitions	Ron.Dodge@ode.state.or.u s	НТМ
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Jeff Knapp	Executive Director	Visit McMinnville	jeff@visitmcminnville.com	НТМ
Deb Marinos	Director	Adaptability for Life	dmarinos@runbox.com	Occupational Skills Training
Denise Hoover	Vice President	VP Surgical Services at Salem Health	denise.hoover@salemhealt h.org	Anesthesia Tech
Gerry Rasch	Sales Manager	Bjornson Vineyard	gerry@bjornsonwine.com	Wine Studies
Holly Nelson	Exec Dean	Chemeketa Community College	holly.nelson@chemeketa.e du	READ Division
Tim Ray	Director of Ag	Chemeketa CC	tim.ray@chemeketa.edu	Ag & Tech Science
R.Taylor	Dean of Bus. & Tech, ECE, Vis Com	Chemeketa CC	rtaylor@chemeketa.edu	Bus & Tech, ECE, Vis Com

The Advisory Board members have met as a group and also provided individual feedback on the program. The following are notes from one advisory committee meeting:

From Santiam Health:

Clinic managers do not need a bachelor's degree or associate's degree at Santiam Health. We do need our managers to get manager/people skills and customer service skills. It is difficult to find any baccalaureate programs that focus on people management and diversity courses. Managers struggle with how to handle diversity issues. We hope to find a way to build up Medical Assisting program to AAS degree to give AB opportunities. Online courses and 1 course at a time would be great for working adults. And making connections with classmates in specific cohorts would be great.

From City of Woodburn:

Police executive manager positions require bachelor's degrees. Police officers work for years and come to a point when they want to be promoted with realization they do not have actual degrees. Working a 12-hour shift makes it impossible to take classes. The Applied Leadership AB program would be an opportunity to build up the criminal justice program. This would also be a professional development opportunity for accounting degrees or office recorders. Over all, this is a great opportunity for working adults. For courses, maybe add a basic management level of understanding legal compliance issues, labor relations management. Have some general understanding of ADA law, employment law, and harassment laws. And maybe basic decision-making skills like gathering information before reacting to a situation.

Q: Can students have AAS degrees from other institutions?

A: We hope to create a streamlined process for students with AAS degrees from other institutions.

Q: How would each specific degree program connect with AB degree?

A: Each cohort could be divided by specific sectors during the second year of the program. We will connect with the committee when time comes.

Offer courses online in our current virtual world.

From Salem Health:

Salem Health requires bachelor's degrees for any leadership roles like managers and supervisors. This will give our technical staff an opportunity to grow professionally and skills. Writing classes with a presentation type of practice would benefit students in this type of practice. Data Analysis is great to give basic understanding. Also, basic understanding of finances and looking at budgets is necessary.

Have ethics law in sector specific seminars.

Competitors are currently virtual which is what working adults prefer. How we connect cohorts in specific professions is important.

From City of Portland (Building Inspection):

Building inspection fields have a lot of technical skills that would benefit from basic finance skills, basic presentation skills, writing skills, soft skills, and diversity management. That would move technical experts to leaders that can collaborate and manage a team. This is a great opportunity.

From Chemeketa PT Instructor (Wine Studies):

Just want to be thinking about an ethics piece; wine studies has this field as a requirement for licensing. It would be good to have ethics requirements for everyone.

For rural area students, online option would be best unless class is offered on the weekend (maybe hybrid).

From City of Silverton (Building Officials):

Agree with everyone's thoughts. Conflict resolution, learn how to communicate technical skills to the general public. Train someone to de-escalate situations and avoid legal court situations. Summer Highfill of Oregon Charter Academy: There is a generational gap needing communication skills. Communication skills and project management skills will benefit students. Working class will benefit from the flexibility of earning credit toward the next step in professional life.

Current generation of students are cautious/conscious of student debt. This program would be great for students to earn a 2-year degree, get a job and continue with education for 4 yr degree. Offer courses virtually for those with long shifts at work. Offering classes one at a time would work wonderfully. If classes are designed with great elements, that is best for distance learners.

From Deschutes County Community Development (Building Official):

AB courses would transfer to universities to complete master degrees.

Q: What type of degree will this be? Bachelor of Arts or Bachelor of Science? Will this degree be possible to complete in a shorter length of time?

A: Applied Baccalaureate is different and will mean the transcript will indicate something different. Length of time to complete will depend on how many credits a student will enroll in each term. Full-time students should complete 4-year degree in 2 years after completing 2-year degree.

Proposing to have students take 1 (online or weekend) course every 5 weeks to benefit working-class students.

From Union Wine (wine maker):

Agreed on all courses mentioned in this meeting; leadership and equity courses are definitely needed. Opens up the opportunity to move into the winemaker versus field worker role. Does not necessarily mean they need bachelor's but courses mentioned will benefit folks to progress professionally.

3. Availability of Qualified Faculty and Teaching Resources

Provide a profile of current faculty expected to teach within the relevant foundational program, describing each educational and/or professional experience.

Chemeketa has well-established foundational programs in Business, Public Safety/Emergency Services, Health Sciences and Applied Technologies. The chart below provides an outline of faculty's educational and professional experience in those areas. **Faculty Teaching in Foundational Programs**

Degree Area	Primary Faculty Qualification	Faculty Education Highlights	Faculty Professional Experience Highlights	Number of Full-Time Faculty	Number of Part-Time Faculty
Accounting	Master's degree in Accounting, Business Administration, Finance or equivalent	Faculty engage in ongoing professional development and certification	Several faculty members are current Certified Public Accountants	3	6
Business Management	Master of Business Administration	Faculty teaching Business Law courses hold current law degrees.	Faculty have worked in a variety of public and private settings. Current part-time faculty work for employers such as the State of Oregon	3.5	3
Computer Information Systems	Master's degree in Computer Science, Information Systems, or equivalent		Faculty have recent work experience in cybersecurity and state government information technology	4	2

Hospitality/ Tourism Management	Master's degree from an accredited institution in Hospitality, Business Administration, or related field -And-Six months of teaching experience or administrative experience	Faculty are current in industry standard practices and actively involved in key industry groups	1	3
Office Admin and Tech	Master's degree in Business Administration, Business Education, or equivalent	Faculty come from a variety of backgrounds including corporate training, higher education, and K-12 education	4	2
Criminal Justice	Associate's degree in Criminal Justice	Full-time faculty also teach at the Oregon Department of Public Safety and Standards Training	3	
Fire Prevention and Suppression	Associate's degree in fire protection or equivalent; three years full-time work experience with agencies providing fire protection services; experience in Emergency Medical Services delivery. Minimum certification at National Fire Protection Agency Fire Fighter II, Fire Instructor II, or equivalent.	Full-time faculty have over 50 years of experience in the fire service	2	
EMT/ Paramedic	Bachelor of Applied Science degree in related field from an accredited institution. Oregon certified EMT-Paramedic or National Registry Paramedic.	Industry experience as paramedic, EMT and nursing	2	

Health Sciences	Master's degree in Nursing and HIM at a minimum	Nursing faculty teach in Nursing with one who teaches Pathophysiology; HIM faculty teaches in the HIM program	One nursing faculty writes and edits nursing textbooks and currently speaks at nursing conferences; all have worked in their field of interest	3	0
Automotive Technology	Associate of Applied Science- Automotive Technology	Automotive Service Excellence certified	Industry experience with dealerships, fleet and independent repair	4	1
Drafting Technology	Associate of Applied Science with emphasis in drafting, engineering, architectural	Majority of faculty have bachelor's degree	Civil and mechanical engineering as well as architectural backgrounds	3	2
Machining Technology	Associate of Applied Science- Manufacturing Technology or related		Industry experience as machinists	2	1
Welding Technology	Associate of Applied Science- Welding Technology	American Welding Society Certifications	Industry experience welding and fabrication	3	2
HVAC/Plumbing/ Sheet Metal Apprenticeship	AAS Construction Trades: HVAC/R, Sheet Metal, Plumbing specialization	Journey card and/or license	3 or more years' experience	0	10
Electrician	AAS Electrician	Journey Card	3 or more years' experience	0	

Provide a description of how the institution will attempt to meet the faculty needs for the technical and academic courses by the start of Year 1 of the first two years of upper-division courses. Consider the required FTE for faculty for the various course types: technical course work, general education or related instruction, and academic courses and electives. In addition, provide the total faculty FTE included in the budget plan for the new program.

The college has budgeted for a full-time faculty member starting six months before the program begins. That faculty member will be charged with coordinating college efforts to recruit students and organize the faculty recruitment to support year 1 courses. The full-time faculty member will teach 45 ILCs, and an additional 45 ILCs are in the budget for adjunct faculty. It is assumed that the Applied Leadership AB courses that require specific expertise in leadership and management will be taught by adjunct faculty hired from industries representing the students' technical fields. General education courses will be taught following the specifications of the college for those areas.

Chemeketa employs a sufficient number of well-qualified and dedicated faculty, staff, and administrators to support students, employees, and customers and conduct the work of the college to support an Applied Leadership AB degree. The Executive Team regularly reviews faculty, staff, and administrative workload and identifies student needs to adjust responsibilities as needed. This is done to rebalance organizational infrastructure in order to ensure the college has sufficient employees to achieve its objectives and ensure integrity and continuity of academic programs. Employees are distributed appropriately among the divisions to support academic and operational functions. When the Applied Leadership AB program is launched, the needs of the Applied Leadership AB cohort students will be addressed through the following services and resources.

The college has a large and well-trained staff.

Employee Group	Current Number of Employees
Exempt	101
Classified - salaried	335
Faculty - salaried	221
TOTAL SALARIED	657
Faculty - part-time	315 per term (5-year average)
Hourly and Student workers	315 (5-year average)

Recruitment

The Executive Team considers comprehensive college needs, priorities, and mission prior to granting approval for hire for all new and vacant general-funded positions. Each recruitment is based on an approved position description. Position descriptions clearly define duties and qualifications based on a classification system and the relevant decision-making authority. They outline essential and other functions of the job, qualifications, physical requirements, knowledge skills and abilities, work schedule, and other conditions of employment, and list minimum and preferred experience and skills. Human Resources carefully reviews position descriptions for parity with other similar College positions.

Human Resources, working with department administrators, is responsible for recruitment of all new employees. Open positions are advertised on the college website and through online publications and specialty publications. Depending upon the type of position, recruitment may be local, regional, or national to yield a healthy pool of well-qualified, demographically diverse candidates.

In an effort to further diversify our employee groups, hiring committees receive EEO and Lawful Hiring online training and must attend an Inclusive Hiring Best Practices Training/Workshop that is co-led by Human Resources and the Chief Diversity Officer. All search committees also include a Search Advocate, a specially trained college employee who has received additional cultural competency and unconscious bias awareness training. The College currently has 51 Search Advocates.

Foundational Program Faculty Qualifications

Faculty who teach general education or transfer courses must have at least a master's degree in their subject area. Many have doctoral degrees. This requirement is well-aligned with university hiring practices, and is beneficial to our transfer agreements.

Career and Technical Education (CTE) faculty are required to demonstrate technical expertise, generally in the form of professional experience in their subject area. Some CTE programs require specific industry licensure, training, or education for program faculty. All CTE faculty fully comply with minimum qualifications for their subject area. Most have at least a bachelor's degree, and many hold advanced degrees.

Evaluation: All employee groups are evaluated on a regular and systematic basis to assess effectiveness and support professional development in alignment with the college's mission, educational objectives, and policies and procedures. Chemeketa's Policy and Procedure 3020 Employee Evaluation states that performance evaluations will be conducted on a regular basis or as specified in the current bargaining agreements.

Standardized evaluation forms have been created for each employee group to ensure an equitable, consistent, and predictable process is followed. Evaluation form templates are available to all employees on the college's dashboard. Evaluations incorporate the employee's professional development goals and progress as well as the supervisor's assessment of effectiveness and areas for improvement across a number of performance categories.

Completed evaluations are signed by the employee and supervisor, reviewed by the Human Resources Director, and placed in the employee's file for permanent storage. Employees have the right to view the contents of their file.

Evaluation Processes

Evaluation processes for each employee group follow agreed-upon procedures outlined in the bargaining agreements and handbooks. Both classified and exempt employees are evaluated annually. As outlined in the Classified Association Collective Bargaining Agreement (Article 17), supervisors evaluate classified employees prior to the completion of the six-month probationary period, then annually after that. Supervisors evaluate exempt employees prior to the completion of the one-year probationary period, then annually after that, as described in the Exempt Handbook (Article 10).

Full and part-time faculty are evaluated over a four-year cycle in accordance with the Chemeketa Faculty Association Bargaining Agreement (Article 10) and as described further in the Faculty Handbook. The primary purpose of faculty evaluation is to improve instruction and support ongoing professional development. In addition to performance, the evaluation process provides a means of identifying and acknowledging professional growth and service. In the first year, the supervisor and faculty member meet to outline the process and establish the plan for evaluation. Supervisors work collaboratively with the faculty member to determine assessment methods, timing of touchpoints for the evaluation and each person's responsibility, and the evidence used to evaluate performance. They follow this plan for the remainder of the cycle, culminating in a final evaluation report that is signed by both parties and submitted to HR. The process begins again the following year and repeats throughout the employee's time at the College.

Additionally, describe the adequacy or challenges to acquiring access to other needed teaching resources, such as internship opportunities, industry partnerships, clinical placement sites, access to advanced technical or technology resources or other core assets required of teaching within an applied baccalaureate program in the focus areas as your proposal.

The Advisory Boards for all Chemeketa CTE programs and the Applied AB Advisory Board will assist in placing students in relevant, well-designed internship and project opportunities. The members cover a wide variety of local industries and agencies (see chart in section 2). In addition, the College Career Center and the Cooperative Work Experience (CWE)/ Internship departments will assist in making student connections for external learning resources. The CWE/Internship Program currently works with nearly 200 area employers each year. These existing relationships will be leveraged to expand internship opportunities for Applied Leadership AB students. This program also has experience supporting employers and students with internship placement in the student's existing worksite to ensure new learning opportunities and facilitate growth.

4. Selective Admissions process, if used, is Consistent with an Open Access Institution

Describe the selection and admission process. Explain effort that will be used to assure the program serves diversity and equity to the fullest possible extent. Include specific detail for how students will be selected for admittance when there are more applicants than available seats in the program.

Enrollment of a diverse student population that reflects the demographics of our district will be ensured through a combination of approaches to marketing and recruitment, enrollment, and program experience that are culturally responsive and inclusive of the full community. The college currently has a robust strategic enrollment management team with a strong history of success in recruiting students from equity populations by leveraging connections to community organizations, businesses, government agencies, and schools. For example, one of the major employers in Salem is the state government. Like many large employers, the state struggles to hire employees matching the diversity of the community, especially at the management level. The state already has a large group of employees, many of whom are members of equity groups, with technical expertise who wish to move into management positions. Chemeketa would use its existing relationships with state agencies to market the Applied Leadership AB to those employees.

The primary requirement for students enrolling in the Applied Leadership AB program will be the completion of an associate degree in applied science from an accredited institution. At the outset, enrollment will be open and inclusive, with maximum enrollment set at 40 students per cohort. If applications exceed cohort space, students will be ranked by a point system that includes a preference for Chemeketa graduates, points for meeting required general education credits, and consideration of their response to a short essay on how the degree would assist their personal career plan. The selection criteria will be designed to build a diverse cohort of students. This enrollment approach will be reviewed annually as the program grows to ensure access to a bachelor's level education is being expanded for the BIPOC community, first-generation college students, and individuals who have experienced poverty.

Since the college anticipates that many of the enrollees are likely to be Chemeketa alumni, outreach will begin at the foundational course level, with faculty encouraging students to consider the program, reaching out to alumni in their networks and relying on existing alumni networks, such as TRIO graduates to help promote the opportunity. The college partners with several equity community serving organizations, like Salem NAACP and Mano a Mano, which can be partners in introducing the degree path to the community. To ensure participation, students will be assisted with applying for financial aid and scholarships, including Chemeketa Foundation scholarships.

5. Appropriate Student Services Plan

Describe services and resources that will be needed by the students admitted to the degree program and the college's plan for providing those services for baccalaureate-

level students. (Resources should include both broad and program-specific needs, such as clinical placement sites, technical support for learning management systems and other aspects of online course delivery, specialized equipment or rooms for courses, or access to library resources.) Include a description of financial aid services and academic advising that will be available for students admitted into the program, and highlight alternative ways that adult, non-traditional students may access these services.

Student Support Resources

Chemeketa fosters an effective learning environment through a meaningful, caring, and coordinated system of interwoven programs and services grounded in local context and relationships, with a particular focus on equity and closure of equity gaps. The system supports student learning and success throughout a student's academic career, including transition into and out of Chemeketa—a true student life cycle approach. This comprehensive design grew out of a variety of recent initiatives and assessments. These have been used to create programs and services that not only appropriately support Chemeketa's programs and modes of delivery but also specifically support the district's increasingly diverse student body and communities.

Guided Pathways Framework

Guided Pathways serves as the base for the College's system of support for student learning. In 2018 Chemeketa joined the Oregon Student Success Center's community college Guided Pathways initiative. A noted best practice to address equity, Guided Pathways calls for simplified structures that help students navigate college requirements efficiently, supported by student-focused services and high-engagement instruction. Its "Four Pillars" approach advances student success and employs an equity lens as part of the design and evaluation process. The college uses the four pillars framework to coordinate its student support resources across student and academic departments. Recent transformative student success projects at the college have focused on identifying and reducing barriers, creating clear pathways for access and completion, and adopting a proactive approach for reducing student attrition and increasing student success.

Advising uses the college's newly configured Guided Pathways. The design includes tailored support for students needing academic skill development to succeed in college-level courses, employing practices developed through the college's involvement in Oregon's <u>developmental education redesign</u> project. This design includes accelerated, engaging curriculum, wrap-around student services, a focus on education and career goals, and integrated academic support. These elements work together to shorten distance between developmental coursework and progress on chosen pathways.

Scaled-Up Support Strategies

A complementary set of strategies, developed through a history of successfully supporting underrepresented students, guides students as they enter college and pursue a path. For more than 20 years, Chemeketa has administered TRIO and other college access programs designed to support low-income, first-generation, Hispanic, and migrant-background students. Building on

successes with these student groups, the college has scaled up the high-touch, timely, targeted supports and interventions characteristic of these programs to impact more students. Those efforts accelerated in 2017 when the College was designated Oregon's first Hispanic Serving Institution (HSI) and was awarded a 5-year Title V HSI grant to support its burgeoning Hispanic student population. Designed to lift all students, Chemeketa Accelerated Pathways to Success (CAPS) builds capacity for clearer, supported pathways for students from college entrance to graduation, especially for Hispanic and low-income students. Elements include proactive coaching, placement, advising, and academic support systems designed to work in tandem with Guided Pathways. An Intervention Team is helping to coordinate targeted supports based on student risk factors, to evaluate their effectiveness, and to revise approaches as needed.

Equitable, Comprehensive Suite of Student Support Resources

A rich array of services for academic and personal needs is integral to the college's comprehensive student support system. These services will be accessible and individualized to the needs of students in the Applied Leadership AB program.

Programs and Services that Support Student Learning Needs:

Student Support Service	Description
ABE/GED Transition C enter	The ABE/GED Transition Center provides tutoring, test preparation, success coaching, and resources to assist pursuing a GED.
Advising and First Year Programs	Scholars, Oregon Promise, new student orientation and college preview, academic advising, placement assessment, and the student success course (FYE105). Chemeketa offers academic advising for all students. Mandatory advising, implemented in 2014, ensures that all new students who intend to earn a degree or certificate participate in orientation, placement assessment, and academic advising.

Bookstore

The Bookstore sells textbooks and facilitates the integration of digital course materials at the Salem and Yamhill Valley campuses and online. New, used, rentals, and e-books are available. The Bookstore is an active partner in Chemeketa's affordable textbooks initiative, receiving national attention for its efforts.

Career Services

The Career Center connects students during and after graduation with potential employers for jobs. It provides job listings for part-time and full-time employment, along with resumé and cover letter assistance, interview practice, and other tips for job seekers. The Center also holds workshops and career fairs throughout the year to assist students in achieving their career goals. The Career Services Center will be a placement resource for AB students as they move into the workforce. The Advisory Board has committed to assisting students find placements relevant to their career interests.

Chemeketa Online

Chemeketa Online offers a range of student support services online, including information on advising and financial aid, as well as technical assistance for issues and challenges specific to online learning.

College Completion Program (CCP)

The Chemeketa Completion Program (CCP) helps students navigate college systems, access resources, and overcome challenges to complete their educational goals. CCP serves students qualifying for federally and regionally funded grant programs (TRIO, CAMP, HEP, Gear-Up) and extends Chemeketa's ability to provide similar support for students not eligible for these programs.

Computer Labs and Student Technical Support The Student Computer Centers (Salem and Yamhill Valley campuses) provide student access to printing and computers, information resources, and computer tutoring. Tutoring is available for most instructional software used by the college. Chemeketa Online, the IT Help Desk, and the Student Computer Center work collaboratively to provide technical support for students.

Counseling Services

Chemeketa offers free, confidential, short-term (1-10 sessions) counseling services to currently enrolled students. Counselors assist students with academic, personal and career counseling and work with students to improve life skills, reduce anxiety and manage stress, choose a career and locate community resources.

Enrollment and Student Recruitment Services Student Recruitment, Enrollment, and Graduation Services serves as a resource to students in providing vital services from start to finish and beyond. Student Recruitment manages the college information center, our general college outreach and recruitment efforts, and navigation through new student onboarding. Enrollment Services provides services related to admissions and registration and maintenance of the official academic transcripts and records. Graduation Services provides transcript evaluation services, degree audit and conferral, commencement and the technical administration of Degree Works.

Financial Aid

Financial Aid provides comprehensive information about applying and maintaining financial assistance to pay for college. Assistance is available to students online, over the phone or through in-person help. Financial aid options for students pursuing certificates, associate degrees or applied baccalaureate degrees all follow the same application process and financial aid eligibility rules. Loan progression for students in their second year of study for an associate's degree or third/fourth year of an applied baccalaureate degree allows the students to be considered for additional student loan funds.

Financial aid staff are available to help all students with their financial aid related questions.

International Students:

Student Equity & Intercultural Programs

Student Equity and Intercultural Programs promote equitable access to intercultural learning for Chemeketa students. This is done in partnership with academic & service areas to provide opportunities like virtual language exchange, credit based short term service learning, and other district area intercultural projects in and outside of the classroom. The unit supports the Intercultural Resource Center providing students of all backgrounds with resources, space and technology to conduct their own intercultural projects, learn about intercultural topics and attend training. The program also provides specific services for international students on non-immigrant visas or in process of a change of status to support their retention & completion while maintaining compliance with federal regulations and college policies. Chemeketa's Primary Designated School Official (PDSO) updates the Department of Homeland Security on the colleges SEVIS I-17 as qualifying new programs, certificates &/or degrees are added.

Language Center

The Language Center provides resources to support language learning for independent and classroom settings including over 50 computers with webcams and multimedia headsets. The Center is open to all students enrolled in language courses, including ESOL/ENL, American Sign Language, and foreign languages.

Library Services

Chemeketa libraries (Salem and Yamhill Valley campuses) provide access to extensive learning resources in support of teaching and learning. Electronic collections and reference support are available 24/7. Textbook and technology lending programs provide free, term-long access to a limited set of textbooks, laptops, and other equipment like calculators and wifi hotspots. Print materials may be checked out at four pick-up sites across the district and delivery by mail is available for a modest fee. The library has access to the combined collections of the Orbis Cascade Alliance and 2-day article requesting via RAPID ILL. Modest investments in upperdivision resources will round out local access to collections supporting the Applied BA. Faculty librarians are prepared to meet instructional requirements for upper division information literacy instruction. Chemeketa is an active participant in the Oregon Writing & English Advisory Committee (OWEAC), working with university partners across the state to align upper and lower division information literacy and writing instruction.

Math Learning Center

The Math Learning Center provides academic and testing support for individualized study options for math courses.

Student Accessibility Services Student Accessibility Services determines ADA-related accommodations and modifications through a case-by-case interactive process. Services include assistive technology assessments and supports, literacy software, communication access (e.g., signed language interpreting and real-time transcription, accommodated testing, enlarged and braille materials, and multiple classroom supports). Student Accessibility Services works collaboratively with student and academic programs to remove barriers to access and promotes inclusion in all college-sponsored facilities and events.

Student Retention and College Life

The Office of Student Retention and College Life offers Multicultural Student Services, opportunities for civic engagement, free speech and civil discourse, student employment and leadership training, textbook lending, mentoring, and college-wide events. It coordinates student government, clubs and organizations, the Retention Hub, and the college <u>Food Pantry</u>.

Testing Centers

A full range of testing and proctoring services is available at four Chemeketa locations (Salem and Yamhill Valley campuses, Polk and Woodburn centers). Chemeketa's testing centers are open to students and community members. Services include both academic proctoring and standardized testing and credentialing, including but not limited to a wide number of Pearson Vue exams such as GED and NES, CLEP, State Building Codes, Metro Institute pesticides, challenge exams, and more.

Tutoring and Study Skills Center

All enrolled Chemeketa students can access a variety of tutoring and study skills services, including drop-in peer tutoring in math, science, reading, writing, and languages, study skills and writing workshops, and space for quiet study. Seven day access to eTutoring through the <u>WeTC</u> is also available to all students.

Veterans Services

Chemeketa's Veterans Services provides information about eligibility, admission, financial aid, GI Bill® and many other important college resources to help veterans reach their educational goals.

Writing Center

The Chemeketa Writing Center (CWC) and Chemeketa Online Writing Center (COWC) help students with any writing assignment or project free of charge. Student can receive help at any stage of the writing process from brainstorming to revising and editing, offering one-on-one, group, and online consultations with Chemeketa instructors.

Advisors, faculty, and others in support services roles connect students to the resources that will best help them succeed in Chemeketa's programs. The college also provides effective technology resources for learning. The college has transitioned to the user-friendly learning management system Canvas, and an active Tech Hub helps users put these tools to work to best support learning.

An organizing principle underlying this system of support is Chemeketa's "one college" vision to provide equitable support across the district. Recent innovations resulting from COVID-19 responses have expanded the College's capacity to meet student needs in a virtual environment. Academic and service offerings previously considered viable only in-person, during limited hours and in limited places, have proven to be effective, delivered remotely 24/7. These services have been streamlined for easy single-point access on the College's Remote Learning Hub.

Using Results to Improve Services

The college is keeping a keen eye on results and equity gaps to identify opportunities for improving its student support resources. A range of recent assessments of the institutional learning environment and student outcomes helped to shape services, and data from institutional indicators continue to impact them. Disaggregating data to identify equity gaps has become a college norm, integrated into such activities as college advisory council work, the program review process, and college Board of Education updates. The recently redesigned Student Affairs division is working to lift the effectiveness and efficiency of student services for all students by continuously tracking and responding to related data. The Student Success and Completion Advisory Council (SSCAC) oversees the work of student recruitment, retention and completion, using data to monitor and evaluate student services. The council is further charged with advising college leadership on how to prioritize the use of resources to support student success, and identify and solve project implementation issues.

Communicating Resources to Students

Chemeketa provides clear and accurate information to students and the public on its website and in the college catalog. This includes its mission, personnel, and details necessary for successful planning, enrollment, and completion of educational goals.

Website

Chemeketa's website and catalog include accurate information about eligibility requirements for licensure or entry into occupations or professions for which the education/training is offered. Programs leading to professions which require a clean criminal history require background checks prior to admitting students, and are clearly labeled in the website and catalog, as well as in program application materials for limited-enrollment CTE programs. Programs leading to professions that require drug screening are similarly labeled as such. Many programs detail additional information regarding occupation requirements in program-specific student handbooks.

Financial Aid

Chemeketa provides a comprehensive financial aid program for students needing assistance paying for educational expenses. The college is approved for participation in the Title IV programs under the Higher Education Act as well as with State of Oregon financial aid funding administered through the Higher Education Coordinating Commission (HECC). Additional scholarships and other funding support are available to Chemeketa students through the college. The Chemeketa Scholars program offers full tuition for newly-graduated district resident high school students who have earned a cumulative 3.5 GPA. The Chemeketa Foundation awards more than \$500,000 annually in scholarships to students whether or not they qualify for federal financial aid. The college and Foundation broadly publicize these opportunities each winter when applications are being accepted.

Information about financial aid programs is published on the college website and in the college catalog. In addition to published material, information about financial aid is shared with students through presentations that financial aid staff offer at the college and at area high schools, as well as during advising appointments and throughout the enrollment process.

The Chemeketa financial aid website describes loan obligations to prospective and current students. Specific materials are delivered electronically with the financial aid offer, paying special attention to loan requirements and the need that they be repaid. Chemeketa requires active loan acceptance from students in their financial aid offers.

Prior to the first disbursement of an accepted student loan at Chemeketa, student loan borrowers must complete online loan entrance counseling, utilizing the tool provided by the US Department of Education. When a student ceases to be enrolled at least half-time, loan exit counseling materials are sent electronically to the student's personal email address. If the student does not complete the loan exit counseling electronically within 30 days, a follow-up letter is mailed to the student using US mail.

Chemeketa has a contractual agreement with Loan Science Student Connections to provide outreach to former students who are more than 60 days delinquent on a student loan payment. The intent is to educate the delinquent borrowers about repayment options, and encourage them to contact their loan servicer to return the loan to good standing.

Shared Model of Academic Advising

Chemeketa offers robust, systematic and effective academic advising for its students on all campuses and outreach centers and online, delivered by well-prepared staff who are knowledgeable of college curriculum, program requirements, transfer information, and graduation requirements. Chemeketa uses a shared model of academic advising, and the recruitment, intake, and advising processes help connect students to the people who can best help them realize their educational goals. **Advisors** comprise the central team that guides advising at the college. Advisors help incoming students interpret placement results, develop academic plans, create a plan for transferring, and recommend access or transition to other support resources as needed. Additional advisors serve specific populations (TRiO, Athletes, CAMP, College Completion Program, Student Accessibility Services, and Academic Transitions). **Navigators** in the Recruitment department connect with prospective students in the community and support them through a case management model until they are ready for the next step in the Mandatory Advising pipeline. **Counselors** help undecided students determine academic paths and explore career options, and **faculty advisors** support CTE students after their first term.

Advising for the Applied Leadership AB cohort will come from the full-time faculty member and the .5 FTE Applied Leadership AB Navigator. The college realizes that this defined allocation for advising is vital to student success in the new program. The college is committed to student success in this degree program and has budgeted accordingly.

Based on developmental advising theory, advising at Chemeketa takes a proactive "intrusive" approach with students, anticipating student needs as they arise, reaching out to students rather than waiting for students to come for help.

Chemeketa has implemented a carefully structured mandatory advising system in response to current research and best practices for supporting community college students. This comprehensive effort provides wrap-around services and early, required interactions between students and advisors to ensure students start out on the right path and have a clear plan for their future. All Applied Leadership AB degree-seeking students will work with program advisors, meeting quarterly for the first year. The navigator and faculty advisor will also assist with internship placement, career opportunities and final credit attainment in the second year.

It should be noted that Chemeketa will continue to advise the on average of 100 students who graduate each year with the Associate of Science Transfer-Business to pursue transfer degree opportunities at Oregon's public and private universities.

Advisor Knowledge and Training

The Advising and First Year Programs department coordinates advising expectations and advisor training district-wide, keeping all advisors well-informed through regular communication.

New staff members who will have caseloads of mandatory advising students participate in an intense training program. Training curriculum is grounded in the Global Community for Academic Advising (NACADA) professional competencies. All advising staff attend monthly

training regarding current college and transfer requirements. They also work closely with the Career and Technical Education (CTE) programs and attend CTE advisory committee meetings. This partnership ensures that advisors have up-to-date CTE program information.

Advisor Responsibilities

Advisors support students with academic planning, information about financial aid and career planning resources, and general problem-solving to plan for academic success. After their first term, advising responsibility for CTE students transitions to faculty teaching within their program. Students who indicate they are undecided about their academic focus are assigned to a counselor for a more in-depth exploration to determine the direction they would like to take with their education.

All advising notes are stored in Banner Self-Service and are available to any college employee assigned to provide advising support to an individual student.

Advisors use Degree Works, an automated system that allows students and their advisors to view all necessary information for developing effective educational plans, including grade point averages, placement assessment, completed courses, prerequisites, degree audits showing remaining courses required for any range of certificate or degrees, and certificate and degree requirements.

Student planners/handbooks are available to all students and include information on key student support services including roles and relationships with academic advising.

Evaluation

Continuous improvement is part of the college's advising culture. In addition to reviewing results from formal student satisfaction surveys conducted by the college, advising staff regularly collect feedback from students as they work with them. In weekly staff meetings and monthly district-wide team meetings, advisors consider adjustments based on what students tell them does and does not work well. The team is also committed to professional improvement, keeping up to date with best practices in the field and implementing research-based improvements.

Each fall, Advising and First Year Programs conducts an internal review of the year's progress and develops a plan for the coming year as part of the college's annual planning process. The department is additionally slated to begin the college's program review process this winter and will present their findings in 2021-22. Staff anticipates reviewing results from the advising process and considering adjustments in response to that information.

Chemeketa maintains an effective verification process for all students, including distance education students, which both ensures the identity of the student and protects student privacy. There are no current or projected charges associated with the verification process about which the college would need to inform students.

At the time any potential student applies for admission, they provide their identifying information and then are assigned a unique student ID number, an email address, and a username, and they are prompted to create a secure password. They are advised not to share this information with anyone. All college communication and interaction between the student and the college -- including accessing distance education learning portals -- is protected, accessible only by

secure username and password. This authentication process protects the privacy and security of student information.

Many instructors require distance education students to take proctored midterm and final exams in college testing centers as a means of verifying that the student enrolled in the course is the person whose work is being evaluated. Testing centers require current, government-issued photo ID for authentication, and employ proctors in the testing rooms to safeguard against cheating. Distance education students in special circumstances may request a virtual or remote proctored exam through the Chemeketa Testing Center. They must show a photo ID on camera during this remote process, and must provide their student ID number. There is no cost to the student for this service.

Library and Information Resources

Chemeketa's library and information resources play a central role supporting student success and ultimately the college mission through close partnerships with academic departments, service areas, and the community. Chemeketa invests in 1) library and information resources to support all available programs of study, 2) tools that further support student success such as study rooms, student use technology, technology tutoring, information literacy instruction, and other library support services, and 3) community partnerships with area libraries.

Chemeketa has two libraries serving the district and a robust suite of online services available 24/7 through the library's website, including chat reference, discovery systems, and access to the digital collection. Partnerships with other libraries supplement the local collection and provide access to extensive resources in support of lifelong learning and academic inquiry. Chemeketa is a member of the Chemeketa Cooperative Regional Library Service (CCRLS) and the Orbis Cascade Alliance. Through resource-sharing agreements, Chemeketa patrons have access to the 17 community libraries in the college district and 38 academic libraries across Idaho, Oregon, and Washington. The library offers a variety of services for faculty. Librarians provide individualized, point-of-need, and group instruction in research and information literacy skills, and work in partnership with faculty to integrate library and information resources into the learning process. Library instruction is informed by the Association of College and Research Libraries framework and statewide information literacy student learning outcomes. Librarians work closely with academic programs on assignment design and assessment. Customized library instruction is available for any subject or class, across all modes of instruction, and at all college locations. The library uses LibGuides to organize course and subject-specific information.

The library ensures the quality and adequacy of library resources and services through regular assessment and monitoring. Collection development guidelines specify means for evaluating the quality of resources for selection and deselection, and procedures are in place to ensure a balanced, curriculum-focused process for evaluating challenged materials. Statistics are collected throughout the year to track usage of key services. Satisfaction with library services is measured through the college's periodic student

satisfaction surveys, a biennial survey of students about the library, and through regular consultations with faculty. The following tables show key statistics reported for the 2019 ACRL Library Survey for Chemeketa.

Library Collection, 2019 ACRL Library Survey

Material Type	Physical	Electronic
Books (title count)	57,745	179,413
Databases		82
Media	2,487	99,412
Serials	785	41,947

Library Use Statistics, 2019 ACRL Library Survey

Library Use Type	Use Reported
Initial Circulation (physical collection)	12,178
eBook Use (COUNTER BR1+BR2)	61,831
eSerial Use	143,093
Information Services: Transactions	4,947
Virtual Reference: Transactions	863
Library Instruction Sessions (physical)	196
Library Instruction Attendance (physical)	3,622
Library Instruction Sessions (online)	17
Library Instruction Attendance (online)	100

Gate Count (annual)

198,212

Gate Count (typical week)

6.776

Initial evaluation suggests that Chemeketa's library collection is sufficient to provide most materials of potential interest for the Applied Leadership AB. If Chemeketa is approved to move forward with the AB, a more intensive evaluation would be conducted with the help of program faculty, resulting in specific recommendations for modest investments to round out the collection for upper-division work. The library subscribes to several key resources of particular relevance to the proposed program of study. These include ProQuest Central, including ABI/Inform, EBook Central (a collection of over 110,000 academic ebooks), ScienceDirect - Health & Life Sciences and Social & Behavioral Sciences collections, Oxford University Press Journals Collection, and two large collections of educational streaming media. A full list of the library's databases is <u>available</u> for review. Students would also have access to the extensive research collections available through our resource-sharing partnerships with the Orbis Cascade Alliance and the RAPID ILL network.

Physical and Technology Infrastructure

Chemeketa strives to create both physical and virtual environments that are accessible, safe, secure and adequate to sustain the College's mission, academic programs, and services. These characteristics are critical components of the Access, Community Collaboration, Academic Quality, and Student Success core themes.

Physical Facilities

Sufficient in Quantity and Quality

Chemeketa comprises approximately 1.38 million square feet of building area on 298 acres of property, with 30,000 additional square feet added in 2020. Based on current projected enrollment, its facilities are expected to be of sufficient quantity for the near future. Therefore, current emphasis at the college is modernization and improved space utilization of the existing facilities. The Applied Leadership AB will be housed at our newest building on campus. This is the new Agricultural Hub, which is a facility on the edge of campus, which will make it more easily accessible for non-traditional students coming into campus. The programming in Agriculture will complement the scheduling grid to accommodate this non-traditional adult degree type of program.

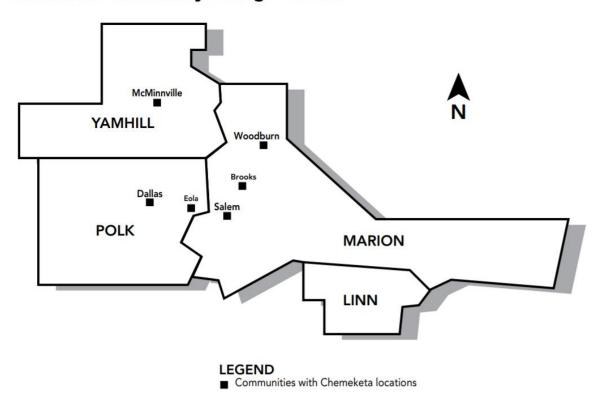
Accessibility

Accessibility to physical facilities housing student instruction and services is demonstrated in two contexts: geographical proximity and barrier-free access.

The college is committed to providing access across its service area that spans four counties --Marion, Polk, Yamhill, and a portion of Linn. Its locations are distributed in its highest populated areas: campuses in Salem and McMinnville (Yamhill Valley campus); regional centers in Woodburn (Woodburn Center) and Dallas (Polk Center); and specialized centers in Eola (Northwest Wine Studies Center), Brooks (Regional Training Center for Emergency Services) and downtown Salem (Center for Business and Industry). Specialized centers offer education and training for specific programs or populations.

In addition to student access to facilities, we provide opportunities for community members to access and utilize college facilities in a number of ways including public events, facilities rentals, a comprehensive property leasing portfolio, and other opportunities as identified through Board policies.

Chemeketa Community College District



The college prioritizes providing barrier-free access. College facilities are accessible to the entire community and are compliant with the Americans with Disabilities Act (ADA) accessibility requirements. In addition to designing and constructing all facilities in compliance with governing code, the college employs a Student Accessibility Coordinator who acts as a point of contact and advocates for persons with special needs concerning ADA accessibility. The Facilities and Operations department has developed an evaluation system to help the college prioritize needs, identify needed resources and funding, and more efficiently interweave accessibility-related improvements into facility remodels and reconstruction work.

Safety and Security

All Chemeketa facilities are constructed and maintained in compliance with governing codes and regulations related to occupant safety. A standing Safety Committee monitors safety issues related to facilities as they arise and college staff coordinate our environmental health and safety program to ensure compliance with governing regulations.

Personal safety is a top priority for the college. Chemeketa's Public Safety office is dedicated to keeping the college community safe and enforcing college policy in all its facilities. Staff are carefully vetted before becoming part of the Public Safety team, and officers patrol all college property and facilities, with a regular on-site presence at the Salem and Yamhill Valley campuses and at the Chemeketa Center for Business and Industry. Facilities are secured outside of regular business hours and accessible only with identification cards and personal access codes. Students and staff may also request safety escorts.

The college maintains records of any crimes or public safety concerns on college grounds and issues a Clery Report each fall that is posted on the Public Safety page of the college website. Several committees monitor and address institutional safety, crisis management, and emergency preparedness including the college's Threat Assessment Team, the Behavioral Intervention Team, and the Emergency & Risk Management team. The committees are charged with ensuring that college practices align with Board policies and procedures, and that these are regularly updated to meet the safety and security needs of the college community. Emergency preparedness is a standard element in new employee training and is addressed on the Public Safety website.

A Title IX officer in the Diversity, Equity, and Inclusion office manages the college response to sexual harassment concerns, and the college complaint process includes extensive support for incidents that align with Title IX legislation.

Continuous improvement is central to ensuring safety and security at Chemeketa. Several recent upgrades have helped the college to maintain safe and secure learning and work environments:

- The college's proximity card system, which offers reliable entry to secure areas, was expanded to include classroom doors in recently constructed buildings.
- All classrooms are equipped with emergency telephones, public address speakers, and lock mechanisms that can be operated from inside the room, and security cameras have been installed at most facilities.
- The college entered a partnership agreement with the Marion County Sheriff in 2019 for building space on the Salem Campus. This location now serves as a substation for the Sheriff.
- In 2015, new technologies and protocols were adopted to allow for local emergency push-button lockdown systems that can be activated by employees within sensitive areas (office suites, child care, High School Programs) without requiring the intervention of Public Safety.

Planning for The Future

A Capital Projects Steering Committee guides college decisions related to property and infrastructure development, and ensures that investments in these areas are aligned with Chemeketa's mission. The college maintains a Long-Range Facilities Plan as a blueprint for future development to ensure that adequate infrastructure is in place to meet future needs. Regularly reviewed and most recently updated in 2018, the plan intersects with strategic and

academic planning to align with Chemeketa's academic needs and direction. The next major Long-Range Plan update will begin this academic year (2021-22) in conjunction with work on the Academic Plan. The update will be developed in collaboration with key college personnel and members of the community to ensure a comprehensive and far-reaching perspective. Minor updates are slated to occur annually thereafter.

Covid-19 Response

The College has carefully followed the Center for Disease Control and Prevention and State of Oregon health information and directives in response to COVID-19. With a team of diverse and experienced faculty and staff representatives, the Manager of Emergency and Risk Management developed and has frequently updated an operational plan to protect students and staff in college facilities during the pandemic. The plan specifies college requirements for masking, safe distancing, disinfecting, and congregating students and staff. Planning is now underway for the phased reopening of college facilities over the coming year.

Technology

Technology Infrastructure

Chemeketa has appropriate and adequate technology systems and infrastructure to carry out its mission, core themes, and strategic goals. Students in the program will require flexible and accessible technology that is relevant to the Applied Leadership AB coursework. The college provides a complete range of technology solutions designed to support the academic needs of students and faculty, the business needs of college employees, and the specialized needs of community and partner organizations.

As technology options and needs evolve at an ever-increasing pace, the college continues to improve utilization and access to technology. A Technology Governance Committee was established in 2019 to oversee and recommend technology plans and investments to ensure that these align with the college's strategic direction. This year (2021-22) Chemeketa is beginning work on the development of a new Long-Range Technology Plan for the college that will intersect with the Academic, Strategic, and Long-Range Facilities plans and guide decisions and investments now and in the future. The goal is to ensure a comprehensive approach to strategic system utilization, purchasing and implementation.

Technology Support

Technology support for students, employees, and partner organizations is provided through several different support services. Chemeketa's Information Technology (IT) Department operates the College Help Desk for drop-in assistance with passwords, Wi-Fi access and other easily-addressed assistance. The Technology Hub provides further support to students and faculty utilizing the newly implemented Canvas Learning Management System. Additional resources for infrastructure needs are available through the Facilities Help Desk. 24/7/365 software support is available for employees and students through a service contract with Vitalyst.

Classroom Technology

All classrooms are fitted with presentation technology, including a computerized instructor station and projectors or large-format displays with multimedia capability. General purpose student computer labs staffed by support staff are available in every Chemeketa location. Additional dedicated special-use computer labs are established for technology-based training needs (e.g. Computer Science, Visual Communications, and Drafting Technology). Classroom and service area equipment is regularly updated to ensure that students and staff have access to current technology. As we move forward with more face-to-face instruction and services, a key focus will be on updates to classroom and conference room technology to enable hybrid formats for instruction and meetings.

Access to Technology Platforms and Products

High-speed Wi-Fi access is now available at all Chemeketa locations. In some cases, this access has been extended into parking lots during remote operations to provide access to students who may not have reliable internet service at home.

A single sign-on solution has been developed to provide easier access to more than 20 systems and services for employees and students. This has significantly reduced the need for repeated log-in and authentication throughout the day as the user moves from one tool to another. Users see available products based on their role.



Robust and Secure Technology

The IT work has focused heavily on transitioning on-premise servers to cloud-based solutions to improve accessibility and uptime, and reduce maintenance and hardware replacement costs. A second focus has been on upgrading network infrastructure choke points to improve connectivity speed and reliability.

The college has made a significant commitment to digital security and risk management. IT staff have instituted information security practices that help the college mitigate risk, remain compliant, and react quickly to potential threats. Requests for access to data are granted only after appropriate need is determined and training has been completed. Tools and practices have been implemented to identify and neutralize external hacking attempts.

Of equal importance, college data is protected from loss due to equipment failure or disaster. The entire database of student records is securely stored in data centers on the west and east coasts of the United States. All database instances are encrypted.

6. Commitment to Build and Sustain a Quality Program

- 1) Types of funds to be used to support the program: The college will use its General Fund account to pay for the Applied Leadership program start-up and instruction for the first four years. This allows the dedicated time and resources needed to build the quality model we intend and market the program to our community members and industry partners. Tuition costs will go to the general fund, while fees will be collected to support adjunct instruction as enrollment grows to a sustainable level required for ongoing support of the program.
- 2) Projected Program Expenses: Program expenses are calculated based on current employee contracts and standard rates for services. The table below identifies projected program costs. The program is highly sustainable and does not require costly equipment or new facilities. Major expenses are faculty, marketing, instruction and course support, student affairs support/library services, and financial aid services to students. The college has budgeted 15% for administrative costs.
- 3) New facilities, equipment, technology, or instructional resources needed for the program: No new facilities or facility modifications are required for the program. This program will be held in a space that is state-of-the-art and our only net-zero building, and contains student collaboration and meeting areas and technology-enhanced instructional classrooms. We have budgeted for additional library resources to support additional upper-level courses.
- 4) Anticipated revenue based on reasonable assumptions relative to revenue sources: The budget is based on an anticipated cohort size of 15 students per cohort, in both year one and year two. In alignment with college policy, final tuition rates will be approved by the Board of Education in the established tuition fee timeline. For the purposes of planning, we have used the projected tuition \$203 and fees rate of \$34 as a break-even model to help us understand true costs.

PROJECTED REVENUE	YEAR 1	YEAR 2	YEAR 3	YEAR 4
1. Nonresident Student Tuition				
2. Nonresident Student Fees				
3. Resident Student Tuition	\$137,025	\$274,050	\$274,050	\$274,050
4. Resident Student Fees	\$22,950	\$45,900	\$54,000	\$54,000
5. Contributions/Grants				

7. College Budget Allocation	\$60,319			
8. Federal Funds				
9. Other:				
TOTAL PROJECTED REVENUE:	\$220,294	\$319,950	\$319,950	\$319,950

PROJECTED PROGRAM EXPENDITURES

	YEAR 1	YEAR 2	YEAR 3	YEAR 4
INSTRUCTIONAL:				
1a. Faculty FTE for Full-time	1.15	1.15	1.15	1.15
1b. Faculty FTE for Part-time	0.35	1	1	1
Faculty Full-time Salaries/Benefits	\$118,392	\$122,124	\$126,012	\$130,061
Faculty Part-time Salaries/Benefits	\$19,286	\$62,784	\$68,169	\$75,158
Faculty Support (lab or IA)	\$0	\$0	\$0	\$0
Other: Navigator .5 FTE	\$41,842	\$43,226	\$44,737	\$46,209
SUB-TOTAL	\$179,520	\$228,134	\$238,919	\$251,428
OPERATING EXPENSES				
1a. Academic Administration FTE(eg program chair, director, etc.)				
1b. Academic Administration Salary/Benefits				
1C. Academic Administration -Other Expenses				
2. Materials/Supplies-required for teaching	\$2,500	\$2,500	\$2,500	\$2,500
3. Travel	\$1,000	\$1,000	\$1,000	\$1,000
4. Technology				
5. Initial Accreditation review/initial external reviewers' expense	\$2,000	\$0	\$0	\$0
6. Student Services Support				
7. Other Professional Services	\$2,000	\$2,000	\$2,000	\$2,000

8. Communication /Marketing	\$1,000	\$1,000	\$1,000	\$1,000
Other program supplies/services (Describe briefly below): Faculty office phone line	\$540	\$540	\$540	\$540
, ,	Ψ340	Ψ340	ψ340	ΨΟΨΟ
Other program-specific operating expenses-Admin overhead	\$28,734	\$35,726	\$37,344	\$39,220
SUB-TOTAL	\$37,774	\$42,766	\$44,384	\$46,260
CAPITAL OUTLAY				
Library Resources: Purchase/Subscription/Access fees/Other	\$3,000	\$3,000	\$3,000	\$3,000
2. Technology equipment or resources				
Other equipment required for program instruction				
Facilities/Renovations (specific to new program)				
SUB-TOTAL	\$3,000	\$3,000	\$3,000	\$3,000
TOTAL PROJECTED EXPENDITURES:	\$220,294	\$273,900	\$286,303	\$300,688

7. Program Specific Accreditation

Provide a copy of the most recent accreditation status report for the institution, as well as specific program accreditation status report, if relevant to the proposed program.

The college's most recent institutional accreditation report is attached at the end of this document.

Once approved to proceed by HECC, the college intends to apply to our accrediting commission, Northwest Commission on Colleges and Universities (NWCCU) according to their process for substantive change. Details on that process can be found here: https://nwccu.app.box.com/s/ckxhvwje3xybskbkz3hs9x8yqiw3o916

According to NWCCU, this is the process for adding a degree at a new level: First Degree at a New Degree Level: The first-degree program offered at a level at which the institution does not already offer degrees (associate, bachelor's, master's, doctorate) must be considered by a Review Panel. Professional doctorates and research doctorates are considered distinct credential levels, and the first credential at each degree level requires a Panel Review. Upon approval of a new degree level of accreditation, the institution may be asked to host a follow-up evaluation with an onsite evaluator to evaluate the implementation of the degree level or credential according to institutional plans.

The college has had conversations with NWCCU about this new degree and anticipates starting the review process once the HECC approval process has been completed.

8. External Expert Evaluation

Summarize the college's responses to the reviewers' comments and note any subsequent modification to the proposal based on evaluator's recommendations. Provide copies of external evaluators' reports or letters, in addition to the college's summary.

Response to Reviewers' Comments:

were available electronically for students in most classes.

Reviewer: Mel Gregg, Human Resources Director, City of Woodburn Response to comments: Ms. Gregg had very positive comments about the proposal. From her vantage point as an HR director, she commented that the degree option would be a great option for city workers, like those from public safety, city records, building inspection or water treatment departments who need a degree to advance to leadership positions. She suggested that the curriculum for the degree include basic labor and employment laws since many will be supervising in unionized sectors. Chemeketa has included labor and employment law in the curriculum (see section 1 of this proposal). Gregg also suggested well-designed internship and project opportunities to complement the seminar approach. Sector-specific internships and projects are part of the course sequence (see section 1 for more details). Gregg also mentioned the need for remote accessibility for library and course text materials. In line with the college's current efforts to decrease the cost of textbooks in order to make the program as accessible as possible, course materials and library resources will be available electronically whenever possible. The library, bookstore, and Chemeketa Press are all working to make the majority of course materials available at low- or no-cost, as detailed in section 5. We have budgeted for curriculum development and library materials which will be designed for accessibility while maintaining academic quality. During the 2021-22 school year, all Chemeketa course materials

Reviewer: Retired Colonel Paul Disney, WOU Adjunct Professor of Organizational Leadership Response to comments: Mr. Disney expressed approval of the program and confirmed the need for graduates based on regional employment data. He suggested that a leadership ethics course be included in the curriculum. The college has included ethics in the course sequence to be delivered in each of the core leadership and management courses. Embedding ethics throughout the sequence imbeds it as a core part of a leader rather than a side topic. Disney also mentioned the importance of explicitly developing teamwork and leadership skills as these are often highly prioritized by employers. The college will embed teamwork and leadership skills in all courses. Year one courses will teach students to work together in cross sector teams to solve complex issues facing businesses. In the second year, students will be solving problems in their own industry sectors with teams of people in their own organizations or by utilizing industry specific scenarios within the courses.

Reviewer: Dr. Robert Birkenholz, Professor Emeritus of, The Ohio State University, Columbus **Response to comments**: Dr. Birkenholz recommended restructuring the learning outcomes around being a leader. The college proposal now contains this structure (see details in section 1 of the proposal). Birkenholz also responded to several sections needing further information. The proposal now contains more information to explain required faculty qualifications,

information on required general education requirements, and extensive detail on student support resources. Detailed syllabi will not be available until later in the process, when faculty are hired and course curriculum is developed.

External Evaluators' Reports and Information:

WORKSHEET FOR EXTERNAL REVIEWERS (3 Pages)				
College Name:	Chemeketa Community College	BAS Degree Title:	Bachelor of Applied Science (BAS) Degree in Management and Leadership	
Reviewer Name:	Mel Gregg	Institutional or Professional Affiliation:	Professional	
Professional License or Qualification, if any:	M.S. in Business & Management, SHRM-SPC, IPMA-SPC ollowing specific element	Relationship to Program, if any:	Board member for Office Admin. & Technology Advisory Committee	
Tiease evaluate the i	onowing specific element	•		
a) Concept and overview	appropriate to current em academic standards? We Comment Yes. This degree would he for certain positions. Such management require back management such as City	Is the overall concept of the degree program relevant and appropriate to current employer demands as well as to accepted academic standards? Will the program lead to job placement? Comment Yes. This degree would help applicants meet minimum qualifications for certain positions. Such as leadership positions in Police management require bachelor degree. Or for other office management such as City Recorders or Building Official, Wastewater Treatment Plant supervisor types of positions.		
b) Degree Learning Outcomes Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?			rate appropriate	
	Comment Yes. It may benefit from a laws. Oregon is a heavy u managers and supervisors and hour, labor, protected	nion state. It help s have basic und	os tremendously when erstanding of laws in wage	
c) Curriculum Alignment	Does the curriculum alig Document? Comment Yes. It would definitely assigned to attain higher degree a diverse community.	sist in getting adu		

d) Academic Relevance and Rigor	Do the core and elective courses align with employer needs and demands? Are the upper level courses, in particular, relevant to industry? Do the upper level courses demonstrate standard academic rigor for baccalaureate degrees? Comment yes. Seminar level courses seem to be designed to provide opportunities for sector specific learning. Well designed internships and projects would be necessary to keep the rigor of the seminars.
e) General Education Requirements	Are the general educations requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements? Comment Yes. As the AAS would provide the general education requirements.
f) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum? Comment Yes
g) Resources	Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities? Comment Yes. I am not sure about online borrowing capabilities for books and other materials.

h) Member Advisor Commit	y	Has the program received assistance through input and feedback from an appropriately convened Advisory Committee? Has the program responded appropriately to its Advisory Committee's recommendations and/or concerns? Comment Yes. I feel that my input was heard.
i) Overall		Please summarize your overall assessment of the program.
assessm		Comment
	endations	I believe it would benefit the communities this college serves and would improve the overall educational and financial status of residents as the program is marketed and utilized increasingly.
Reviewer Bio		
		hort bio here or attach as separate document.
		nological Counseling, 1991, Bosphorus University, Istanbul, Turkey trial Management. 1994 Wright State University, Dayton, OH
Sr. HR Analyst, HR Specialist M HR Director AXA Personnel Direc	City of Sale issoula Cou A Assurance tor Washing	ınty 2007-2008
SHRM-SPC		
IPMA-SPC		
ADA Coordinato	r Certificate	e (ACTCP) with Advanced Certificates for Title I and III

Mel Gregg

M: 503-983-8550

melgregg@hotmail.com

WORK EXPERIENCE

2016- Present Human Resources Director, City of Woodburn

Responsible for administering the City's human resources program including recruitment and selection of employees, development and maintenance of the classification and compensation system, performance appraisal systems, ADA accommodations, design and analysis of salary surveys, and organizational development analysis. Administering and negotiating the City's collective bargaining contracts. Responding to grievances, gathering evidence, interviewing witnesses, handling other details in preparation for arbitrations and hearings before administrative agencies, interpreting laws, rulings and regulations for City officials and staff related to labor relations, advising supervisory and management staff regarding labor relations and human resources procedures, rules, laws, and conflict avoidance and resolution measures related to effective labor relations, studying legislation, arbitration decisions, and collective bargaining contracts to assess industry trends.

2008-2016 Senior Human Resources Analyst, City of Salem

Responsible for administering the City's human resources program including recruitment and selection of employees, development and maintenance of the classification and compensation system, performance appraisal systems, ADA accommodations, design and analysis of salary surveys, and organizational development analysis. Administering and negotiating the City's collective bargaining contracts. Responding to grievances, gathering evidence, interviewing witnesses, handling other details in preparation for arbitrations and hearings before administrative agencies, interpreting laws, rulings and regulations for City officials and staff related to labor relations, advising supervisory and management staff regarding labor relations and human resources procedures, rules, laws, and conflict avoidance and resolution measures related to effective labor relations, studying legislation, arbitration decisions, and collective bargaining contracts to assess industry trends.

2007-2008 Human Resources Specialist, Missoula County, Montana

Responsible for job development, recruitment, classification and compensation analysis for all positions within the County. The County has 700+ employees and 10 different bargaining units.

- Implemented key performance indicators for Recruitment processes
- Developed Exit Interview tool
- Updated existing job descriptions and interview questions

1999-2003 Human Resources Director, AXA Insurance Company

AXA is a multi-national insurance company with more than 120,000 employees, headquartered in Paris, France, being one of the top 30 companies in the world according to Forbes and located mainly in Europe, North America and Asia Pacific.

Responsible for the strategic and operational management of Human Resources, training, internal communications, facilities, customer service and quality management divisions. Responsible for coordination and standardization of all HR and training functions of subsidiary companies, with a total of 1,300+ employees and 1,200+ agents. As an Executive Committee member, developed the three-year strategic HR plan and related projects.

- Developed competency management and secret shopper programs
- Project owner for conversion to Oracle HR and training programs
- Successfully merged the life and non-life companies' management
- Conducted the first wage and HR practices survey within the sector
- Developed Company Intranet and Internet design and content
- Completed the reengineering project, bringing costs down in administrative functions & staffing
 while instilling the new cultural values as well as developing the Company's brand and image
 standards in regional offices and headquarters
- Acquired and maintained the ISO 9001 certificate
- Managed the customer complaints received via e-mail, hotline and in person
- Brought down turnover in direct sales force from 69% to 3% in two years
- Prepared the HR policy and vision for the Group
- Coordinated the administration of global staff satisfaction survey which brought the Company a "Golden Scope" award from AXA with its results
- Developed recruitment and retention projects
- Responsible for compensation and benefits, managerial and behavioral training
- Completed two successful mergers and two acquisitions
- Developed a pension plan for all staff which received the best practice mention at a national quality organization survey
- Developed the internal communication policy and procedures, the web page
- Worked on the team for the publicity campaign, to increase the awareness for AXA brand name, bringing awareness level from 9% to 51% in one year

1998 – 1999 Human Resources Director, LC Waikiki Stores

LC Waikiki is a retail chain mainly for children's clothing with 150 stores, headquarters located in Istanbul, Turkey.

Responsible for overseeing the Human Resources and Training functions of the Headquarters and LCW stores. Developed the training materials for recruitment utilizing critical behavioral interviewing methods

- Started working on the variable remuneration program for store employees
- Prepared the annual strategic plan and budget for HR and training functions

1997 - 1998 Personnel Coordinator, Washington-Centerville Public Library

Washington-Centerville Public Library is a non-profit government organization with 90+ employees located in Centerville, Ohio.

Responsible for recruitment and selection of professional and paraprofessional staff; retention, training and development; maintaining employee files, compliance with OSHA regulations, State and Federal laws, employee relations, monthly and annual reports to the Board of Trustees; administering Workers'

Compensation and benefits; policy and procedure development; and daily supervision of the Public Services Team of 40+.

- Developed the training materials for new employee orientation and safety
- Developed the employee handbook and hr policies

1997 Regional Human Resources Manager, Manor Care Health Services

HCR Manor Care has more than 500 long-term care centers, assisted living facilities, outpatient rehabilitation clinics and home health care offices across 30 States in the USA, with 59,000 employees.

Responsible for overseeing the Human Resources functions of 9 Long-term care facilities in Ohio, Indiana and Michigan areas. Managing the day-to-day functions of the facility Human Resources Directors, by acting as a consultant on various issues such as employee relations, Workers' Compensation, Safety, recruitment and selection processes, benefits and compensation planning and administration, training, OSHA compliance, employment laws and management effectiveness. Also recruitment of management level employees, conducting annual Employee Opinion Surveys and Human Resources/Payroll Audits of the facilities.

1994 – 1997 Human Resources Director, Manor Care Health Services

Opened up Manor Care at Sycamore Glen in Miamisburg, Ohio. Responsible for recruitment and selection of line staff and department head levels of positions, retention, training and development, maintaining employee files, compliance with OSHA regulations, State and Federal laws and Long-term care regulations, employee relations and advocacy, monthly newsletter, administering Workers' Compensation and benefits, and Safety Committee Chairperson.

EDUCATION and CERTIFICATIONS

M.S. in Business and Industrial Management Counseling, Wright State University, 1994 B.A. in Guidance and Psychological Counseling, Bosphorus University, 1991

ADA Coordinator Certificate, University of Missouri IPMA-SCP Certificate SHRM-SCP Certificate

PROFESSIONAL MEMBERSHIPS

IPMA-HR Member
IPMA-HR Western Region President Elect
IPMA-HR Oregon Chapter – Director of the Board
SHRM Professional Member
Chemeketa Center for Business & Industry – Advisory Board Member

WORKSHEET FOR EXTERNAL REVIEWERS (3 Pages)				
College Name:	Chemeketa Community College	BAS Degree Title:	Leadership and Managmenet	
Reviewer Name:	Robert J. Birkenholz	Institutional or Professional Affiliation:	The Ohio State University	
Professional License or Qualification, if any:	Ph.D. Collowing specific element	Relationship to Program, if any:	None	
riease evaluate the i	onowing specific element	.S		
a) Concept and overview	Is the overall concept of tappropriate to current en academic standards? We Comment The concept of the Leadership relevant and appropriate to cur important (and currently lacking and private sectors. Program demonstrate personal and prof sectors of employment and pul	and Managment BA rent employer demand at nearly every lev graduates who are all essional leadership	as well as to accepted ead to job placement? S program is absolutely nds. Leadership is especially el in our society in the public ble to communicate and	
b) Degree Learning Outcomes	g Do the degree learning or baccalaureate degree rigo		rate appropriate	
	1.0 Think as a leader 1.1 Identify and describe a personal leadersh 1.2 Develop a strategic plan in collaboration: objectives, resources, etc.) 1.3 Demonstrate problem-solving skills/strat solution, implement solution, and evaluate results) 2.0 Act as a leader 2.1 Communicate effectively with stakeholds 2.2 Demonstrate critical thinking, learnwork, 2.3 Demonstrate ability to resove interperso; 3.0 Create opportunities for leadership 3.1 Cultivate a learning culture that promote 3.2 Apply organizational behavior principles idverse workfore.	Lowould suggest re-structuring the Program Learning Outcomes as follows: 1.0 Think as a leader 1.1 Identify and describe a personal leadership philosophy, style, characteristics, and strengths 1.2 Develop a strategic plan in collaboration with a broad range of stakeholders (including purpose, mission vision, values, goals, objectives, resources, etc.) 1.3 Demonstrate problem-solving skills/strategies (identify problem, analyze situation, review alternative solution, and evaluate results) 2.0 Act as a leader 2.1 Communicate effectively with stakeholders using appropriate channels for the situation 2.2 Demonstrate or thical thinking, learnwork, and technical information literacy skills 2.3 Demonstrate ability to resove interpersonal conflicts and organizational challenges in modern workforce environment 3.0 Create opportunities for leadership 3.1 Cultivate a learning culture that promotes effective teamwork 3.2 Apply organizational behavior principles and human resource management practices to effectively hire, edevelop, and retain a diverse workforce. 3.3 Utilize multicultural strategies that promote a respectful and inclusive culture which embraces diverse individuals and		
c) Curriculum Does the curriculum align with the program's Statement of Needs			m's Statement of Needs	
Alignment	Document? Comment Yes, the proposed progradocument.	m is aligned with	the Statement of Needs	

d) Academic Relevance and Rigor	Do the core and elective courses align with employer needs and demands? Are the upper level courses, in particular, relevant to industry? Do the upper level courses demonstrate standard academic rigor for baccalaureate degrees? Comment I am unable to respond to this criteria without reviewing the syllabus for each of the relevant courses.
e) General Education Requirements	Are the general educations requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements? Comment I am unable to respond to this criteria without reviewing the syllabus for each of the relevant courses.
f) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum? Comment I am unable to respond to this criteria without reviewing the curriculum vita for each of the relevant faculty.
g) Resources	Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities? Comment I am unable to respond to this criteria without additional information.

500	Membership and Advisory Committee	Has the program received assistance through input and feedback from an appropriately convened Advisory Committee? Has the program responded appropriately to its Advisory Committee's recommendations and/or concerns? Comment it appears that an advisory committee was convened to provide input into the development of the proposed program.
	Overall assessment and recommendations	Please summarize your overall assessment of the program. Comment Overall, the proposed Leadership and Managment BAS program is an innovative response to the real and significant shortage of leadership in the public and private sectors of our country. The
	ver Bio or Resun	proposed program will help prepare graduates with a better understanding of the importance and value of effective leadership in their personal and professional lives.
		hort bio here or attach as separate document.

Brief Resume

ROBERT J. BIRKENHOLZ

9381 White Hickory Lane Fort Myers, FL 33912 (614) 323-9903 birkenhólz.1@osu.edu

Education B.S. Agricultural Education, Iowa State University, 1976

M.S. Agricultural Education, Iowa State University, 1978 Ph.D. Agricultural Education, Iowa State University, 1982

(minor in Agricultural Economics)

Experience Vocational Agriculture Instructor, Wellsburg, IA 1976-78

Instructor, Iowa State University, 1980-82

Agribusiness Coordinator, Johnson County CC, Overland Park, KS.1982-84

Faculty Member, University of Missouri, Columbia, MO. 1984-2001 Department Chair, University of Missouri, Columbia, MO 1993-2001

Interim Associate Dean, CAFNR, University of Missouri, Columbia, MO. 1998 Faculty Fellow, Provost's Office, University of Missouri, Columbia, MO. 1999-01

Department Chair, The Ohio State University, Columbus, OH. 2002-2009

Professor, The Ohio State University, Columbus, OH. 2002-2018

Professor Emeritus, The Ohio State University, Columbus, OH. 2018-present

Board of Directors, American Association for Agricultural Education Service

Board of Directors, National Assoc. of Postsecondary Agricultural Education Numerous Search Committees for Deans, Department Chairs, and Faculty

National Organization Officers, Committee Chairs, and Members Faculty Advisor, FarmHouse Fraternity, The Ohio State University Faculty Advisor, Undergraduate and Graduate Student Organizations

Faculty Advisor, 26 doctoral graduate >100 masters students > 500 undergrads Coordinating Advisor, Leadership Studies minor, The Ohio State University

Author, Effective Adult Learning

Meritorious Service Award, OSU/CFAES Alumni Society **Awards**

Fellow, American Association for Agricultural Education

Outstanding Leadership Educator, American Association for Agricultural Educ Banquet Program Dedication, OSU/CFAES Student Recognition Banquet Distinguished Lecturer, American Association for Agricultural Education

Honorary American FFA Degree, National FFA Organization

Fellow, Food Systems Leadership Institute, USDA

WORKSHEET FOR EXTERNAL REVIEWERS (3 Pages)				
College Name:	Chemeketa Community College	BAS Degree Title:	Management and Leadership	
Reviewer Name:	Paul Disney		Association of Leadership Educators	
Professional License or Qualification, if any:	Colonel (Retired) US Army MBA Master of Strategic Studies	Relationship to Program, if any:	None	
Please evaluate the following specific elements				
a) Concept and overview b) Degree Learning Outcomes	appropriate to current emp academic standards? Will to Comment Program objectives and reconstruction baccalaureate program in the learning outcomes are broad curriculum as the program needs, especially non-tradiculum will build upon Chemeketa Willamette Workforce Part Do the degree learning out baccalaureate degree rigor Comment The degree learning outcomed degree as they focus on help	Is the overall concept of the degree program relevant and appropriate to current employer demands as well as to accepted academic standards? Will the program lead to job placement? Comment Program objectives and requirements are appropriate for an applied baccalaureate program in management and leadership. The expected learning outcomes are broad and will allow flexibility to build the curriculum as the program progresses and better understand constituent needs, especially non-traditional students. I believe the BAS program will build upon Chemeketa's community connections, to include the Willamette Workforce Partnership, to increase job placements. Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?		
c) Curriculum Alignment Does the curriculum align with the program's Statement of Nee Document? Comment A Statement of Needs document was not specifically provided, I Chemeketa did provide a detailed report from the Oregon Emplo Department Job Vacancy Survey (May 2019). The curriculum of with needs of employers identified in the Job Vacancy Survey.		cifically provided, however, n the Oregon Employment). The curriculum does align		

POLICY GUIDE: Proposals for	or

d) Academic Relevance and Rigor	Do the core and elective courses align with employer needs and demands? Are the upper level courses, in particular, relevant to industry? Do the upper level courses demonstrate standard academic rigor for baccalaureate degrees?	
	Employers in the Salem area have expressed concerns about the difficulty of finding and keeping qualified applicants, especially ones who already live in the community. A bachelor's degree offered by Chemeketa would help produce a more highly skilled local workforce. 96% of employers surveyed indicated they would definitely or maybe more likely consider an applicant with an Applied Baccalaureate degree to be more qualified/prepared for employment and/or promotion. I would recommend a stand-alone Leadership in Ethics course as opposed to threading ethics into the entire curriculum. An Ethics in Leadership course would provide more detailed focus on ethical theory, application, and the inclusion of ethics in decision making. I would also recommend a more explicit focus on developing teamwork/team leadership skills as these skills were highly prioritized by employers in recent national surveys.	
e) General	Are the general education requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?	
Education Requirements	Comment There appears to be sufficient upper division general education course offering for adult learners to meet general education requirements. There is insufficient information with which to judge the appropriateness of the breadth and depth of the general education courses without course syllabi.	
f) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?	
	Prospective faculty information was not provided. However, the administrative requirements to include advising, marketing the program, recruiting students, program revisions, and curriculum revisions will require the attention of dedicated faculty and administrators. In addition, the Applied Leadership Capstone Project may prove time consuming for faculty. Relying on non-BAS full-time faculty will necessitate clear guidance and dedicated time for participants to ensure the BAS Program succeeds.	
g) Resources	Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities?	

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Chemeketa's Business Center in downtown Salem is an excellent resource for adult learners. It is conveniently located for evening and weekend course offerings. Information on library and other student support services was not provided.

h) Membership and Advisory Committee

Has the program received assistance through input and feedback from an appropriately convened Advisory Committee? Has the program responded appropriately to its Advisory Committee's recommendations and/or concerns?

Comment

Chemeketa's faculty and administrators leveraged its strong community network of business and professional connections to form a robust Advisory Committee. They have received wide ranging advice and feedback from the committee regarding the need for the BAS program and type of curriculum. They have responded appropriately to include adding a Diversity, Equity, and Inclusion course.

i) Overall assessment and recommendations

Please summarize your overall assessment of the program.

Comment

Overall, the Bachelor of Applied Science (BAS) Degree in Management and Leadership will have a significant impact in meeting the needs of students and employers within the state of Oregon. It fills a significant gap in education service for students who have completed AAS degrees. Without this program, AAS students would need to complete a full 4 year program to attain a similar credential.

Paul Disney, Colonel (Retired) U.S. Army

956 Reagan Ave NW, Salem, Oregon 97304 | 503-798-3848 | disneyp@mail.wou.edu

Education

Master of Strategic Studies | 2002 | U.S. Army war college

master of science business administration | 1987 | boston university

BACHELOR OF SCIENCE PSYCHOLOGY | 1980 | ELIZABETHTOWN COLLEGE

Recent Higher Education Leadership Positions

faculty senate vice president | western oregon university | september 2016 - september 2018

 Served as Faculty Senate Senator for Business and Economics Division and Senator at Large for the Faculty Senate Executive Committee from 2014-2016.

assessment facilitation steering committee (AFSC) vice chair \mid western oregon university $\mid 2015$ - 2017

 Served on the Education Assessment Ad Hoc Committee prior to AFSC and attended the AAC&U General Education and Assessment conference in February 2015.

CRITICAL THINKING TEAM CHAIR | WESTERN INTERSTATE COMMISSION HIGHER EDUCATION | 2015 - 2020

Served as the chair for the WICHE Interstate Passport Critical Thinking Learning Outcome team. The WICHE Interstate
Passport is the only nationwide network of two-year and four-year non-profit colleges and universities dedicated to the
block transfer of lower-division general education attainment based on multi-state faculty-developed learning outcomes
and proficiency criteria.

STRATEGIC PLANNING FACULTY MEMBER | WESTERN OREGON UNIVERSTIY | APRIL 2016 - JANUARY 2017

· Served as the faculty representative from the Business and Economics Division on the Strategic Planning Committee.

University council faculty member | western oregon university | september 2017 - september 2019

The University Council is responsible for determining the degree to which the university is meeting its mission and is
engaged in comprehensive, ongoing, systematic assessment of its work that leads to mission fulfillment and continuous
improvement.

Experience

leadership and management adjunct professor | western oregon university | 2010 - present

 Co-developed and teach in the Organizational Leadership Master's program. Developed the BA 474 Business Leadership course and currently teach BA 361D Organizational Behavior, BA 362 Business Ethics, and BA 484D International Management.

military officer | U.S. Army | 1981 - 2010

 Achieved the rank of Colonel and served as an aviation officer in various command and staff positions at the tactical, operational and strategic levels.

9. Collaborative Plans or Unresolved Concerns.

a) Provide a summary of how College will be collaborating with other higher education providers, industry or relevant parties, relative to this program. Provide details on how collaboration serves Oregon, e.g., increases access, ensures greater equity, improves program quality or improves use of state resources relative to educating students.

The work to develop this Applied Leadership AB degree is driven by the college's commitment to increasing access to higher education, especially for members of historically marginalized groups. The college continues to be the largest provider of higher education in our region—with higher numbers and percentages of low income, non-traditional age, and equity population individuals. As the college successfully recruits and graduates these students, we see a need to assure they will be able to grow in their careers and compete for promotions. Creating an accessible, relevant path to a four-year degree with a high quality, industry guided program is central to the design of the program. Collaboration with our community partners is the most economical and effective way to reach the goal of increasing student achievement.

As detailed in section 2 of this proposal, the college has long-standing industry and agency partners who have helped craft this program and will continue to guide its development to assure quality and relevance to workforce requirements. The advisory committee members have shared numerous stories of employees who they are unable to promote to manager positions due to lack of a bachelor's degree and of employees who earn a supervisory role but then lack the leadership training and the confidence needed to succeed. Coupled with the existing racial and ethnic biases built into many hiring and promotion processes, this has led to a lack of diversity at higher management levels in both the private and public sectors in Oregon. The inability to advance in a career prevents entire families from escaping poverty with ripples through generations. Local industry and agency leaders say they see a benefit in diversifying their leadership, both as individual employers and for their industries as a whole. This Applied Leadership AB degree track seeks to leverage that employer motivation with the college's educational expertise for the benefit of our AAS graduates and the community as a whole.

Chemeketa anticipates continued collaboration with other institutions of higher education to increase pathway opportunities for students. An example of this is detailed in this letter of support from Western Oregon University. WOU is a longtime partner with Chemeketa and the leading provider of bachelor's degrees for Chemeketa transfer students. They see the Applied Leadership AB as an important option to provide to Career and Technical program AAS graduates who otherwise would not have an accessible path to a bachelor's degree. WOU and Chemeketa have already taken steps to further build upon the Applied Leadership AB with a path to a master's degree, providing even more opportunities for students who have traditionally not had access to a clear path to advanced degrees.



October 28, 2021

Higher Education Coordinating Commission 3225 25th Street SE Salem, OR 97302

Re: Chemeketa Community College's BAS Proposal

Dear Commissioners,

Chemeketa Community College's proposal to offer a Bachelor of Applied Science (BAS) in Applied Management and Leadership is an educational and career pathway built upon their Associate of Applied Science (AAS) degrees. WOU has long seen the value of applied baccalaureates programs that can better serve students that earn a non-transfer associate degree. Chemeketa Community College's proposed program is being designed to build upon solid technical skills gained in the AAS degree programs and help these students move into management and leadership level career opportunities, in support of shared workforce development goals.

Chemeketa serves as a Hispanic Serving Institution and helps diverse and underrepresented students complete their educational goals. WOU is excited to find ways to build upon this student body and help create opportunities for additional degree attainment.

WOU and Chemeketa are already having conversations and coordinating to build upon the proposed BAS by creating a direct pathway into WOU's Master of Arts in Organizational Leadership degree program. As part of this conversation, we have discussed ideas such as dual enrollment and allowing 15 credits of the BAS to apply to the master degree. In addition, WOU faculty have been involved in consulting with Chemeketa as they refine the BAS in Applied Management and Leadership curriculum.

In looking at the data for Chemeketa's AAS transfer students into WOU's programs, we do not see that this will adversely impact our enrollment. More importantly, this new degree program has the potential to better serve students in our region. In conclusion, I wholeheartedly support Chemeketa's proposal for a Bachelor of Applied Sciences in Applied Management and Leadership.





Lieuallen Administration 202 | 503-838-8271 | provost@wou.edu

Sincerely,

Rob Winningham

Provost and Vice President for Academic Affairs

Robert Winz

345 N. Monmouth Ave. Monmouth, OR 97361 Email: provost@wou.edu



b) Provide summaries of content and status of discussion if any other institution raised concerns with you about any aspect of your proposal for this program. If these issues remain unresolved, or incomplete, please include the relevant name and contact information for the other parties

University of Oregon

Chemeketa President Jessica Howard sent an email to University of Oregon:

From: Jessica Howard < jhowar96@chemeketa.edu>

Date: October 25, 2021 at 5:36:51 PM PDT

To: Provost provost@uoregon.edu>

Cc: Donna Lewelling <donna.j.lewelling@hecc.oregon.gov>, Mike Vargo <michael.vargo@chemeketa.edu>, Holly Nelson <holly.nelson@chemeketa.edu>

Subject: Applied Baccalaureate

Dear Dr. Phillips,

As you may be aware, Chemeketa Community College is following the process outlined by the Higher Education Coordinating Commission and made possible through Oregon Senate Bill 3 to propose an applied baccalaureate (AB) degree. The required Statement of Need related to this AB was submitted to the HECC at its August meeting this year.

We have heard indirectly that the University of Oregon may have some thoughts about our AB application. If there are any concerns, please let us know so that we may address them.

Best regards, Jessica Howard

--

Jessica Howard, Ph.D. | President / CEO

On Tue, Oct 26, 2021 at 8:14 AM Ron Bramhall rcb@uoregon.edu wrote: Dr. Howard

Provost Phillips asked that I respond to your inquiry below as I handle inter institutional program notices. We did not have specific concerns about your Statement of Need – we had merely raised the question to HECC as to how the universities were being notified of these proposals for comment. We are fully supportive of your proposal. Thank you for reaching out.

Best

Ron

For scheduling, please contact Carolyn Vogt at carolynv@uoregon.edu or 541-346-2831

Ron Bramhall | Associate Vice Provost for Academic Affairs

rcb@uoregon.edu | 541-346-3028

1F Johnson Hall

1258 University of Oregon | Eugene, OR 97403

From: Jessica Howard <jhowar96@chemeketa.edu>

Date: Tue, Oct 26, 2021 at 9:59 AM Subject: Re: [EXTERNAL] AB proposal To: Ron Bramhall <rcb@uoregon.edu> Cc: Provost cprovost@uoregon.edu>

Thank you for your prompt response, Ron. I am relieved that there are no concerns.

Best, Jessica

Oregon Alliance of Independent Colleges and Universities

Chemeketa president Jessica Howard received an email on October 4, 2021 from Brent Wilder, President, Oregon Alliance of Independent Colleges and Universities in response to Chemeketa's Statement of Need submitted to the state on August 3 (see email below).

Dr. Howard replied to the email and offered to meet with the three colleges referenced in Mr. Wilder's letter. Dr. Howard did not receive a reply to her offer to meet individually with the colleges, so she sent a letter responding to the general areas of concern in Mr. Wilder's original email (see letter below).

Mr. Wilder requested to meet with Chemeketa with concerns he memorialized in an email dated January 3, 2022 below. President Howard responded to those concerns on January 6 (emailed January 7), below.

Email sent to Jessica Howard on October 4, 2021

TO: Ben Cannon, Executive Director, Higher Education Coordinating Commission Jessica Howard, President, Chemeketa Community College

Karen Lynne Howard, Commission Administrator and Assistant to the Executive Director, Higher Education Coordinating Commission

FROM: Brent Wilder, President, Oregon Alliance of Independent Colleges and Universities

RE: Chemeketa Community College Statement of Need for a Bachelor of Applied Science in Applied Management and Leadership

Thank you for the opportunity to review Chemeketa Community College's Statement of Need for a Bachelor of Applied Science in Applied Management and Leadership.

To facilitate our BAS review process, The Alliance created a <u>rubric</u> based on the required elements in statute and administrative rule for a Statement of Need. The rubric allows for a maximum amount of 30 points, with the 0 to 30 spectrum correlating with "inadequate" to "excellent" reasoning on need for a program. We called on the knowledge and years of experience of our Chief Academic Officers at each of our member institutions to submit feedback using the rubric and we also provided opportunity for open-ended feedback.

Three of our member schools completed the rubric and provided feedback. The aggregate score of Chemeketa Community College's Statement of Need was 10.5 out of 30. The Alliance has concerns about insufficient documentation showing the need for another business-oriented bachelor's degree. We believe demand can be fully met through existing programs at four-year public and private colleges and universities, virtually all of which provide degrees that meet the same workforce needs. Though it could be argued that Chemeketa would offer a more cost-effective bachelor's degree for place bound communities, the actual cost factor is only addressed cursorily through the chart on Page 9 that identifies similar programs.

Further, it is unclear to us if Chemeketa Community College has the infrastructure to support the level of competency-based curriculum described in the statement of need.

Please do not hesitate to reach out to us with questions on our process and findings. As this is the first time we have utilized the rubric, we would also welcome any feedback to evolve our review process.

Be well and tak	e good care,
-----------------	--------------

Brent

Brent Wilder

President

Oregon Alliance of Independent Colleges & Universities

From: Jessica Howard < jhowar96@chemeketa.edu>

Date: Fri, Oct 8, 2021 at 9:57 AM

Subject: Re: [EXTERNAL] Chemeketa Community College Statement of Need for a Bachelor of

Applied Science in Applied Management and Leadership

To: Brent Wilder

 voicu.org>

Cc: CANNON Ben <ben.cannon@hecc.oregon.gov>, HOWARD Karen Lynne
 <karen.lynne.howard@hecc.oregon.gov>, Meg Ridenour <meg@oaicu.org>, Cindy Robert <cindy@rainmakersgovernmentstrategies.com>, Holly Nelson <holly.nelson@chemeketa.edu>, Mike Vargo <michael.vargo@chemeketa.edu>

Brent,

We appreciate the feedback. Chemeketa representatives would like to meet with the three institutions who provided the input. Is it possible to share that information so that we can address their specific concerns?

Many thanks, Jessica October 27, 2021

Brent Wilder, President
Oregon Alliance of Independent Colleges and
Universities brent@oaicu.org
15573 Bangy Rd., Suite 320
Lake Oswego, OR 97035



Dear Brent,

Thank you for your recent email regarding the Chemeketa Community College Statement of Need for a Bachelor of Applied Science in Applied Management and Leadership. We appreciate your members' willingness to work toward creating accessible pathways to degree attainment. As I mentioned in my response, we would be happy to meet with any of the Alliance colleges to discuss our plan in more detail. For now, I'll address the concerns you listed in your October 4 email, italicized below.

1. The Alliance has concerns about insufficient documentation showing the need for another business-oriented bachelor's degree.

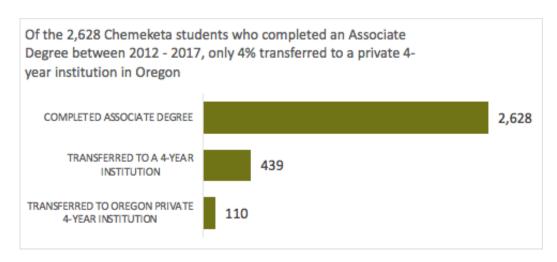
Demand for bachelor's degree in management roles among Oregon employers is addressed in pages 11 through 15 of the Statement of Need as well as the supporting documentation in pages 8 through 43 of the Statement of Need Appendix. In 2019, there were a combined 171 graduates from the Eastern Oregon University and Oregon Tech applied baccalaureate degrees related to business management. Other similar programs at Oregon State University and Portland State University (although not BAS programs) add another 797 graduates in 2019. It is important to note that these graduates are from across Oregon. In the Mid-Valley alone, there exist approximately 1,500 predicted openings annually for positions which

require a bachelor's degree in management occupations. Even in the unlikely event that every graduate of the statewide programs listed above were to apply for an opening in the Mid-Valley, there would remain 540 unfilled positions, representing a gap of 36%.

If you have specific questions related to this data, please let me know.

2. We believe demand can be fully met through existing programs at four-year public and private colleges and universities, virtually all of which provide degrees that meet the same workforce needs.

This applied baccalaureate is designed for students who have AAS degrees, the vast majority of whom are not transferring for a four-year degree. As the chart details below, over a six-year period only 110 students with AAS degrees from Chemeketa transferred to one of the Alliance schools.





Of the 110 transfers from Chemeketa to Oregon private four-year colleges over six years, 91 were Nursing students transferring to Linfield University. Of the 110 transfers over six years, only 18 identified as Hispanic, Black, Native American, Pacific Islander, or being of two or more races. The data show that there exist thousands of AAS students who have not been finding transfer pathways that meet their needs.

The Chemeketa Bachelor of Applied Science in Applied Management and Leadership program is designed for students with AAS degrees who need educational and career pathways that build upon the technical skills learned in their CTE courses. As the data show, thousands of students with AAS degrees are in the workforce now and many could advance in their career with an accessible applied baccalaureate degree designed for the requirements of their industry.

1. Though it could be argued that Chemeketa would offer a more cost-effective bachelor's degree for place bound communities, the actual cost factor is only addressed cursorily through the chart on Page 9 that identifies similar programs.

Financial accessibility is a well-known barrier for students seeking a bachelor's degree; thus, it is vital to address the need for accessible pathways such as the applied baccalaureate.

1. Further, it is unclear to us if Chemeketa Community College has the infrastructure to support the level of competency-based curriculum described in the statement of need.

As outlined in the HECC application process (<u>link</u>), infrastructure will be addressed in the Section C-Program Proposal of our forthcoming submission to the HECC. We plan to detail our extensive physical and human resource assets which will support students in this program.

Thank you for your feedback on this proposal. Please contact me if you have any further questions. We look forward to more discussion with the Alliance on developing pathways for our students.

Sincerely,

Jessica Howard,

Ph.D.

President/CEO

Cc via email:

Ben Cannon, Executive Director, HECC, ben.cannon@hecc.oregon.gov

Karen Lynne Howard, Commission Administrator and Assistant to the Executive Director,

HECC, karen.lynne.howard@hecc.oregon.gov

AB@HECC.oregon.gov

Donna Lewelling, Director, Office of Community Colleges and Workforce Development, HECC, donna.j.lewelling@hecc.oregon.gov

Subject: [EXTERNAL] Re: Response to Alliance Concerns

To: Jessica Howard <jhowar96@chemeketa.edu>, LEWELLING Donna

<donna.j.lewelling@hecc.oregon.gov>

Cc: Holly Nelson keta.edu, Michael Vargo <a href="mail

Cindy Robert <cindy@rainmakersgovernmentstrategies.com>

Jessica and Donna,

Thank you for your time this morning. I want to follow up and share feedback to the letter dated October 27 that Cindy alluded to during this morning's meeting.

- The issue isn't whether or not there are open jobs in a field but whether there are insufficient Oregon university seats to allow students to earn degrees that prepare them for those open jobs. There remains great capacity within existing Oregon university 4-year business and management programs, and Chemeketa's proposal has not argued otherwise. (It should also be noted that many business and management positions can be and are filled by people holding liberal arts degrees; "leadership" preparation is an aspect of many degrees other than ones with management in the title.)
- Chemeketa documented no structural barrier to students on this path transferring to existing 4-year business and management programs; most if not all Oregon 4-year institutions would welcome Chemeketa AAS students and support an efficient pathway for them complete their four-year degrees; that students aren't taking those pathways is not evidence of an absence of pathways. If unidentified barriers exist, such as a lack of sufficient guidance to help Chemeketa students see the existing pathways, that is the issue to be addressed. Adding additional programs when under enrolled programs already exist would be a short-sighted solution for the Oregon higher education system.
- At many Oregon 4-year institutions, financial aid likely closes or nearly closes the financial gap for students from incomes that warrant aid. But the fundamental response to this question is that the State of Oregon would act at the peril of its own system to make its own rule of setting tuition differently at 2-year and 4-year colleges the basis for expanding 4-year degrees at CCs; if that is to be the basis, the solution for Oregon would be to offer all 4-year degrees at CCs at CC tuition rates (and close those degrees at Oregon 4-years) or, more efficiently, to subsidize existing 4-year degrees at the same subsidy rate provided to CCs. In short, the differential costs of CCs and 4-years is not a logical or viable basis for implementing 4-year degrees at community colleges.

Brent Wilder

President

Oregon Alliance of Independent Colleges & Universities



January 6, 2022

Brent Wilder, President Oregon Alliance of Independent Colleges and Universities brent@oaicu.org 15573 Bangy Rd., Suite 320 Lake Oswego, OR 97035

Dear Brent,

Thank you for your recent email regarding the Chemeketa Community College plan for an Applied Baccalaureate in Applied Management and Leadership we discussed during our January 3, 2022 meeting. We appreciate your members' willingness to work toward creating accessible pathways to degree attainment and realize it will be a continuing conversation. For now, I'll address the concerns you listed in your email, italicized below.

1. The issue isn't whether or not there are open jobs in a field but whether there are insufficient Oregon university seats to allow students to earn degrees that prepare them for those open jobs. There remains great capacity within existing Oregon university 4-year business and management programs, and Chemeketa's proposal has not argued otherwise. (It should also be noted that many business and management positions can be and are filled by people holding liberal arts degrees; "leadership" preparation is an aspect of many degrees other than ones with management in the title.)

There are a multitude of issues to consider when it comes to pathways to a bachelor's degree for community college students, in particular when it comes to the applied baccalaureate degree. We agree that there are students who are well-served by the available seats in existing programs and encourage further partnerships and development of those options. There are also fields in which a liberal arts degree makes sense for those seeking managerial positions.

The Applied Baccalaureate in Leadership and Management at Chemeketa will create a new avenue for associate of applied science graduates who are not being served by existing pathways, which the provided data shows is a significant number. This degree is designed as an equitable option for our Career and Technical Education graduates, and most specifically for those working in sectors in which technical skills and knowledge are required. As articulated by our advisory committee made up of industry partners, our community needs a degree option that will allow employers to promote their existing skilled workforce into supervisory positions.

This degree is specifically designed to serve the diverse students who live and work in Chemeketa's district, many of whom represent populations who have historically had the least access to higher

education. At all levels of the college we look forward to the addition of the applied baccalaureate to our offerings and the potential this has to contribute to even more students seeking bachelor's degrees, which we anticipate leading to more, rather than fewer, Chemeketa graduates attending Alliance institutions.

2. Chemeketa documented no structural barrier to students on this path transferring to existing 4-year business and management programs; most if not all Oregon 4-year institutions would welcome Chemeketa AAS students and support an efficient pathway for them complete their four-year degrees; that students aren't taking those pathways is not evidence of an absence of pathways. If unidentified barriers exist, such as a lack of sufficient guidance to help Chemeketa students see the existing pathways, that is the issue to be addressed. Adding additional programs when under enrolled programs already exist would be a short-sighted solution for the Oregon higher education system.

The tradition of the community college is to serve those students who face the most significant barriers to higher education and degree attainment. There are numerous structural barriers identified in the research and that we see in our interactions with students every day. These barriers are coupled with a variety of individual challenges for our Career and Technical Education students. These students are more likely to be first-generation-in-college students, working full-time, parenting, place-bound, and People of Color than their university counterparts. These students have often faced institutionalized racism and marginalization throughout their educational journey.

The proposed Applied Baccalaureate in Leadership and Management degree is designed to address these barriers in real and meaningful ways. However, the degree goes far beyond this in meeting the needs of our AAS graduates. This degree is specifically built to stack seamlessly upon the credentials these students have earned in the community college. Further, it fully utilizes their industry and life experiences and prepares them for leadership roles in their specific sector.

We recognize that the applied baccalaureate degree will not be the right degree for all of our students. In fact, it will not be the appropriate pathway for the majority of the college's graduates. As we develop this program to meet the needs of a specific population in our district, we also commit to working with you to continue to address the full range of structural barriers that may keep those students from attending Alliance Schools.

3. At many Oregon 4-year institutions, financial aid likely closes or nearly closes the financial gap for students from incomes that warrant aid. But the fundamental response to this question is that the State of Oregon would act at the peril of its own system to make its own rule of setting tuition differently at 2-year and 4-year colleges the basis for expanding 4-year degrees at CCs; if that is to be the basis, the solution for Oregon would be to offer all 4-year degrees at CCs at CC tuition rates (and close those degrees at Oregon 4-years) or, more efficiently, to subsidize existing 4-year degrees at the same subsidy rate provided to CCs. In short, the differential costs of CCs and 4-years is not a logical or viable basis for implementing 4-year degrees at community colleges.

While this concern speaks to the broader concept of the applied baccalaureate being offered in the State of Oregon, and may be best addressed by the HECC, we can address it from the perspective of our college and the constituents in our district. We believe that the community college applied baccalaureate degree has been added to the repertoire of options for students to, as stated in the Higher Education Coordinating Committee's Case for Equity, "Expand postsecondary education and training opportunity in order to foster the understandings, habits, and skills that enable Oregonians and their communities to flourish in a changing society and evolving workplace." As such, we would be remiss to ignore the needs of our

graduates and industry partners, and ultimately, our community by not pursuing this opportunity on their behalf.

After extensive research, input from our advisory committees, and targeted work with key partners, it is evident that there is a need for this degree in our district. Perhaps one of the strongest cases for this has been demonstrated by the partnership and support that has come from our primary transfer college, Western Oregon University. We understand that with all change comes uncertainty. However, as the Case for Equity goes on to explain, "For far too long, longstanding systemic barriers built into government, institution, and education systems have failed to sufficiently support communities of color, students experiencing poverty, and other underserved communities in accessing, completing, and benefitting from postsecondary education and training."

We hope that these responses help further the Alliance's understanding of Chemeketa's goals for the Applied Baccalaureate in Leadership and Management and we sincerely look forward to continued partnership with you and your member institutions.

Sincerely,

Jessica Howard, Ph.D., CEO/President

Cc via email:

Honard

Ben Cannon, Executive Director, HECC, ben.cannon@hecc.oregon.gov

Karen Lynne Howard, Commission Administrator and Assistant to the Executive Director, HECC, karen.lynne.howard@hecc.oregon.gov

AB@HECC.oregon.gov

Donna Lewelling, Director, Office of Community Colleges and Workforce Development, HECC, donna.j.lewelling@hecc.oregon.gov

Attach Accreditation report here



HIGHER EDUCATION COORDINATING COMMISSION August 12, 2021 Docket Item #X.X

Docket Item:

Community College Bachelor of Applied Science (BAS) Statement of Need: Chemeketa Community College, has submitted the Statement of Need for Applied Management and Leadership.

Summary:

Chemeketa Community College proposes a new Bachelor of Applied Science (BAS) in Applied Management and Leadership. Higher Education Coordinating Commission (HECC) staff completed a preliminary review of the proposed statement of need. After analysis, HECC staff recommends this program move into the required 90-day waiting period.

Overview of Submission Process:

The proposal process has been created as a two-step submission process, with a minimum ninety-day period between the first submitted document (the "Statement of Need") and the final document (the "Program Proposal"). This period allows parties across the region and state to learn of the program under consideration and explore collaborative opportunities. The waiting period is intended particularly to enable Oregon's higher education institutions and community partners to consider ways to improve access to all students - particularly with a lens on improving attention to equity. Finally, it offers colleges time to discuss and resolve any concerns across institutions. Such collaboration serves employers more effectively, reduces costs to students, and leads to more innovative academic programming. HECC staff are available and willing to convene or facilitate discussion if requested.

At the end of the ninety-day waiting period, colleges may submit the complete program proposal for approval.

Additional information about the Applied Baccalaureate Process maybe be found here:

https://www.oregon.gov/highered/institutions-programs/ccwd/Documents/FULL_AB_Document_FINAL-10-14-20.pdf

Staff Recommendation:

The HECC recommends the adoption of the following resolution:

RESOLVED, that the Higher Education Coordinating Commission approves the following: The Chemeketa Community College Bachelor of Applied Science (BASO) in Applied Management and Leadership move into the required 90-day waiting period of the submission process.

From: <u>Jessica Howard</u>
To: <u>HECC AB Degrees</u>

Cc: Gaelen McAllister; Holly Nelson; Julie Deuchars

Subject: CHEM_AB_Leadership_Management.

Date: Friday, June 25, 2021 2:26:26 PM

Attachments: CHEM AB Leadership Management Statement of Need.pdf

CHEM AB Leadership Management Attachments.pdf

Dear Sir/Madam:

Attached is Chemeketa Community College's Statement of Need and supporting documentation for its application to offer an Applied Baccalaureate Degree in Applied Management and Leadership. The Chemeketa Community College Board approved a resolution in support of this application on June 23, 2021. We look forward to working with you to advance this project to increase educational opportunities for our community.

Please let me know if you need anything further from Chemeketa in relation to the submission of the college's statement of need for this degree.

Regards, Jessica Howard

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Jessica Howard, Ph.D. | President / CEO Chemeketa Community College | jessica.howard@chemeketa.edu | 503.399.6591 | @preschemeketa | she/her/hers





COVER PAGE

Chemeketa Community College Applied Management and Leadership

Please accept the attached Statement of Need and supporting documentation for our application to offer an Applied Baccalaureate Degree in Applied Management and Leadership at Chemeketa Community College. The Chemeketa Community College Board approved a resolution in support of this application on June 23, 2021. We look forward to working with you to advance this project to increase educational opportunities for our community.

Jessica Howard, President, Chemeketa Community College jessica.howard@chemeketa.edu

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Documents Attached:

Statement of Need Attachments:

Letters of Community Support Economic Data AAS degree enrollment CTE Program Brochure Program review Schedule

- 1. Relationship to institutional mission and goals, and Oregon's educational goals.
- a. Describe how this program serves Oregon's residents to obtain a bachelor's degree that provides technical/professional knowledge and skills required for specific career positions with Oregon's local, regional or statewide employers.
- How does this program serve Oregon's education diversity and equity goals?

Chemeketa Community College is proposing to offer a Bachelor of Applied Science (BAS) Degree in Applied Leadership and Management. The new degree is designed to remove the significant barriers students from equity populations in our community face in transferring and completing a bachelor's degree. Bachelor's degrees will be increasingly required by employers in the next decade; creating a more accessible BAS option will allow a large group of students to attain leadership positions and make economic gains (see data beginning on page 11). The BAS is a targeted option for the hundreds of students who complete a two-year degree and enter our local workforce, but do not go on to achieve a four-year degree (see data beginning on page 3). This degree is differentiated from other bachelor's degree programs statewide in that students enter sector-specific cohorts during the second year and engage in project and work-based learning opportunities that focus on the application of their learning in their specific industry (see comparison chart beginning on page 10).

Chemeketa is a regionally and nationally accredited college with an accomplished and committed faculty and staff who serve nearly 15,000 students annually. With over 30% of the students identifying as Latinx, the college is designated as a Hispanic Serving Institution. Chemeketa offers transfer degrees, career technical training programs, academic development education for youth and adults, as well as customized job skills and community education classes.

The proposed BAS in Applied Leadership and Management will build upon Chemeketa's current Associate of Applied Science (AAS) degrees and provide a seamless and accessible bachelor's degree option where one does not currently exist. Significantly, the program will provide customized upper-level courses geared toward the needs of students from a variety of career technical programs as well as regional employers. The program will be designed to develop management skills sought by employers in the primary sectors of the local economy. Employers have expressed concerns about the difficulty of finding and keeping qualified applicants, especially ones who already live in the community.

Since 2010, Chemeketa has awarded 1643 AAS degrees in key industry areas that would be served by this degree. These include: Automotive Technology, Building Inspection, Criminal Justice, Fire Protection Technology, Health Services Management, Hospitality and Tourism Management, Addiction Studies, Manufacturing, and Welding. The proposed BAS in Applied Leadership and Management will serve these students, many of whom remain in our community,

raising their families and working for local employers. It should be noted here that the aforementioned number of graduates and list of degrees does not include all AAS graduates or represent a comprehensive list of degrees offered at Chemeketa. This is because we recognize that there are university programs currently in place that meet the learning needs of some students and provide viable transfer options for AAS graduates from some programs.

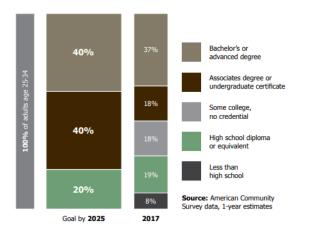
A bachelor's degree offered by Chemeketa would help produce a highly skilled local workforce. In a recent survey, 96% of employers indicated they would either definitely or more likely consider an applicant with an applied baccalaureate degree to be more qualified for employment or promotion.

The BAS Degree in Applied Management and Leadership will meet higher education needs of place-bound and under-represented individuals within the Chemeketa service district. Chemeketa is a US Department of Education designated Hispanic Serving Institution with enrollment of over 30% Latinx students. Hispanic and other historically under-represented students among first-generation students at Chemeketa do not transfer at the same rate as Asian and White students. According to the latest Chemeketa data, only 26% of first-time, full-time students from historically under-represented groups (HUGs) transferred within 150% of normal time to completion. In contrast, 44% of Chemeketa Asian and White students transferred within the same time period.

Chemeketa will administer and deliver the program to meet the needs of working adults. Courses will primarily be offered in the hybrid modality, with face-to-face class times in the evening. The college will also explore opportunities for offering the degree at Chemeketa locations across the multi-county district, granting credit for prior learning, and giving students the ability to accelerate through courses upon demonstrating mastery of learning outcomes.

The Chemeketa service area faces a large gap in its progress toward meeting Oregon's

OREGON AIMS TO INCREASE ALL LEVELS OF EDUCATION BY 2025

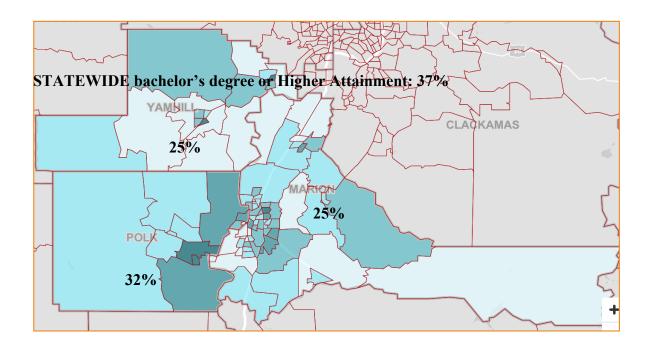


educational goal of 40-40-20. Oregon has committed to addressing the skills and education gap through its 40-40-20 initiative. The current gap between the goal of 40% and actual bachelor's or higher degree attainment is 3 percentage points statewide.

Although the statewide gap in educational attainment is 3%, in Marion and Yamhill counties only 25% of adults have bachelor's degrees or higher, a gap of 15 points. Polk county's rate of bachelor's attainment is

higher, at 32%, however it is still 8 percentage points lower than the state goal.

All three counties that make up the majority of Chemeketa's service district have a lower percentage of adults with bachelor's degrees than the statewide average of 37% and the Oregon target of 40%. (American Community Survey, 2019)



The Chemeketa service area includes multiple neighborhoods with even lower rates of degree attainment. For example, the Hayesville and Four Corners neighborhoods surrounding the Chemeketa campus in Salem have a bachelor's degree attainment rate of only 15% and 10% respectively. In Marion, Polk, and Yamhill counties, 265,175 adults over 25 have less than a bachelor's degree, with 133,091 adults having an associate degree or some college but no bachelor's degree.

Although many students from Chemeketa complete an associate degree and transfer on to a four-year university, a large number of students do not. These students who do not complete a bachelor's degree are more likely to be members of the equity populations. As the HECC's recent presentation of research, Framework for Progress 2021-23 shows in the slide below, this creates an unequally distributed lifelong economic impact on the individual student and on the community in which they live.

The Benefits of Higher Education are Inequitably Distributed Percentage of individuals within a demographic group with each credential

Educational attainment	U.S. Annual earnings	White	Underrepresented Populations (Black, Hispanic, Native American, and Native Hawaiian combined)
Graduate degree	\$83,372	14% _]	7% ך
Bachelor's degree	\$64,896	23% - 5	13% -38%
Associate degree	\$46,124	19%	18%
Some college, no degree	\$43,316	16%	16%
High school diploma	\$38,792	22%	25%
Less than a high school diploma	\$30,784	7%	22%

Note: Data are for persons age 25 and over. Earnings are for full-time wage and salary workers, 2019. Source: Current Population Survey, U.S. Department of Labor, U.S. Bureau of Labor Statistics.



The graphic below displays the number of Chemeketa students who earned an associate degree over a three-year time period (2012-2015), how many of those students transferred to a 4-year institution, and how many persist to complete their bachelor's degree.



The table below displays all students who earned a certificate, associate degree, or Associate of Arts Oregon Transfer (AAOT) Degree at Chemeketa between the years 2012-13, 2013-14, 2014-15 and transferred to a 4-year institution within 2 years. Fewer students with an associate of applied science degree transfer (27%) than students with an AAOT Degree (63%). However, only a very small percentage of students with a certificate or less than a two-year degree transfer to a 4-year institution within 2 years (7%). This makes sense given the difference between the AAOT (designed for transfer students) and an AAS degree (designed for direct entry into the workforce).

	AAOT Completers			Associate Degree Completers			Certificate Completers		
	# Completers	# Transfers	% of Completers	# Completers	# Transfers	% of Completers	# Completers	# Transfers	% of Completers
Total:	1,974	1,242	63%	2,263	617	27%	1,208	86	7%
Gender	·	,	,		,		,	,	
Female	1,186	728	61%	1,275	374	29%	810	58	7%
Male	781	512	66%	982	243	25%	397	28	7%
Age @ Grad	luation		,			,			
18-20	593	383	65%	282	106	38%	115	4	3%
21-25	696	419	60%	657	170	26%	264	24	9%
26+	683	438	64%	1,324	341	26%	829	58	7%
Race/Ethnic	ity								
American Indian	23	12	52%	41	9	22%	22	2	9%
Asian	38	27	71%	35	8	23%	22	0	
Black	21	14	67%	20	9	45%	4	0	
Hawaiian	14	9	64%	9	4	44%	5	0	
Hispanic	353	219	62%	314	107	34%	156	10	6%
White	1,289	816	63%	1,577	405	26%	828	63	8%
2 or More Races	70	48	69%	88	26	30%	42	1	2%
Unknown	166	97	58%	179	49	27%	129	10	8%
Socio-Econ	omic Status								
Pell	827	543	66%	930	241	26%	567	39	7%

Many of the students who do transfer do not complete their degree. The table below displays all students who earned a certificate, associate degree, or AAOT Degree at Chemeketa between the years 2012-13, 2013-14, 2014-15 and transferred to a 4-year institution and completed a bachelor's degree within 6 years.

Associate of applied science degrees are not intended to transfer. Many of the credits earned in these degrees do not transfer, creating a barrier to bachelor's degree completion at the university. Older students have lower rates of transfer and degree completion beyond Chemeketa, indicating the increased barriers a change in college location creates for the working and often parenting adult. Although 17% of the students in the initial cohort did go on to complete the bachelor's degree, demonstrating a high degree of resilience, we assert that the completion rate would be significantly higher if the bachelor's degree was more easily accessible and designed to utilize all of the credit earned at the associate degree level. This claim is supported in the outcome reports from other states with the applied baccalaureate degree completion.

Completers from Academic Years:2012-13; 2013-14; 2014-15 Who Transferred to 4-Year Institution & Completed a bachelor's degree

	AAOT Completers				Associate Degree Completers			Certificate Completers		
	# Transfers	# 4-Yr Completers	% of Transfers	# Transfers	# 4-Yr Completers	% of Transfers	# Transfers	# 4-Yr Completers	% of Transfers	
Total:	1,242	902	73%	617	394	64%	86	55	64%	
Gender										
Female	728	553	76%	374	265	71%	58	38	66%	
Male	512	349	68%	243	129	53%	28	17	61%	
Age @ Gra	duation									
18-20	383	325	85%	106	80	75%	4	2	50%	
21-25	419	309	74%	170	114	67%	24	17	71%	
26+	438	266	61%	341	200	59%	58	36	62%	
Race/Ethni	city									
American Indian	12	7	58%	9	5	56%	2	1	50%	
Asian	27	24	89%	8	6	75%	0	0		
Black	14	8	57%	9	5	56%	0	0		
Hawaiian	9	5	56%	4	1	25%	0	0		
Hispanic	219	156	71%	107	72	67%	10	5	50%	
White	816	595	73%	405	260	64%	63	40	63%	
2or More Races	48	32	67%	26	13	50%	1	1	100%	
Unknown	97	75	77%	49	32	65%	10	8	80%	
Socio-Econ	omic Status									
Awarded Pell	543	366	67%	241	135	56%	39	21	54%	

The Oregon Business Council, through its Oregon Learns initiative, identifies the need for postsecondary credentials and addresses the skills and education gap in order to meet the demands for workforce and economic development. https://oregonlearns.org/

Students who enroll in community college applied baccalaureate programs are typically older, have higher financial need and are more likely to be members of BIPOC populations. They are also more likely to complete a bachelor's degree than students who transfer to university programs. A 2020 study of Applied Baccalaureate Business programs in Washington state community colleges, "The Community College Baccalaureate in Washington: Who Enrolls?" reported a BAS degree completion rate of 65%, despite an older and more diverse student population. The enrollment data showed the Business BS program has significantly larger numbers of students who are Latinx as well as receiving need-based financial aid than the students in other instructional programs. In the total data file of nearly 8,000 enrollees, 57% identified as female, 58% as White, 11% as Asian, 6% as African American, 1% as Alaska Natives or Native American, 1% as Hawaiian or Pacific Islander, 9% as Multiracial, 3% as "other," and 11% as Latinx. The average age of students at entry into a BAS program was 32 years old and 7% are veterans. (Bragg, 2019)

2. Maximizes use of state resources and achievement of state educational goals, while avoiding unnecessary duplication

a. Identify similar programs at associate and baccalaureate levels offered by other education institutions in the region and state and describe meaningful points of similarity and difference between those programs and your proposal.

IHE	Description	# of Graduates 2019	Points of Similarity and Difference
Corban	Degree completion option for local students Offers credit for prior learning.	59	Difference: This program does not specifically serve the AAS completer. It is designed to serve a student who has completed some requirements at another 4-year college but did not complete. This program is located at a private, religiously affiliated institution. Cost may be a barrier depending on potential aid for student. https://www.corban.edu/academics/majors-programs/business-administration/leadership-management/
EOU	Offered online in combo with Salem. Serves any AAS https://online.eou.edu/programs/bas-in-business/	161	Similar: This does serve the AAS completer. Difference: Requires change of institution and significant online learning.
Linfield	Offer continuity ed/degree completion with some flexibility <a ?utm_source='google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_source=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=google&utm_dougled=googl</td' href="https://www.linfield.edu/programs/management/?utm_source=google&utm_medium=ppc&utm_campaign=oce2020search&gclid=" https:="" management="" programs="" www.linfield.edu=""><td>27</td><td>Difference: This program does not specifically serve the AAS completer. It is designed to serve a student who has completed some requirements at another 4-year college but did not complete. Commuting or relocation costs create barrier. Another difference is this is a private institution. Cost may be a barrier depending on potential aid for student.</td>	27	Difference: This program does not specifically serve the AAS completer. It is designed to serve a student who has completed some requirements at another 4-year college but did not complete. Commuting or relocation costs create barrier. Another difference is this is a private institution. Cost may be a barrier depending on potential aid for student.
OSU	Committed to 2+2 transfer with Chemeketa Management Program. Committed to Associate of Science transfer degree in	500	Difference: This option does not serve other AAS degrees. This is a predetermined Associate of Science transfer program.

	Horticulture.		
Oregon Tech	Official BAS. online and Wilsonville. Currently Chemeketa is committed to an articulation agreement for transfer in Electronics Engineering Technology. https://www.oit.edu/academics/degrees/technology-management	10	Similar: This program does serve the AAS completer. Difference: Commuting distance is 30-50 miles for most of the service district.
PSU	Program in management. https://www.pdx.edu/business/academics/pr ograms/undergraduate/management-and- leadership	297	Difference: This program does not specifically serve the AAS completer. Commuting distance of 40 to 60 miles for most of the service district.
WOU	Applied Baccalaureate Liberal Studies (Salem), Psychology, Information Systems	NA	Similar: This program is designed to serve the AAS completer. Difference: Does not meet all service district student and industry needs related to sector specific leadership and management. http://www.wou.edu/provost/ab-liberal-studies/

- b. Describe how your institution will collaborate with other colleges, universities, industry, or community organizations:
- to minimize costs to students and maximize effective use of state resources.
- to enrich teaching & learning, and
- to facilitate students' preparation to enter and succeed in post-graduation employment?

Chemeketa can build on existing relationships with Oregon Tech, Eastern Oregon University and Oregon State University where articulation agreements are in place and/or where there are shared resources in specific program areas. Guided pathways at Chemeketa will serve as the foundation for design of the BAS in Applied Leadership and Management and is consistent with academic programming at other Oregon community colleges. With Guided Pathways, coursework in the first two years of study is explicitly mapped out to facilitate student preparation at the collegiate level for continuation to the 4-year level.

Collaboration with Willamette Workforce Partnership is already in place with shared workforce development goals and staff coordination. Job Corps is also an active partner with campus-based services integrated into all CTE programs. The Chemeketa Cooperative Work Experience department will support internships and other work-based learning.

- 3. Employers in relevant community have substantive demand for graduates with baccalaureate level degree and specific competencies expected for students to achieve in the program.
- a. Demonstrate that employer demand exceeds regional supply of graduates with bachelor's degrees in the employer-desired field of study.

According to the Oregon Employment division, over the next decade the Mid-Willamette Valley is projected to have a large number of jobs that require a bachelor's degree. The chart below shows the top 10 occupations that require at least a bachelor's degree for entry with highest projected growth in the Mid Valley and with over 500 projected total openings. Of the 10 broad occupation categories, Management, Business, and Financial is projected to have the 4th highest growth and 5th highest number of total openings by 2029.

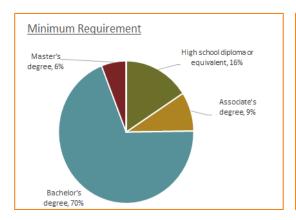
SOC-2 Occupation	2019 Employment	2029 Employment	Total Openings	% Growth
13 Management Analysts	2721	3471	3666	28%
15 Software Developers, Applications	936	1150	949	23%
13 Market Research Analysts and Marketing Specialists	389	472	523	21%
11 Financial Managers	870	1041	908	20%
11 Medical and Health Services Managers	620	721	632	16%
13 Cost Estimators	489	562	592	15%
29 Registered Nurses	4615	5303	3336	15%
21 Child, Family, and School Social Workers	555	626	647	13%
13 Training and Development Specialists	637	713	800	12%
25 Secondary School Teachers, Except Special and Career/Technical	1751	1956	1503	12%

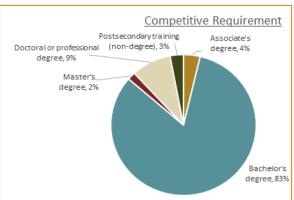
According to the Oregon Employment Department (qualityinfo.org) management occupations requiring a bachelor's degree are expected to increase by an average of 11% in the next decade in the Mid-Willamette Valley region. Over 40,000 job openings are projected to be available.

Standard Occupational Classification Title	Percent Change between 2019 & 2029	Total Openings
Management, Business, and Financial	11%	40,068
Emergency Management Directors	6.7%	14
Managers, All Other	7.2%	866
Architectural and Engineering Managers	8.1%	154
Sales Managers	8.7%	643
Administrative Services Managers	8.9%	734
Industrial Production Managers	9.1%	376
Social and Community Service Managers	9.1%	460
Computer and Information Systems Managers	9.5%	240
General and Operations Managers	10.8%	4,260
Natural Sciences Managers	11.0%	113
Purchasing Managers	11.8%	85
Human Resources Managers	12.8%	250
Marketing Managers	13.1%	247
Medical and Health Services Managers	16.3%	632
Financial Managers	19.7%	908
Other Management Occupations	8.8%	6,753
Advertising, Marketing, Promotions, PR, Sales Managers	9.6%	978
Top Executives	9.7%	4,450
Management Occupations	9.9%	15,043
Operations Specialties Managers	12.9%	2,862

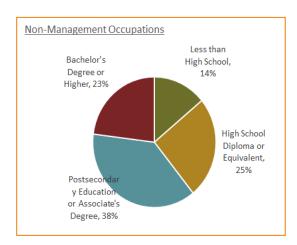
Within the management occupations, most occupations include a bachelor's degree or higher as a minimum requirement. Even more require a bachelor's degree or higher to be competitive, despite a lower minimum qualification.

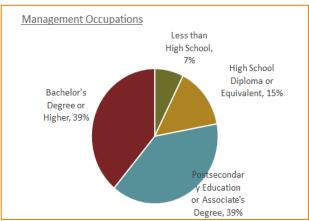
The current workforce does not have the training required to fulfill these requirements for management positions. Employer demand for bachelor's degrees and higher qualifications is over double the current rate of degree attainment in the local population. Within management occupations, most have a bachelor's degree or higher as a minimum requirement. Even more require a bachelor's degree or higher to be competitive. As the charts below show, 85% of the jobs require a bachelor's degree or higher to be competitive, yet only 26% of the combined workforce in Yamhill, Marion and Polk counties has a bachelor's degree or higher. Even when distinguishing between training in different occupational fields, there is still a gap between what is required to be competitive and the attainment of the current workforce.



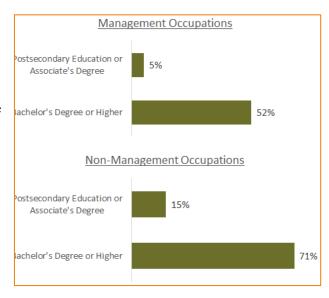


Even when distinguishing between training in different occupational fields, there is still a 46-percentage point gap between what is required to be competitive and the degree attainment of the current workforce.





Wage Difference: The mismatch between workers' educational attainment and employers' requirements prevents local worker wage growth, as the average wages increase significantly for bachelor's degree or higher attainment. As the chart to the right shows, attaining a bachelor's degree increases wages by 52-71% compared to postsecondary or associate degree attainment wage gain of 5-15%. This compounds the economic barriers for the equity populations who have lower bachelor's degree attainment rates.



The relationship between the number of graduates in similar programs and the number of job openings requiring relevant skills and competencies (at baccalaureate level) across local and regional area

There were a combined 171 graduates in 2019 from the Eastern Oregon University and Oregon Tech applied baccalaureate degrees. Other similar programs at Oregon State University and Portland State University (although not BAS programs) add another 797 graduates in 2019. It is important to note that these graduates are from across Oregon. There are approximately 1500 predicted openings annually in the Mid Valley for positions which require a bachelor's degree in management occupations. The current gap for graduates preparing to enter the workforce with this level of education and preparation is about 540 per year or 36%.

These key findings from a recent Oregon Employment Department Job Vacancy Survey (May 2019) support the need for the Applied Leadership and Management degree at Chemeketa:

- At any given time in 2018, Oregon's private employers had 58,000 job vacancies. They reported difficulty filling 33,000 (or 57%) of those job vacancies.
- In a nearly decade-long stretch of annual job growth, and two years of Oregon's unemployment rate at or near its record low, a lack of applicants has been the greatest challenge businesses face in filling job vacancies.
- Two-thirds (67%) of difficult-to-fill job vacancies required previous work experience, while closer to one-third (38%) of job openings filled without difficulty required previous experience.
- Job vacancies requiring education beyond high school offered higher starting wages on average and were also more likely to require previous experience.
- Vacancies with higher education requirements, more previous work experience requirements, or a combination of both ten to offer higher wages and tend to be more difficult job openings for employers to fill.

• While current economic conditions create hiring challenges, employers may be able to compete for labor by raising wages, enhancing employment benefits, increasing their recruitment intensity, lowering experience requirements, or partnering with education or training entities to train the available labor force for needed skills.

Insights on industry trends from secondary sources which may include industry data, trade association data, or similar data reports, that help substantiate the need for this program's specific degree offering

Employers report the growing importance of leadership as an employee attribute. According to recent national survey results, individuals with strong leadership skills are better positioned to gain and maintain employment. Additionally, those with that skill set are considered valuable to company success. https://www.naceweb.org/career-development/trends-and-predictions/joboutlook-2016-attributes-employers-want-to-see-on-new-college-graduates-resumes/

Employers in multiple industry sectors are focusing on leadership development as a priority for incumbent workers. https://trainingmag.com/trgmag-article/2018-leadership-development-survey-are-your-next-gen-leaders-track/

With the onset of the global pandemic in early 2020 it rapidly became apparent that impacts of recession-like conditions disproportionately affect lower skilled and less-educated required occupations. Further, those with more education were more likely to maintain employment. https://www.qualityinfo.org/covid-19

Qualitative data substantiating local support

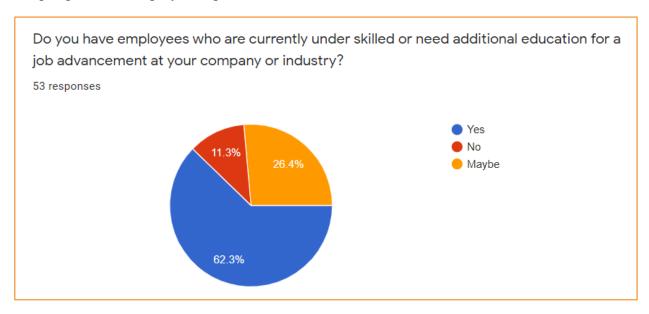
Letters of support are included in the attachments, including letters from SEDCOR, Salem Keizer Public Schools, Family Building Blocks, Willamette Workforce Partnership, Salem Chamber of Commerce, and Rich Duncan Construction.

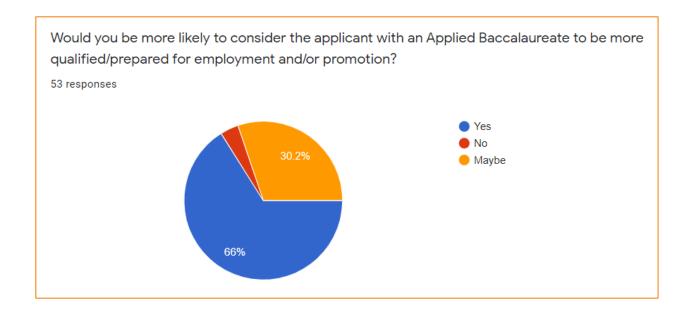
Level of industry interest in Applied Baccalaureate in Applied Leadership and Management

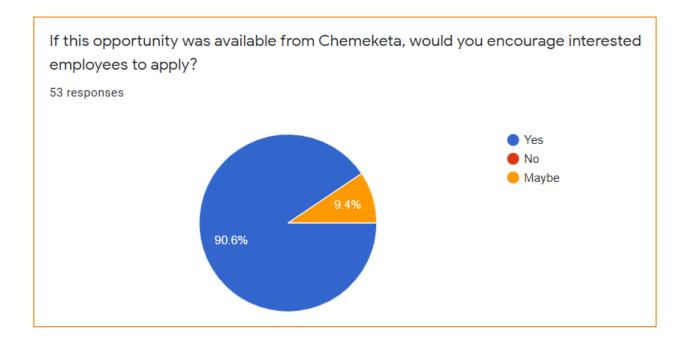
To gauge local industry interest, Chemeketa surveyed members of the CTE advisory boards in June of 2021. The respondents represented 12 different industries.

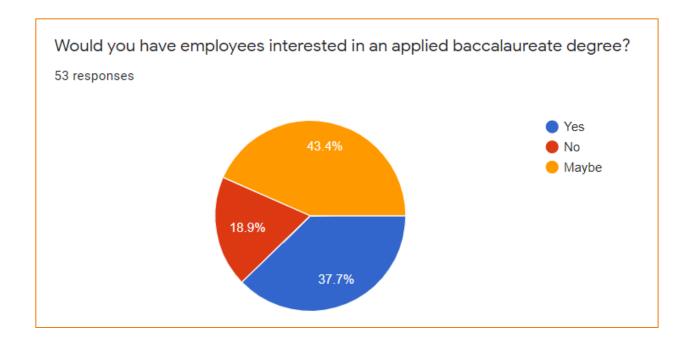
Please select the industry that most closely matches matches your work	Response Count by Industry	Potential Students by Industry
Construction and Extraction	4	5
Farming, Fishing, and Forestry	1	5
Health Care	24	47
Installation, Maintenance, and Repair	1	3
Local, State, or Federal Government	7	14
Management, Business, and Financial	2	5
Office and Administrative Support	1	0
Production	3	10
Professional and Related	3	90
Sales and Related	5	11
Service	1	15
Transportation and Material Moving	1	1
Grand Total	53	206

The employers expressed strong support for the applied baccalaureate at Chemeketa, identifying a need for additional education in their workforce and a willingness to pursue this degree. A sampling of these employer responses is included below.









The results of the survey add a layer of confidence in the need for bachelor's level education for the local workforce. When coupled with the completer data in the table on page 4 and the local workforce data, these results from employers further demonstrates that there are students interested in pursuing advanced education/training and positions locally that need that level of education.

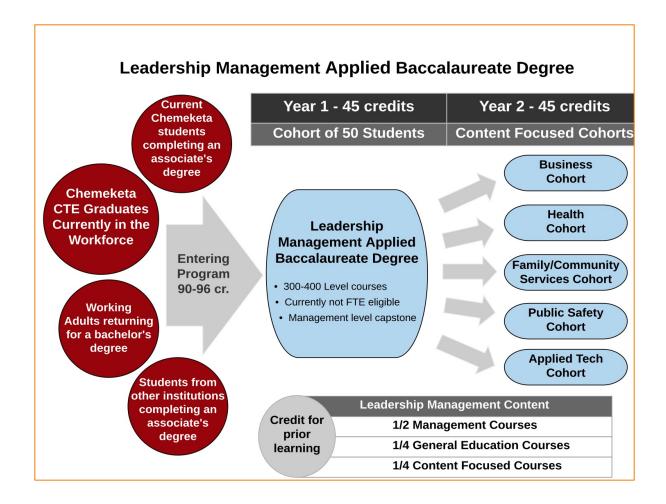
- 4. Applied baccalaureate program builds on academic, professional or technical degree program(s) or courses already offered.
 - a. Describe the existing professional and technical degree program(s) that will be used as the foundation for this applied baccalaureate program. Include how long the program has been in existence, the date of its last review by its department within the college, and the enrollment history of the program(s) over the past six years.

Chemeketa Community College has offered business programs since its inception. The current Business and Technology, Early Childhood Education, and Visual Communications Department includes the programs which help form the foundation for the Applied Leadership and Management curriculum. Accounting, Business Management, Computer Information Systems, Office Administration and Technology and Cooperative Work Experience/Internship are housed together in this department. Each of these programs complete the college's program review process on a regular cycle. The schedule of review is on a six-year cycle, attached.

While the Applied Leadership and Management curriculum is built on the foundation of Chemeketa's Business Programs, it is specifically designed to serve students from a broad range of the college's career and technical programs (see attached CTE programs brochure). Most notably, the proposed degree provides a bachelor's degree pathway for graduates of programs such as Automotive Technology, Building Inspection, Criminal Justice, Fire Protection Technology, Health Services Management, Hospitality and Tourism and Management, Addiction Studies, Manufacturing and Welding.

Students who have earned their associate of applied science degrees have a foundation of skills and knowledge to successfully enter the workforce in areas such as public safety, applied technologies, human services, and healthcare. The Applied Leadership and Management Degree will prepare these individuals with the skills to supervise others and lead projects in their field. According to the 2017 World Economic Forum, "future workforce skills will focus on leadership, strategic and critical thinking, collaboration, problem-solving, and creativity over technical skills" (Langemo, 2019). In the Applied Leadership program students will combine their technical skills with the ability to think and problem solve in new ways.

The chart below illustrates the pathway into the Applied Leadership and Management Degree. All students will study the broad areas of leadership and management in the first year. During the second year of the program, they will be divided into sector-specific cohorts through which they will engage in work-based learning opportunities that align with their career goals and local industry needs.



b. How might this existing program need to be revised to better integrate with an applied baccalaureate program?

At the core of each career technical associate of applied science degree at Chemeketa is a commitment to technical skills and preparation for participation in the workforce. Driven by industry advisory committee input, the curricula and activities provided in each course of study focus on development of a well-rounded graduate with technical expertise, the ability to collaborate, and knowledge of ethical workplace practices. In order to ensure that all graduates from these programs can successfully continue into the Applied Leadership and Management Degree pathway, we anticipate both initial and continuous review of total degree credits, general education requirements, prerequisite attainment, and alignment of sector-specific content for all AAS degrees. Chemeketa is well-positioned to ensure this integration through continued collaboration among degree programs, engagement of advisory boards, and relationships with local employers.

Attachments:

Letters of Community Support	2
Willamette Workforce Partnership (WWP)	
Salem Keizer Public Schools	
Strategic Economic Development Corporation (SEDCOR)	
Salem Chamber of Commerce	
Family Building Blocks	
Rich Duncan Construction	
Economic Data	8
AAS Degree Enrollment	43
CTE Program Brochure	46
Program Review Schedule	48



June 21, 2021

Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard,

This letter is in support of Chemeketa Community College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership and Management at Chemeketa Community College. At Willamette Workforce Partnership we know the value of advanced leadership training for our workforce and wholeheartedly support a degree program that will allow working adults to advance in their careers.

As a catalyst for the alignment of the region's economic and workforce development, our vision at Willamette Workforce Partnership is to see the Mid-Willamette Valley prosper through a dynamic, engaged, and innovative workforce. We consider Chemeketa Community College as a significant contributor to that vision becoming a reality. Building leadership and management skills through education can significantly strengthen the many organizations in our vibrant and diverse economy and will translate to even greater success in the region.

We believe that Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will assist our constituents in meeting their career goals and will provide an important resource for the growth of industry in the Willamette Valley.

Sincerely.

Kím Parker-Llerenas

Kim Parker-Llerenas, Executive Director Willamette Workforce Partnership



CHRISTY PERRY, Superintendent 2450 Lancaster Drive NE • PO Box 12024 Salem, Oregon 97309-0024 503-399-3001

June 15, 2021

Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard,

This letter is in support of Chemeketa Community College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership and Management at Chemeketa Community College.

Salem-Keizer Public Schools employs more than 7,000 staff in numerous capacities and in varying levels of leadership. Advanced leadership training would provide staff an opportunity to strengthen their candidacy for leadership opportunities within our organization. We believe in training up strong leaders and wholeheartedly support a degree program that will allow working adults to advance in their careers.

Salem-Keizer Public Schools is community-strong and community-focused. Many of our staff were Salem-Keizer students themselves and then attended local colleges, including Chemeketa, before rejoining us as staff members. Our district currently provides career pathways or training for employees to become teachers, office managers, or administrators, and we believe Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will be a great avenue to provide a local, community-based option for advanced leadership training for current and future employees.

Salem-Keizer Public Schools and Chemeketa Community College have a long-standing relationship that continues to benefit our community, and we are pleased to work with them and support this next endeavor.

Sincerely,

Christy Perry

June 16, 2021

Dr. Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard,

I am writing in support of Chemeketa Community College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership and Management. At SEDCOR, we know the value of advanced leadership training for our workforce and wholeheartedly support a degree program at Chemeketa that will allow working adults to advance in their careers.

SEDCOR, the Strategic Economic Development Corporation, is a regional public-private partnership working to promote economic vitality in our three-county region. The Mid-Willamette Valley region is home to a variety of industries, including agriculture, food processing, advanced technology, logistics, and, of course, government. Employers in all these sectors require leadership and business analytics training for their workforce to secure the management teams that will lead their businesses in the future. Because many are working adults with families, a degree program that meets their career, scheduling and affordability needs is paramount. The program Chemeketa is proposing would have the advantage of being tailored to working adults with technical associate's degrees and designed to meet the needs of Mid-Willamette Valley employers.

We believe that Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will provide an important resource for employers in a variety of industries in the region. SEDCOR would be happy to promote this resource to business and community leaders through our media outlets as well as explore cooperative programming in our Business Forum series.

Sincerely,

Erik Andersson President

President Erik Andersson

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626 High St. NE Suite 200 Salem, Or. 97301 503-588-6225 www.sedcor.com



June 24, 2021

Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard,

We write to you in support of the College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership & Management at Chemeketa Community College. At the Salem Chamber, we believe in helping business prosper so our entire community may thrive. We know the value of advanced leadership training for our workforce and find great value in Chemeketa having the ability to offer such a degree program to its diverse enrollment of students. that will allow working adults to advance in their careers. This program is a pragmatic approach to elevating the careers of individuals and working families and pays dividends to our community as a whole.

The Salem Chamber of Commerce represents over 1,000 businesses which employ roughly 45,000 individuals within our region. With a wide range of private sector industries ranging from manufacturing, restaurant hospitality, professional services, to the agricultural sector, we know the breadth of skills needed for future employees across many industries. Because many Chemeketa students are working adults, such a degree program will meet the unique career goals of many students, often in a more affordable program than seen at four-year colleges across our state. The degree Chemeketa is pursuing would have a distinct advantage of being tailored towards working adults who wish to optimize their impact within the for-profit sector in the Willamette Valley and beyond.

We believe that Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will be a considerable asset to aid in the future growth and prosperity of our local business community. The advancement of educational opportunities focused on leadership and professional training of individuals within their respected career fields is benefit to our regional economy and future growth within the Willamette Valley. The Salem Chamber is proud to partner with Chemeketa Community College in advancing our local workforce goals and results.

Sincerely,

Tom Hoffert, IOM Chief Executive Officer

Salem Chamber of Commerce

Salem Area Chamber of Commerce

President

Kathy Gordon Aldrich CPAs + Advisors

Executive Committee

Laura Dorn • President-Elect Berkshire Hathaway HomeServices

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AmeriTitle

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Pioneer Trust Bank

Jeff Miller

Coldwell Banker Commercial

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Corban University

Maria Palacio

Olson Florist

Chief Executive Officer

Tom Hoffert Salem Area Chamber of Commerce

"KEEPING CHILDREN SAFE AND FAMILIES TOGETHER"

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Conrad Venti

Patrice Altenhofen Executive Director June 24, 2021

Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard,

This letter is in support of Chemeketa Community College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership and Management at Chemeketa Community College. At Family Building Blocks, we know the value of advanced leadership training for our workforce and wholeheartedly support a degree program that will allow working adults to advance in their careers.

Family Building Blocks employs over 100 people in furtherance of our mission to keep children safe and families together. Many of our employees have AA degrees in early childhood education, human services, etc. Without a bachelor's degree, promotional opportunities are limited. An Applied Baccalaureate degree in Leadership and Management would create a pathway for employees to gain the credential needed for advancement, while providing practical, applied leadership skills. For existing employees, a degree program that meets their career, scheduling and affordability needs is paramount. The program Chemeketa is proposing is tailored to working adults with associate's degrees and would be an important asset to Willamette Valley employment.

We believe that Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will assist our employees in meeting their career goals and provide an important resource for the growth of industry in the Willamette Valley. Family Building Blocks would be happy to extend our existing successful partnership with Chemeketa by providing practicum opportunities for program students.

Sincerely,

Patrice Altenhofen Executive Director

Patrice Altenhofen



6/24/2021

Jessica Howard, President Chemeketa Community College 4000 Lancaster Dr. NE Salem, Oregon 97304

Dear Dr. Howard.

This letter is in support of Chemeketa Community College's application to the Higher Education Coordinating Commission to offer an Applied Baccalaureate degree in Applied Leadership and Management at Chemeketa Community College. At Rich Duncan Construction, we know the value of advanced leadership training for our workforce and wholeheartedly support a degree program that will allow working adults to advance in their careers.

At Rich Duncan Construction, we employ over 40 people in the construction field. Many of our employees have certificates or AA degrees in engineering, forklift training, OSHA, etc. In order for them to advance to the management level, we require leadership and business analytics training. Because many are working adults with families, a degree program that meets their career, scheduling and affordability needs is paramount. The program Chemeketa is proposing would have the advantage of being tailored to working adults with technical associate's degrees and be designed for the employment needs of the Willamette Valley.

We believe that Chemeketa's Applied Baccalaureate degree in Applied Leadership and Management will assist our employees/constituents in meeting their career goals and provide an important resource for the growth of industry in the Willamette Valley. Rich Duncan Construction would be happy to provide practicum opportunities for program students and provide industry focused guest lectures.

Sincerely,

Rich Duncan, Rich Duncan Construction

What is the current and projected number of jobs in the central Willamette Valley that require a bachelor's degree in business, management, leadership or other supervision related areas as a minimum requirement for employment?

	2019	2029			Replacement	Total	
ndard Occupational Classification Title	Employment	Employment	Change	Change			Typical Entry-Level Education
Management Occupations	15,265	16,777	9.9%	1,512	13,531	15,043	
Top Executives	4,464	4,895	9.7%	431	4,019	4,450	
Chief Executives	273	255	-6.6%	-18	187	169	Bachelor's degree
General and Operations Managers	4,164	4,613	10.8%	449	3,811	4,260	Bachelor's degree
Legislators	27	27	0.0%	0	21	21	Bachelor's degree
Advertising, Marketing, Promotions, Public Relations, and							
Sales Managers	954	1,046	9.6%	92	886	978	
Advertising and Promotions Managers	-S-	-S-	-S-	-S-	-S-		Bachelor's degree
Marketing Managers	229	259	13.1%	30	217	247	Bachelor's degree
Sales Managers	635	690	8.7%	55	588	643	Bachelor's degree
Public Relations and Fundraising Managers	-S-	-S-	-s-	-S-	-S-	-S-	Bachelor's degree
Operations Specialties Managers	2,943	3,323	12.9%	380	2,482	2,862	-
Administrative Services Managers	766	834	8.9%	68	666	734	Bachelor's degree
Computer and Information Systems Managers	263	288	9.5%	25	215	240	Bachelor's degree
Financial Managers	870	1,041	19.7%	171	737	908	Bachelor's degree
Industrial Production Managers	441	481	9.1%	40	336	376	Bachelor's degree
Purchasing Managers	85	95	11.8%	10	75		Bachelor's degree
Transportation, Storage, and Distribution Managers	246	279	13.4%	33	207	240	Associate's degree
Compensation and Benefits Managers	-S-	-S-	-s-	-S-	-S-		Bachelor's degree
Human Resources Managers	243	274	12.8%	31	219		Bachelor's degree
Training and Development Managers	-S-	-s-	-s-	-S-	-s-		Bachelor's degree
Other Management Occupations	6,904	7,513	8.8%	609	6,144	6,753	
Farmers, Ranchers, and Other Agricultural Managers	1,485	1,508	1.6%	23	1,486	1.509	High school diploma or equivalent
Construction Managers	935	1,071	14.6%	136	722		Associate's degree
Education Administrators, Preschool and Childcare		,-					
Center/Program	81	101	24.7%	20	70	90	Associate's degree
Education Administrators, Elementary and Secondary							
School	556	621	11.7%	65	457	522	Master's degree
Education Administrators, Postsecondary	225	230	2.2%	5	177		Master's degree
Education Administrators, All Other	61	66	8.2%	5	49		Master's degree
Architectural and Engineering Managers	185	200	8.1%	15	139		Bachelor's degree
Food Service Managers	555	610	9.9%	55	667		High school diploma or equivalent
Funeral Service Managers	-S-	-S-	-S-	-s-	-S-		Associate's degree
Gaming Managers	-S-	-S-	-S-	-S-	-S-		Postsecondary training (non-degre
Lodging Managers	-S-	-S-	-s-	-S-	-S-		High school diploma or equivalent
Medical and Health Services Managers	620	721	16.3%	101	531		Bachelor's degree
Natural Sciences Managers	109	121	11.0%	12	101		Bachelor's degree
Postmasters and Mail Superintendents	34	34	0.0%	0	26		High school diploma or equivalent
Property, Real Estate, and Community Association	34	34	0.070		20	20	riigii scriboi dipiorita di equivalent
Managers	452	492	8.9%	40	364	404	High school diploma or equivalent
Social and Community Service Managers	461	503	9.1%	42	418		Bachelor's degree
Emergency Management Directors	15	16	6.7%	1	13		Bachelor's degree
Managers, All Other	1,010	1,083	7.2%	73	793	866	Bachelor's degree

What is the current and projected number of jobs in the central Willamette Valley that require a bachelor's degree in business, management, leadership or other supervision related areas to be competitive and successfully advance in the career area?

	2019	2029	Percent	Employment	Replacement	Total		
Standard Occupational Classification Title	Employment	Employment	Change	Change	Openings	Openings	Typical Entry-Level Education	Competitive Education
Management Occupations	15,265	16,777	9.9%	1,512	13,531	15,043		
Top Executives	4,464	4,895	9.7%	431	4,019	4,450		
Chief Executives	273	255	-6.6%	-18	187	169	Bachelor's degree	Bachelor's degree
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Computer and Information Systems Managers	263	288	9.5%	25	215	240	Bachelor's degree	Bachelor's degree
Financial Managers	870	1,041	19.7%	171	737		Bachelor's degree	Bachelor's degree
Industrial Production Managers	441	481	9.1%	40	336	376	Bachelor's degree	Bachelor's degree
Purchasing Managers	85	95	11.8%	10	75	85	Bachelor's degree	Bachelor's degree
Transportation, Storage, and Distribution Managers	246	279	13.4%	33	207	240	Associate's degree	Bachelor's degree
Compensation and Benefits Managers	-S-	-S-	-S-	-S-	-S-		Bachelor's degree	Bachelor's degree
Human Resources Managers	243	274	12.8%	31	219		Bachelor's degree	Bachelor's degree
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Education Administrators, Elementary and Secondary							3	
School	556	621	11.7%	65	457	522	Master's degree	Master's degree
Education Administrators, Postsecondary	225	230	2.2%	5	177		Master's degree	Doctoral or professional degree
Education Administrators, All Other	61	66	8.2%	5	49		Master's degree	Doctoral or professional degree
Architectural and Engineering Managers	185	200	8.1%	15	139		Bachelor's degree	Bachelor's degree
Food Service Managers	555	610	9.9%	55	667		High school diploma or equivalent	Associate's degree
Funeral Service Managers	-S-	-S-	-s-	-S-	-S-		Associate's degree	Associate's degree
Gaming Managers	-S-	-S-	-S-	-S-	-S-		Postsecondary training (non-degree)	Associate's degree
Lodging Managers	-S-	-S-	-S-	-S-	-S-		High school diploma or equivalent	Associate's degree
Medical and Health Services Managers	620	721	16.3%	101	531		Bachelor's degree	Master's degree
Natural Sciences Managers	109	121	11.0%	12	101		Bachelor's degree	Master's degree
Postmasters and Mail Superintendents	34	34	0.0%	0	26		High school diploma or equivalent	Bachelor's degree
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Managers	452	492	8.9%	40	364	404	High school diploma or equivalent	Postsecondary training (non-degree)
Social and Community Service Managers	461	503	9.1%	42	418		Bachelor's degree	Bachelor's degree
Emergency Management Directors	15	16	6.7%	1	13		Bachelor's degree	Bachelor's degree
Managers, All Other	1,010	1,083	7.2%	73	793		Bachelor's degree	Bachelor's degree

What is the gap between current bachelor's degree program graduate numbers and the current and projected jobs that either require a bachelor's degree as a minimum or in order to be competitive in the career area (again, business, management, leadership or supervision related areas)?

OED Job Vacancy Survey (May 2019)

- Key Findings
- 1. At any given time in 2018, Oregon's private employers had 58,000 job vacancies. They reported difficulty filling 33,000 (or 57%) of those job vacancies.
- 2. In a nearly decade-long stretch of annual job growth, and two years of Oregon's unemployment rate at or near its record low, a lack of applicants has been the greatest challenge businesses face in filling job vacancies.
- 3. Two-thirds (67%) of difficult-to-fill job vacancies required previous work experience, while closer to one-third (38%) of job openings filled without difficulty required previous experience.
- 4. Job vacancies requiring education beyond high school offered higher starting wages on average, and were also more likely to require previous experience.
- 5. Vacancies with higher education requirements, more previous work experience requirements, or a combination of both tend to offer higher wages, and tend to be more difficult job openings for employers to fill.
- 6. Health care and social assistance had the largest number of difficult-to-fill vacancies (5,500), while construction reported the largest share of all vacancies as difficult to fill (85%).
- 7. Some top occupations by number of difficult-to-fill vacancies personal care aides, truck drivers, farm workers have consistently been among the most challenging job openings for employers to fill for years.
- 9. While current economic conditions create hiring challenges, employers may be able to compete for labor by raising wages, enhancing employment benefits, increasing their recruitment intensity, lowering experience requirements, or partnering with education or training entities to train the available labor force for needed skills.
- 10. Job seekers can see employers' reported hiring challenges and preferences, and highlight any relevant experience, whether in a formal workplace, through a sponsored training program, or unpaid volunteering. Demonstrated soft skills and schedule flexibility may also give job candidates an advantage.



We can also look at education and occupational data from the U.S. Census Bureau's American Community Survey. This table shows education attainment of workers in management occupations in Marion, Polk and Yamhill counties.

Broad Occupation	Education Attainment	STEMFLAG	Population	PopRelativeRSE	PopMOE	AverageWage	qrt20	qrt40	qrt50	qrt60	qrt80	StandardError	WageRelativeSE	WageMOE
11	Less than High School	NON-STEM	625	24%	248	\$43,901	\$14,000	\$17,000	\$30,000	\$42,000	\$80,000	\$11,428	26%	\$18,799
11	Less than High School	STEM	1,024	18%	308	\$28,843	\$0	\$24,000	\$27,000	\$35,000	\$50,000	\$5,333	18%	\$8,772
11	High School Diploma or Equivalent	NON-STEM	1,208	13%	267	\$39,141	\$13,500	\$24,000	\$30,000	\$35,200	\$55,000	\$6,072	16%	\$9,989
11	High School Diploma or Equivalent	STEM	2,078	12%	404	\$57,406	\$10,000	\$40,000	\$50,000	\$63,000	\$100,000	\$7,387	13%	\$12,151
11	Postsecondary Education or Associate's Degree	NON-STEM	3,580	10%	562	\$48,802	\$16,000	\$35,000	\$41,000	\$50,000	\$73,000	\$4,108	8%	\$6,758
11	Postsecondary Education or Associate's Degree	STEM	5,156	8%	656	\$56,719	\$7,500	\$38,000	\$45,000	\$55,000	\$88,000	\$4,315	8%	\$7,099
11	Bachelor's Degree or Higher	NON-STEM	3,595	9%	523	\$70,343	\$34,000	\$50,000	\$65,000	\$80,000	\$104,000	\$4,756	7%	\$7,823
11	Bachelor's Degree or Higher	STEM	5,104	8%	643	\$89,008	\$32,000	\$70,000	\$80,000	\$90,000	\$117,000	\$5,493	6%	\$9,036



About 22% of managers in Marion, Polk and Yamhill counties have a degree in business management.

Broad Occupation	DegreeType	Population pRe	ativeRSE	PopMOE Av	erageWage	qrt20	qrt40	qrt50	qrt60	qrt80 Sta	andardError agel	RelativeSE	WageMOE
11	All Other Degrees	6,772	7%	731	\$78,091	\$30,000	\$62,000	\$75,000	\$86,000	\$105,000	\$3,337	4%	\$5,489
11	Business or Management	1,927	11%	364	\$92,551	\$38,000	\$63,000	\$70,000	\$85,000	\$125,000	\$10,161	11%	\$16,715



Nearly the same number of workers in management occupations have Postsecondary Education or Associate's Degree as have a Bachelor's Degree.

Occupation Group	Education Attainment	Population	PopRelativeRSE	PopMOE	AverageWage	qrt20	qrt40	qrt50	qrt60	qrt80	StandardError	WageRelativeSE	WageMOE
All Other Occupations	Less than High School	32,223	3%	1,781	\$24,264	\$3,500	\$15,000	\$21,500	\$25,000	\$36,000	\$1,025	4%	\$1,686
All Other Occupations	High School Diploma or Equivalent	58,084	2%	2,348	\$28,284	\$7,400	\$18,000	\$23,500	\$30,000	\$45,000	\$557	2%	\$917
All Other Occupations	Postsecondary Education or Associate's Degree	87,084	2%	2,423	\$32,528	\$7,600	\$20,000	\$26,450	\$34,000	\$50,000	\$593	2%	\$975
All Other Occupations	Bachelor's Degree or Higher	52,980	2%	2,134	\$55,516	\$17,000	\$38,000	\$48,000	\$57,000	\$80,000	\$1,236	2%	\$2,033
Management Occupations	Less than High School	1,649	15%	406	\$34,550	\$6,500	\$24,000	\$27,000	\$36,000	\$55,000	\$5,484	16%	\$9,021
Management Occupations	High School Diploma or Equivalent	3,286	10%	553	\$50,691	\$12,000	\$30,000	\$40,000	\$50,000	\$90,000	\$5,584	11%	\$9,186
Management Occupations	Postsecondary Education or Associate's Degree	8,736	6%	883	\$53,475	\$12,000	\$38,000	\$44,000	\$51,000	\$80,000	\$2,866	5%	\$4,715
Management Occupations	Bachelor's Degree or Higher	8,699	6%	807	\$81,295	\$34,000	\$62,000	\$72,000	\$86,000	\$110,000	\$3,822	5%	\$6,287



w Leve	SOC el Code	Standard Occupational Classification Title	2019 Employment		Percent Change	Employment Change	Replacement Openings	Total Openings Typical Entry-Level Education	Competitive Education
1	00-0000	Total, All Occupations Management, Business, and Financial	283,711 27,582	307,907 30.549	8.5% 10.8%	24,196 2.967	348,054 25.827	372,250 28,794	
2	11-0000	Management, Business, and Financial Management Occupations	27,582 15,265	30,549 16,777	9.9%	2,967 1,512	25,82 <i>1</i> 13,531	28,794 15.043	
3	11-1000	Top Executives	4.464	4,895	9.5%	431	4,019	4.450	
4	11-1000	Chief Executives	273	255	-6.6%	-18	187	169 Bachelor's degree	Bachelor's degree
4	11-1021	General and Operations Managers	4,164	4,613	10.8%	449	3,811	4,260 Bachelor's degree	Bachelor's degree
4	11-1031	Legislators	27	27	0.0%	0	21	21 Bachelor's degree	Bachelor's degree
3	11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	954	1,046	9.6%	92	886	978	
4	11-2011	Advertising and Promotions Managers	-s-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
4	11-2021	Marketing Managers	229	259	13.1%	30	217	247 Bachelor's degree	Bachelor's degree
4	11-2022	Sales Managers	635	690	8.7%	55	588	643 Bachelor's degree	Bachelor's degree
4	11-2031	Public Relations and Fundraising Managers	-s-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Bachelor's degree
3	11-3000	Operations Specialties Managers	2,943	3,323	12.9%	380	2,482	2,862	
4	11-3011	Administrative Services Managers	766	834	8.9%	68	666	734 Bachelor's degree	Bachelor's degree
4	11-3021	Computer and Information Systems Managers	263	288	9.5%	25	215	240 Bachelor's degree	Bachelor's degree
4	11-3031	Financial Managers	870	1,041	19.7%	171	737	908 Bachelor's degree	Bachelor's degree
4	11-3051	Industrial Production Managers	441	481	9.1%	40	336	376 Bachelor's degree	Bachelor's degree
4	11-3061	Purchasing Managers	85	95	11.8%	10 33	75 207	85 Bachelor's degree	Bachelor's degree
4	11-3071	Transportation, Storage, and Distribution Managers	246 -s-	279 -s-	13.4% -s-	-S-		240 Associate's degree	Bachelor's degree
4	11-3111 11-3121	Compensation and Benefits Managers Human Resources Managers	243	274	12.8%	31	-s- 219	-s- Bachelor's degree	Bachelor's degree
4	11-3121	Training and Development Managers	243 -S-	-S-	12.0% -S-	-S-	-S-	250 Bachelor's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree
3	11-9000	Other Management Occupations	6,904	7,513	8.8%	609	6.144	6,753	Dadricioi 3 degree
4	11-9000	Farmers, Ranchers, and Other Agricultural Managers	1,485	1,508	1.6%	23	1,486	1,509 High school diploma or equivalent	Bachelor's degree
4	11-9021	Construction Managers	935	1,071	14.6%	136	722	858 Associate's degree	Bachelor's degree
4	11-9031	Education Administrators, Preschool and Childcare Center/Program	81	101	24.7%	20	70	90 Associate's degree	Bachelor's degree
4	11-9032	Education Administrators, Elementary and Secondary School	556	621	11.7%	65	457	522 Master's degree	Master's degree
4	11-9033	Education Administrators, Postsecondary	225	230	2.2%	5	177	182 Master's degree	Doctoral or professional deg
4	11-9039	Education Administrators, All Other	61	66	8.2%	5	49	54 Master's degree	Doctoral or professional deg
4	11-9041	Architectural and Engineering Managers	185	200	8.1%	15	139	154 Bachelor's degree	Bachelor's degree
4	11-9051	Food Service Managers	555	610	9.9%	55	667	722 High school diploma or equivalent	Associate's degree
4	11-9061	Funeral Service Managers	-s-	-S-	-S-	-S-	-S-	-s- Associate's degree	Associate's degree
4	11-9071	Gaming Managers	-S-	-s-	-S-	-S-	-s-	-s- Postsecondary training (non-degree	
4	11-9081	Lodging Managers	-S-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent	
4	11-9111	Medical and Health Services Managers	620	721	16.3%	101	531	632 Bachelor's degree	Master's degree
4	11-9121	Natural Sciences Managers	109	121	11.0%	12	101	113 Bachelor's degree	Master's degree
4	11-9131	Postmasters and Mail Superintendents	34	34	0.0%	0 40	26	26 High school diploma or equivalent	Bachelor's degree
4	11-9141	Property, Real Estate, and Community Association Managers	452 461	492 503	8.9%	40 42	364	404 High school diploma or equivalent	Postsecondary training (non
4	11-9151	Social and Community Service Managers	461	16	9.1% 6.7%		418 13	460 Bachelor's degree	Bachelor's degree
4	11-9161 11-9199	Emergency Management Directors Managers, All Other	1,010	1.083	7.2%	1 73	793	14 Bachelor's degree 866 Bachelor's degree	Bachelor's degree Bachelor's degree
2	13-0000	Business and Financial Operations Occupations	12,317	13,772	11.8%	1,455	12,296	13,751	Dacrieioi s degree
3	13-1000	Business Operations Specialists	8,597	9,773	13.7%	1,176	8,905	10,081	
4	13-1011	Agents and Business Managers of Artists, Performers, and Athletes	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Bachelor's degree
4	13-1020	Buyers and Purchasing Agents	643	630	-2.0%	-13	664	651 Bachelor's degree	Bachelor's degree
4	13-1031	Claims Adjusters, Examiners, and Investigators	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
4	13-1041	Compliance Officers	711	777	9.3%	66	652	718 Bachelor's degree	Bachelor's degree
4	13-1051	Cost Estimators	489	562	14.9%	73	519	592 Bachelor's degree	Bachelor's degree
4	13-1071	Human Resources Specialists	764	811	6.2%	47	790	837 Bachelor's degree	Bachelor's degree
4	13-1074	Farm Labor Contractors	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equiv
4	13-1075	Labor Relations Specialists	144	142	-1.4%	-2	143	141 Bachelor's degree	Bachelor's degree
4	13-1081	Logisticians	105	115	9.5%	10	105	115 Bachelor's degree	Bachelor's degree
4	13-1111	Management Analysts	2,721	3,471	27.6%	750	2,916	3,666 Bachelor's degree	Master's degree
4	13-1121	Meeting, Convention, and Event Planners	127	138	8.7%	11	150	161 Bachelor's degree	Bachelor's degree
4	13-1131	Fundraisers	69	77	11.6%	8	76	84 Bachelor's degree	Bachelor's degree
	13-1141	Compensation, Benefits, and Job Analysis Specialists	67	73	9.0%	6	66	72 Bachelor's degree	Bachelor's degree
4	13-1151	Training and Development Specialists	637	713	11.9%	76	724	800 Bachelor's degree	Bachelor's degree
4	13-1161	Market Research Analysts and Marketing Specialists	389	472	21.3%	83	440	523 Bachelor's degree	Master's degree
4		Business Operations Specialists, All Other	1,253	1,340	6.9%	87	1,245	1,332 Bachelor's degree	Bachelor's degree
4 4 4	13-1199			3,999	7.5%	279	3,391 1,692	3,670 1,873 Bachelor's degree	Pachalaria dagras
4 4 4 3	13-2000	Financial Specialists	3,720		10 50/			1.073 Dacrieiors dedree	Bachelor's degree
4 4 4 3 4	13-2000 13-2011	Accountants and Auditors	1,725	1,906	10.5%	181			Bacholor's degree
4 4 4 3 4	13-2000 13-2011 13-2021	Accountants and Auditors Appraisers and Assessors of Real Estate	1,725 294	1,906 315	7.1%	21	227	248 Associate's degree	Bachelor's degree
4 4 4 3 4 4	13-2000 13-2011 13-2021 13-2031	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts	1,725 294 258	1,906 315 280	7.1% 8.5%	21 22	227 209	248 Associate's degree 231 Bachelor's degree	Bachelor's degree
4 4 4 3 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts	1,725 294 258 62	1,906 315 280 59	7.1% 8.5% -4.8%	21 22 -3	227 209 54	248 Associate's degree231 Bachelor's degree51 Bachelor's degree	Bachelor's degree Bachelor's degree
4 4 4 3 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts	1,725 294 258 62 67	1,906 315 280 59 74	7.1% 8.5% -4.8% 10.5%	21 22 -3 7	227 209 54 60	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree
4 4 3 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051 13-2052	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors	1,725 294 258 62 67 70	1,906 315 280 59 74 83	7.1% 8.5% -4.8% 10.5% 18.6%	21 22 -3 7 13	227 209 54 60 57	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 3 4 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051 13-2052 13-2053	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters	1,725 294 258 62 67 70 97	1,906 315 280 59 74 83 78	7.1% 8.5% -4.8% 10.5% 18.6% -19.6%	21 22 -3 7 13 -19	227 209 54 60 57 72	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree 53 Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree Bachelor's degree
4 4 4 3 4 4 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051 13-2052 13-2053 13-2061	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners	1,725 294 258 62 67 70 97 83	1,906 315 280 59 74 83 78 88	7.1% 8.5% -4.8% 10.5% 18.6% -19.6% 6.0%	21 22 -3 7 13 -19 5	227 209 54 60 57 72 64	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree 53 Bachelor's degree 69 Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 3 4 4 4 4 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051 13-2052 13-2053 13-2061 13-2071	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors	1,725 294 258 62 67 70 97 83 -s-	1,906 315 280 59 74 83 78 88 -s-	7.1% 8.5% -4.8% 10.5% 18.6% -19.6% 6.0% -s-	21 22 -3 7 13 -19 5	227 209 54 60 57 72 64 -s-	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree 53 Bachelor's degree 69 Bachelor's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 3 4 4 4 4 4 4 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2052 13-2052 13-2053 13-2061 13-2071 13-2072	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors Loan Officers	1,725 294 258 62 67 70 97 83 -s- 560	1,906 315 280 59 74 83 78 88 -s- 565	7.1% 8.5% -4.8% 10.5% 18.6% -19.6% 6.0% -s- 0.9%	21 22 -3 7 13 -19 5 -s-	227 209 54 60 57 72 64 -s- 471	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree 53 Bachelor's degree 69 Bachelor's degree -s- Bachelor's degree 476 Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 3 4 4 4 4 4 4 4 4	13-2000 13-2011 13-2021 13-2031 13-2041 13-2051 13-2052 13-2053 13-2061 13-2071	Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors	1,725 294 258 62 67 70 97 83 -s-	1,906 315 280 59 74 83 78 88 -s-	7.1% 8.5% -4.8% 10.5% 18.6% -19.6% 6.0% -s-	21 22 -3 7 13 -19 5	227 209 54 60 57 72 64 -s-	248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree 53 Bachelor's degree 69 Bachelor's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree

	soc	soc		2019	2029	Percent	Employment	Replacement	Total	
Row	Level		Standard Occupational Classification Title	Employment	Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
74			Professional and Related	36,297	39,638	9.2%	3,341	34,632	37,973	
75	2	15-0000	Computer and Mathematical Occupations	4,447	4,956	11.5%	509	3,504	4,013	
76	3	15-1100	Computer Occupations	-\$-	-S-	-S-	-S-	-S-	-S-	
77 78	4	15-1111 15-1121	Computer and Information Research Scientists Computer Systems Analysts	-s- 544	-s- 562	-s- 3.3%	-s- 18	-s- 399	-s- Master's Degree 417 Bachelor's degree	Doctoral or professional degree Bachelor's degree
78 79	4	15-1121	Information Security Analysts	63	81	28.6%	18	399 51	69 Bachelor's degree	Bachelor's degree
80	4	15-1122	Computer Programmers	286	247	-13.6%	-39	187	148 Bachelor's degree	Bachelor's degree
81	4	15-1132	Software Developers, Applications	936	1,150	22.9%	214	735	949 Bachelor's degree	Bachelor's degree
82	4	15-1133	Software Developers, Systems Software	70	79	12.9%	9	52	61 Bachelor's degree	Bachelor's degree
83	4	15-1134	Web Developers	95	106	11.6%	11	76	87 Bachelor's degree	Bachelor's degree
84	4	15-1141	Database Administrators	99	105	6.1%	6	73	79 Bachelor's degree	Bachelor's degree
85	4	15-1142	Network and Computer Systems Administrators	468	478	2.1%	10	330	340 Bachelor's degree	Bachelor's degree
86	4	15-1143	Computer Network Architects	-\$-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
87	4	15-1151	Computer User Support Specialists	1,056	1,205	14.1%	149	927	1,076 Postsecondary training (non-degree)	
88 89	4	15-1152 15-1199	Computer Network Support Specialists Computer Occupations, All Other	294 242	327 259	11.2% 7.0%	33 17	254 182	287 Postsecondary training (non-degree 199 Postsecondary training (non-degree	
90	3	15-1199	Mathematical Science Occupations	-S-	-S-	7.0% -S-	-S-	-S-	-S-	Bacrieioi s degree
91	4	15-2011	Actuaries	-s-	-S-	-s-	-s- -s-	-s- -s-	-s- Bachelor's degree	Master's degree
92	4	15-2031	Operations Research Analysts	36	45	25.0%	9	26	35 Bachelor's degree	Master's degree
93	4	15-2041	Statisticians	169	220	30.2%	51	149	200 Bachelor's degree	Master's degree
94	4	15-2090	Miscellaneous Mathematical Science Occupations	-S-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
95	2	17-0000	Architecture and Engineering Occupations	2,716	3,042	12.0%	326	2,309	2,635	-
96	3	17-1000	Architects, Surveyors, and Cartographers	216	253	17.1%	37	175	212	
97	4	17-1011	Architects, Except Landscape and Naval	95	113	19.0%	18	80	98 Bachelor's degree	Master's degree
98	4	17-1012	Landscape Architects	-\$-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
99	4	17-1021	Cartographers and Photogrammetrists	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
100 101	4 3	17-1022 17-2000	Surveyors Engineers	70 1.629	77 1,818	10.0% 11.6%	7 189	54 1.207	61 Bachelor's degree 1.396	Bachelor's degree
101	4	17-2000	Aerospace Engineers	1,629	70	9.4%	169	1,207	49 Bachelor's degree	Master's degree
103	4	17-2011	Agricultural Engineers	-S-	-s-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
104	4	17-2031	Biomedical Engineers	-S-	-s-	-s-	-s-	-s-	-s- Bachelor's degree	Master's degree
105	4	17-2041	Chemical Engineers	-S-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Master's degree
106	4	17-2051	Civil Engineers	408	451	10.5%	43	335	378 Bachelor's degree	Master's degree
107	4	17-2061	Computer Hardware Engineers	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
108	4	17-2071	Electrical Engineers	88	94	6.8%	6	60	66 Bachelor's degree	Master's degree
109	4	17-2072	Electronics Engineers, Except Computer	127	126	-0.8%	-1	84	83 Bachelor's degree	Master's degree
110 111	4 4	17-2081	Environmental Engineers	22 19	23	4.6%	1	17 14	18 Bachelor's degree	Master's degree
	4	17-2111 17-2112	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	193	22 220	15.8% 14.0%	3 27	14	17 Bachelor's degree	Master's degree
112 113	4	17-2112	Industrial Engineers Materials Engineers	41	39	-4.9%	-2	25	168 Bachelor's degree 23 Bachelor's degree	Master's degree Master's degree
114	4	17-2131	Mechanical Engineers	479	564	17.8%	85	352	437 Bachelor's degree	Master's degree
115	4	17-2199	Engineers, All Other	167	184	10.2%	17	121	138 Bachelor's degree	Master's degree
116	3	17-3000	Drafters, Engineering Technicians, and Mapping Technicians	871	971	11.5%	100	927	1,027	
117	4	17-3011	Architectural and Civil Drafters	129	146	13.2%	17	142	159 Postsecondary training (non-degree)	Associate's degree
118	4	17-3012	Electrical and Electronics Drafters	-S-	-S-	-S-	-s-	-S-	 -s- Postsecondary training (non-degree) 	
119	4	17-3013	Mechanical Drafters	67	70	4.5%	3	71	74 Postsecondary training (non-degree)	
120	4	17-3019	Drafters, All Other	51	60	17.7%	9	57	66 Postsecondary training (non-degree)	
121	4	17-3021	Aerospace Engineering and Operations Technicians	-S-	-S-	-S-	-S-	-S-	-s- Associate's degree	Bachelor's degree
122 123	4	17-3022 17-3023	Civil Engineering Technicians Electrical and Electronics Engineering Technicians	210 64	233 64	11.0% 0.0%	23	216 62	239 Associate's degree 62 Associate's degree	Associate's degree Associate's degree
123	4	17-3023	Electrical and Electronics Engineering Technicians Electro-Mechanical Technicians	25	27	8.0%	2	26	28 Associate's degree	Associate's degree
125	4	17-3024	Environmental Engineering Technicians	31	34	9.7%	3	32	35 Associate's degree	Associate's degree
126	4	17-3026	Industrial Engineering Technicians	39	44	12.8%	5	41	46 Associate's degree	Associate's degree
127	4	17-3027	Mechanical Engineering Technicians	56	62	10.7%	6	58	64 Associate's degree	Associate's degree
128	4	17-3029	Engineering Technicians, Except Drafters, All Other	121	141	16.5%	20	127	147 Associate's degree	Associate's degree
129	4	17-3031	Surveying and Mapping Technicians	64	73	14.1%	9	80	89 High school diploma or equivalent	Postsecondary training (non-degree)
130	2	19-0000	Life, Physical, and Social Science Occupations	2,193	2,379	8.5%	186	2,286	2,472	
131	3	19-1000	Life Scientists	807	862	6.8%	55	863	918	
132	4 4	19-1011	Animal Scientists	-S-	-S-	-S-	-S-	-s-	-s- Bachelor's degree	Master's degree
133 134	4	19-1012 19-1013	Food Scientists and Technologists Soil and Plant Scientists	81 234	85 252	4.9% 7.7%	4 18	93 271	97 Bachelor's degree 289 Bachelor's degree	Master's degree Master's degree
134	4	19-1013	Soil and Plant Scientists Microbiologists	234 -s-	252 -S-	7.7% -S-	18 -S-	2/1 -S-	-s- Bachelor's degree	Master's degree
136	4	19-1022	Zoologists and Wildlife Biologists	103	-s- 111	7.8%	-s- 8	98	106 Bachelor's degree	Master's degree
137	4	19-1023	Biological Scientists, All Other	47	49	4.3%	2	44	46 Bachelor's degree	Master's degree
138	4	19-1031	Conservation Scientists	89	97	9.0%	8	96	104 Bachelor's degree	Master's degree
139	4	19-1032	Foresters	192	201	4.7%	9	204	213 Bachelor's degree	Master's degree
140	4	19-1041	Epidemiologists	-S-	-S-	-S-	-S-	-S-	-s- Doctoral or professional degree	Doctoral or professional degree
141	4	19-1042	Medical Scientists, Except Epidemiologists	-S-	-s-	-S-	-s-	-s-	-s- Doctoral or professional degree	Doctoral or professional degree
142	4	19-1099	Life Scientists, All Other	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree

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		SOC		2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
143	3	19-2000	Physical Scientists	236	258	9.3%	22	250	272	Mantada dansa
144 145	4	19-2021 19-2031	Atmospheric and Space Scientists Chemists	-s- 47	-s- 50	-s- 6.4%	-s- 3	-s- 44	-s- Bachelor's degree 47 Bachelor's degree	Master's degree Master's degree
146	4	19-2031	Materials Scientists	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
147	4	19-2041	Environmental Scientists and Specialists, Including Health	50	54	8.0%	4	57	61 Bachelor's degree	Master's degree
148	4	19-2042	Geoscientists, Except Hydrologists and Geographers	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
149	4	19-2043	Hydrologists	57	61	7.0%	4	64	68 Bachelor's degree	Master's degree
150	4	19-2099	Physical Scientists, All Other	15	15	0.0%	0	13	13 Bachelor's degree	Master's degree
151	3	19-3000	Social Scientists and Related Workers	576	637	10.6%	61	486	547	
152	4	19-3011	Economists	59	65	10.2%	6	46	52 Bachelor's degree	Master's degree
153	4	19-3022	Survey Researchers	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
154 155	4	19-3031 19-3039	Clinical, Counseling, and School Psychologists	315	352 -s-	11.8% -s-	37 -s-	233 -s-	270 Master's degree	Doctoral or professional degree
156	4	19-3039	Psychologists, All Other Urban and Regional Planners	-s- 127	-s- 143	12.6%	-s- 16	-s- 125	-s- Master's degree 141 Bachelor's degree	Doctoral or professional degree Master's degree
157	4	19-3091	Anthropologists and Archeologists	21	21	0.0%	0	25	25 Bachelor's degree	Master's degree
158	4	19-3092	Geographers	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
159	4	19-3093	Historians	-S-	-S-	-s-	-S-	-s-	-s- Master's degree	Doctoral or professional degree
160	4	19-3094	Political Scientists	-S-	-s-	-S-	-S-	-s-	-s- Master's degree	Doctoral or professional degree
161	4	19-3099	Social Scientists and Related Workers, All Other	30	31	3.3%	1	35	36 Bachelor's degree	Master's degree
162	3	19-4000	Life, Physical, and Social Science Technicians	574	622	8.4%	48	687	735	
163	4	19-4011	Agricultural and Food Science Technicians	153	166	8.5%	13	193	206 Associate's degree	Associate's degree
164	4	19-4021	Biological Technicians	129	138	7.0%	9	140	149 Associate's degree	Bachelor's degree
165	4	19-4031	Chemical Technicians	35	36	2.9%	1	36	37 Associate's degree	Bachelor's degree
166	4	19-4061	Social Science Research Assistants	-S-	-s-	-S-	-s- 4	-s-	-s- Bachelor's degree	Bachelor's degree
167 168	4	19-4091 19-4092	Environmental Science and Protection Technicians, Including Health Forensic Science Technicians	29 -s-	33	13.8% -s-	4 -s-	36 -s-	40 Associate's degree	Bachelor's degree
169	4	19-4092	Forest and Conservation Technicians	-s- 88	-s- 90	2.3%	-8-	105	-s- Bachelor's degree 107 High school diploma or equivalent	Master's degree Associate's degree
170	4	19-4099	Life, Physical, and Social Science Technicians, All Other	122	139	13.9%	17	155	172 Associate's degree	Bachelor's degree
171	2	21-0000	Community and Social Service Occupations	5.641	6.273	11.2%	632	6.256	6.888	Dathelor 3 degree
172	3	21-1000	Counselors, Social Workers, and Other Community and Social Service Specialists	4,580	5,139	12.2%	559	4,981	5,540	
173	4	21-1012	Educational, Guidance, School, and Vocational Counselors	321	355	10.6%	34	345	379 Master's degree	Master's degree
174	4	21-1013	Marriage and Family Therapists	150	166	10.7%	16	161	177 Master's degree	Master's degree
175	4	21-1015	Rehabilitation Counselors	313	337	7.7%	24	332	356 Master's degree	Master's degree
176	4	21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	654	802	22.6%	148	745	893 Postsecondary training (non-degree	
177	4	21-1019	Counselors, All Other	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Master's degree
178	4	21-1021	Child, Family, and School Social Workers	555	626	12.8%	71	576	647 Bachelor's degree	Master's degree
179	4	21-1022	Healthcare Social Workers	151	173	14.6%	22	158	180 Bachelor's degree	Master's degree
180 181	4	21-1023 21-1029	Mental Health and Substance Abuse Social Workers Social Workers, All Other	473 326	520 362	9.9% 11.0%	47 36	485 336	532 Master's degree 372 Bachelor's degree	Master's degree Master's degree
182	4	21-1029	Health Educators	320 -S-	302 -S-	11.0% -S-	-S-	-S-	-s- Bachelor's degree	Master's degree
183	4	21-1091	Probation Officers and Correctional Treatment Specialists	480	522	8.8%	42	422	464 Bachelor's degree	Bachelor's degree
184	4	21-1093	Social and Human Service Assistants	775	854	10.2%	79	968	1,047 High school diploma or equivalent	Associate's degree
185	4	21-1094	Community Health Workers	37	40	8.1%	3	43	46 Postsecondary training (non-degree	
186	4	21-1099	Community and Social Service Specialists, All Other	246	266	8.1%	20	289	309 High school diploma or equivalent	Associate's degree
187	3	21-2000	Religious Workers	1,061	1,134	6.9%	73	1,275	1,348	· ·
188	4	21-2011	Clergy	576	613	6.4%	37	644	681 Bachelor's degree	Doctoral or professional degree
189	4	21-2021	Directors, Religious Activities and Education	331	357	7.9%	26	426	452 Bachelor's degree	Bachelor's degree
190	4	21-2099	Religious Workers, All Other	154	164	6.5%	10	205	215 Bachelor's degree	Bachelor's degree
191	2	23-0000	Legal Occupations	1,973	2,087	5.8%	114	1,316	1,430	
192	3	23-1000	Lawyers, Judges, and Related Workers	1,325	1,415	6.8%	90	657	747	
193 194	4	23-1011 23-1012	Lawyers Judicial Law Clerks	992	1,052	6.1% -s-	60 -s-	490 -S-	550 Doctoral or professional degree	Doctoral or professional degree
194	4	23-1012	Administrative Law Judges, Adjudicators, and Hearing Officers	-s- 197	-s- 215	9.1%	18	-s- 99	-s- Doctoral or professional degree 117 Doctoral or professional degree	Doctoral or professional degree Doctoral or professional degree
196	4	23-1021	Arbitrators, Mediators, and Conciliators	-S-	-S-	9.176 -S-	-S-	-S-	-s- Bachelor's degree	Doctoral or professional degree
197	4	23-1022	Judges, Magistrate Judges, and Magistrates	82	89	8.5%	-3-	41	48 Doctoral or professional degree	Doctoral or professional degree
198	3	23-2000	Legal Support Workers	648	672	3.7%	24	659	683	200toral or protocolorial acgree
199	4	23-2011	Paralegals and Legal Assistants	420	458	9.1%	38	464	502 Associate's degree	Bachelor's degree
200	4	23-2091	Court Reporters	-S-	-s-	-s-	-s-	-s-	-s- Postsecondary training (non-degree	
201	4	23-2093	Title Examiners, Abstractors, and Searchers	115	90	-21.7%	-25	91	66 High school diploma or equivalent	Postsecondary training (non-degree)
202	4	23-2099	Legal Support Workers, All Other	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	Associate's degree
203	2	25-0000	Education, Training, and Library Occupations	15,978	17,390	8.8%	1,412	14,945	16,357	
204	3	25-1000	Postsecondary Teachers	1,995	2,049	2.7%	54	1,669	1,723	
205	4	25-1011	Business Teachers, Postsecondary	99	110	11.1%	11	86	97 Master's degree	Doctoral or professional degree
206	4	25-1021	Computer Science Teachers, Postsecondary	15	14	-6.7%	-1	12	11 Master's degree	Doctoral or professional degree
207 208	4	25-1022 25-1031	Mathematical Science Teachers, Postsecondary	62	62	0.0% -s-	0 -s-	51	51 Master's degree	Doctoral or professional degree
208	4	25-1031	Architecture Teachers, Postsecondary Engineering Teachers, Postsecondary	-S- -S-	-S-	-S- -S-	-S- -S-	-S- -S-	-s- Master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
210	4	25-1032	Agricultural Sciences Teachers, Postsecondary	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-S- -S-	-s- master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
211	4	25-1041	Biological Science Teachers, Postsecondary	-s- 58	63	8.6%	-s- 5	50	55 Master's degree	Doctoral or professional degree
212	4	25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	8	7	-12.5%	-1	6	5 Master's degree	Doctoral or professional degree
213	4	25-1052	Chemistry Teachers, Postsecondary	31	32	3.2%	1	26	27 Master's degree	Doctoral or professional degree
214	4	25-1054	Physics Teachers, Postsecondary	15	15	0.0%	0	13	13 Master's degree	Doctoral or professional degree
215	4	25-1061	Anthropology and Archeology Teachers, Postsecondary	-S-	-S-	-S-	-s-	-S-	-s- Master's degree	Doctoral or professional degree
216	4	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
217	4	25-1063	Economics Teachers, Postsecondary	-S-	-S-	-S-	-8-	-S-	-s- Master's degree	Doctoral or professional degree

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	SOC			2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
218 219	4	25-1064 25-1065	Geography Teachers, Postsecondary Political Science Teachers, Postsecondary	-s- 14	-s- 15	-s- 7.1%	-s- 1	-s- 12	-s- Master's degree 13 Master's degree	Doctoral or professional degree Doctoral or professional degree
220	4	25-1066	Psychology Teachers, Postsecondary	78	84	7.1%	6	67	73 Master's degree	Doctoral or professional degree
221	4	25-1067	Sociology Teachers, Postsecondary	20	20	0.0%	0	16	16 Master's degree	Doctoral or professional degree
222	4	25-1069	Social Sciences Teachers, Postsecondary, All Other	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
223	4	25-1071	Health Specialties Teachers, Postsecondary	-S-	-S-	-s-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
224	4	25-1072	Nursing Instructors and Teachers, Postsecondary	-S-	-S-	-S-	-s-	-S-	-s- Master's degree	Doctoral or professional degree
225	4	25-1081	Education Teachers, Postsecondary	138	140	1.5%	2	115	117 Master's degree	Doctoral or professional degree
226 227	4	25-1082 25-1111	Library Science Teachers, Postsecondary Criminal Justice and Law Enforcement Teachers, Postsecondary	-S- -S-	-S-	-s- -s-	-S- -S-	-s- -s-	-s- Master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
228	4	25-1111	Social Work Teachers, Postsecondary	-5- -S-	-s- -s-	-s- -s-	-s- -s-	-s- -s-	-s- Master's degree	Doctoral or professional degree
229	4	25-1121	Art, Drama, and Music Teachers, Postsecondary	113	117	3.5%	4	95	99 Master's degree	Doctoral or professional degree
230	4	25-1122	Communications Teachers, Postsecondary	28	28	0.0%	0	23	23 Master's degree	Doctoral or professional degree
231	4	25-1123	English Language and Literature Teachers, Postsecondary	155	160	3.2%	5	130	135 Master's degree	Doctoral or professional degree
232	4	25-1124	Foreign Language and Literature Teachers, Postsecondary	21	21	0.0%	0	18	18 Master's degree	Doctoral or professional degree
233	4	25-1125	History Teachers, Postsecondary	33	33	0.0%	0	27	27 Master's degree	Doctoral or professional degree
234	4	25-1126 25-1191	Philosophy and Religion Teachers, Postsecondary	54	56 44	3.7%	2	45	47 Master's degree	Doctoral or professional degree
235 236	4	25-1191	Graduate Teaching Assistants Recreation and Fitness Studies Teachers, Postsecondary	44 27	44 26	0.0% -3.7%	0 -1	36 22	36 Bachelor's degree 21 Master's degree	Master's degree Doctoral or professional degree
237	4	25-1194	Vocational Education Teachers, Postsecondary	127	140	10.2%	13	110	123 Master's degree	Doctoral or professional degree
238	4	25-1199	Postsecondary Teachers, All Other	586	564	-3.8%	-22	476	454 Master's degree	Doctoral or professional degree
239	3	25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	6,488	7,304	12.6%	816	5,228	6,044	
240	4	25-2011	Preschool Teachers, Except Special Education	597	743	24.5%	146	672	818 Associate's degree	Bachelor's degree
241	4	25-2012	Kindergarten Teachers, Except Special Education	85	94	10.6%	9	89	98 Bachelor's degree	Master's degree
242	4	25-2021	Elementary School Teachers, Except Special Education	2,473	2,753	11.3%	280	1,927	2,207 Bachelor's degree	Master's degree
243	4	25-2022	Middle School Teachers, Except Special and Career/Technical Education	929	1,037	11.6%	108	725	833 Bachelor's degree	Master's degree
244	4	25-2031	Secondary School Teachers, Except Special and Career/Technical Education	1,751	1,956	11.7%	205	1,298	1,503 Bachelor's degree	Master's degree
245 246	4	25-2032 25-2051	Career/Technical Education Teachers, Secondary School Special Education Teachers. Preschool	-S- -S-	-S-	-s- -s-	-S- -S-	-s- -s-	-s- Bachelor's degree -s- Bachelor's degree	Master's degree Master's degree
247	4	25-2051	Special Education Teachers, Freschool Special Education Teachers, Kindergarten and Elementary School	181	200	10.5%	19	143	162 Bachelor's degree	Master's degree
248	4	25-2053	Special Education Teachers, Middle School	108	119	10.2%	11	86	97 Bachelor's degree	Master's degree
249	4	25-2054	Special Education Teachers, Secondary School	97	108	11.3%	11	77	88 Bachelor's degree	Master's degree
250	4	25-2059	Special Education Teachers, All Other	213	234	9.9%	21	168	189 Bachelor's degree	Master's degree
251	3	25-3000	Other Teachers and Instructors	1,030	1,103	7.1%	73	1,216	1,289	
252	4	25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
253	4	25-3021	Self-Enrichment Education Teachers	150	159	6.0%	9	176	185 High school diploma or equivalent	Postsecondary training (non-degree)
254 255	4	25-3097 25-3098	Teachers and Instructors, All Other, Except Substitute Teachers Substitute Teachers	572 -s-	611 -s-	6.8%	39 -s-	675 -S-	714 Bachelor's degree -s- Bachelor's degree	Master's degree Master's degree
256	3	25-4000	Librarians, Curators, and Archivists	447	456	2.0%	-s- 9	588	597	Master's degree
257	4	25-4011	Archivists	11	11	0.0%	0	12	12 Master's degree	Master's degree
258	4	25-4012	Curators	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Master's degree
259	4	25-4013	Museum Technicians and Conservators	-S-	-s-	-s-	-S-	-S-	-s- Bachelor's degree	Master's degree
260	4	25-4021	Librarians	170	183	7.7%	13	176	189 Master's degree	Master's degree
261	4	25-4031	Library Technicians	256	251	-2.0%	-5	389	384 Postsecondary training (non-degree	Postsecondary training (non-degree)
262	3	25-9000	Other Education, Training, and Library Occupations	6,018	6,478	7.6%	460	6,244	6,704	Builded de la cons
263 264	4	25-9011 25-9021	Audio-Visual and Multimedia Collections Specialists Farm and Home Management Advisors	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-s- Associate's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree
265	4	25-9021	Instructional Coordinators	215	235	9.3%	20	209	229 Bachelor's degree	Master's degree
266	4	25-9041	Teacher Assistants	3,329	3,695	11.0%	366	3,701	4,067 High school diploma or equivalent	Associate's degree
267	4	25-9099	Education, Training, and Library Workers, All Other	2,443	2,514	2.9%	71	2,304	2,375 Bachelor's degree	Bachelor's degree
268	2	27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	3,349	3,511	4.8%	162	4,016	4,178	-
269	3	27-1000	Art and Design Workers	857	931	8.6%	74	912	986	
270	4	27-1011	Art Directors	43	45	4.7%	2	47	49 Bachelor's degree	Bachelor's degree
271	4	27-1012 27-1013	Craft Artists	-S-	-s-	-s-	-s-	-s-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
272 273	4	27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators Multimedia Artists and Animators	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	-s- Associate's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree
274	4	27-1019	Artists and Related Workers, All Other	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent	Bachelor's degree
275	4	27-1021	Commercial and Industrial Designers	-S-	-s-	-s-	-S-	-s-	-s- Bachelor's degree	Bachelor's degree
276	4	27-1023	Floral Designers	149	151	1.3%	2	150	152 High school diploma or equivalent	Postsecondary training (non-degree)
277	4	27-1024	Graphic Designers	163	166	1.8%	3	164	167 Associate's degree	Bachelor's degree
278	4	27-1025	Interior Designers	34	39	14.7%	5	37	42 Associate's degree	Bachelor's degree
279	4	27-1026	Merchandise Displayers and Window Trimmers	-S-	-S-	-S-	-\$-	-S-	-s- High school diploma or equivalent	Associate's degree
280	4	27-1029	Designers, All Other	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Bachelor's degree
281	3	27-2000	Entertainers and Performers, Sports and Related Workers	1,510	1,620	7.3% -s-	110	2,092	2,202	Bostocondary training (non-dagrae)
282 283	4	27-2011 27-2012	Actors Producers and Directors	-s- 79	-s- 79	0.0%	-s- 0	-s- 77	 -s- High school diploma or equivalent 77 Bachelor's degree 	Postsecondary training (non-degree) Bachelor's degree
284	4	27-2012	Coaches and Scouts	818	898	9.8%	80	1.252	1,332 High school diploma or equivalent	Bachelor's degree
285	4	27-2023	Umpires, Referees, and Other Sports Officials	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
286	4	27-2041	Music Directors and Composers	174	178	2.3%	4	210	214 Bachelor's degree	Master's degree
287	4	27-2042	Musicians and Singers	369	391	6.0%	22	453	475 High school diploma or equivalent	High school diploma or equivalent
288	3	27-3000	Media and Communication Workers	-S-	-s-	-s-	-s-	-S-	-S-	
289	4	27-3011	Radio and Television Announcers	30	20	-33.3%	-10	29	19 Bachelor's degree	Bachelor's degree
290	4	27-3012 27-3022	Public Address System and Other Announcers	33 42	36 27	9.1%	3 -15	40 42	43 High school diploma or equivalent	Bachelor's degree
291 292	4	27-3022	Reporters and Correspondents Public Relations Specialists	42 310	336	-35.7% 8.4%	-15 26	42 335	27 Bachelor's degree 361 Bachelor's degree	Bachelor's degree Bachelor's degree
232	-	21 3031	. adile relations operation	310	550	J.4 /0	20	333	oo i badiididi 3 degree	Daditoloi d'acgree

				2019	2029	Percent	Employment	Replacement	Total	
293	Level 4	27-3041	Standard Occupational Classification Title Editors	Employment 109	Employment 103	Change -5.5%	Change -6	Openings 116		Competitive Education Bachelor's degree
293	4	27-3041	Technical Writers	109 -s-	103 -s-	-5.5% -S-	-6 -S-	116 -S-		sachelor's degree Bachelor's degree
295	4	27-3043	Writers and Authors	31	29	-6.5%	-2	31		Bachelor's degree
296	4	27-3091	Interpreters and Translators	-S-	-S-	-S-	-S-	-S-		Bachelor's degree
297	4	27-3099	Media and Communication Workers, All Other	40	42	5.0%	2	41	· ·	Bachelor's degree
298 299	3 4	27-4000 27-4011	Media and Communication Equipment Workers Audio and Video Equipment Technicians	-s- 49	-s- 60	-s- 22.5%	-s- 11	-s- 58	-s- 69 Postsecondary training (non-degree) P	Postsecondary training (non-degree)
300	4	27-4011	Broadcast Technicians	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree) P	
301	4	27-4014	Sound Engineering Technicians	-S-	-s-	-S-	-s-	-s-	-s- Postsecondary training (non-degree) P	
302	4	27-4021	Photographers	145	103	-29.0%	-42	122		Bachelor's degree
303 304	4 4	27-4031 27-4032	Camera Operators, Television, Video, and Motion Picture Film and Video Editors	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-s- -s-	3	Associate's degree Bachelor's degree
304	4	27-4032	Media and Communication Equipment Workers, All Other	-S- -S-	-S- -S-	-S- -S-	-S- -S-	-s- -s-		ligh school diploma or equivalent
306			Health Care	23,420	26,633	13.7%	3,213	19,652	22,865	g
307	2	29-0000	Healthcare Practitioners and Technical Occupations	14,288	16,084	12.6%	1,796	8,458	10,254	
308	3	29-1000	Health Diagnosing and Treating Practitioners	9,115	10,327	13.3%	1,212	4,624	5,836	North and the conference of the control of the cont
309 310	4	29-1011 29-1021	Chiropractors Dentists, General	101 185	96 206	-5.0% 11.4%	-5 21	26 59		Ooctoral or professional degree Ooctoral or professional degree
311	4	29-1021	Orthodontists	-S-	-S-	-S-	-S-	-S-		Octoral or professional degree
312	4	29-1029	Dentists, All Other Specialists	-S-	-s-	-S-	-s-	-s-		Octoral or professional degree
313	4	29-1031	Dietitians and Nutritionists	136	152	11.8%	16	91		Bachelor's degree
314	4	29-1041	Optometrists	60	65	8.3%	5	19		Octoral or professional degree
315 316	4	29-1051 29-1061	Pharmacists Anesthesiologists	600 -s-	615 -s-	2.5% -s-	15 -s-	273 -s-		Ooctoral or professional degree Ooctoral or professional degree
317	4	29-1062	Family and General Practitioners	-8-	-s-	-S-	-S-	-s-		Octoral or professional degree
318	4	29-1063	Internists, General	-S-	-S-	-S-	-S-	-S-		Octoral or professional degree
319		29-1064	Obstetricians and Gynecologists	-S-	-S-	-S-	-S-	-S-		Ooctoral or professional degree
320	4	29-1065 29-1066	Pediatricians, General	75	81	8.0%	6	23 7		Octoral or professional degree
321 322	4	29-1066	Psychiatrists Surgeons	25 -s-	27 -s-	8.0% -s-	2 -s-	/ -s-		Ooctoral or professional degree Ooctoral or professional degree
323	4	29-1069	Physicians and Surgeons, All Other	756	816	7.9%	60	230		Octoral or professional degree
324	4	29-1071	Physician Assistants	113	145	28.3%	32	74	106 Master's degree N	Master's degree
325	4	29-1081	Podiatrists	-S-	-S-	-S-	-S-	-S-		Ooctoral or professional degree
326	4 4	29-1122 29-1123	Occupational Therapists	290 520	323	11.4% 15.6%	33 81	172 234		Octoral or professional degree
327 328	4	29-1123	Physical Therapists Radiation Therapists	520 -S-	601 -s-	15.6% -S-	-S-	234 -S-		Ooctoral or professional degree Bachelor's degree
329	4	29-1125	Recreational Therapists	84	90	7.1%	6	42		Bachelor's degree
330	4	29-1126	Respiratory Therapists	-\$-	-S-	-S-	-s-	-s-	-s- Associate's degree B	Bachelor's degree
331	4	29-1127	Speech-Language Pathologists	273	343	25.6%	70	165		Ooctoral or professional degree
332 333	4	29-1128 29-1129	Exercise Physiologists Therapists, All Other	-S- -S-	-s- -s-	-s- -s-	-s- -s-	-S- -S-		Bachelor's degree Master's degree
334	4	29-1123	Veterinarians	158	186	17.7%	28	66		Poctoral or professional degree
335	4	29-1141	Registered Nurses	4,615	5,303	14.9%	688	2,648		Bachelor's degree
336	4	29-1151	Nurse Anesthetists	-\$-	-S-	-S-	-S-	-S-		Master's degree
337	4	29-1161	Nurse Midwives	-S-	-S-	-S-	-S-	-S-		Master's degree
338 339	4	29-1171 29-1181	Nurse Practitioners Audiologists	171 41	213 45	24.6% 9.8%	42 4	103 17		Master's degree Doctoral or professional degree
340	4	29-1199	Health Diagnosing and Treating Practitioners, All Other	82	96	17.1%	14	41		Octoral or professional degree
341	3	29-2000	Health Technologists and Technicians	4,838	5,389	11.4%	551	3,638	4,189	-
342	4	29-2010	Clinical Laboratory Technologists and Technicians	208	227	9.1%	19	137		Bachelor's degree
343 344	4	29-2021 29-2031	Dental Hygienists Cardiovascular Technologists and Technicians	539 84	626 92	16.1% 9.5%	87 8	390 49		Bachelor's degree Associate's degree
345	4	29-2031	Diagnostic Medical Sonographers	130	160	23.1%	30	80		Bachelor's degree
346	4	29-2033	Nuclear Medicine Technologists	24	26	8.3%	2	14		Bachelor's degree
347	4	29-2034	Radiologic Technologists	382	423	10.7%	41	221		Bachelor's degree
348	4	29-2035	Magnetic Resonance Imaging Technologists	60	67	11.7%	7	35		ssociate's degree
349 350	4	29-2041 29-2051	Emergency Medical Technicians and Paramedics Dietetic Technicians	418 15	449 16	7.4% 6.7%	31 1	288 12	319 Postsecondary training (non-degree) P 13 High school diploma or equivalent A	ostsecondary training (non-degree) ssociate's degree
351	4	29-2052	Pharmacy Technicians	721	767	6.4%	46	600	646 Postsecondary training (non-degree) P	
352	4	29-2053	Psychiatric Technicians	-S-	-s-	-S-	-s-	-s-	-s- Postsecondary training (non-degree) A	
353	4	29-2055	Surgical Technologists	125	143	14.4%	18	108	126 Postsecondary training (non-degree) A	
354 355	4	29-2056 29-2057	Veterinary Technologists and Technicians	217 53	264 59	21.7% 11.3%	47 6	194 45		Associate's degree
356	4	29-2057	Ophthalmic Medical Technicians Licensed Practical and Licensed Vocational Nurses	822	911	10.8%	89	45 660	51 Postsecondary training (non-degree) P 749 Postsecondary training (non-degree) P	
357	4	29-2071	Medical Records and Health Information Technicians	185	200	8.1%	15	123	138 Postsecondary training (non-degree) A	
358	4	29-2081	Opticians, Dispensing	-S-	-S-	-S-	-8-	-S-	-s- High school diploma or equivalent P	Postsecondary training (non-degree)
359	4	29-2091	Orthotists and Prosthetists	-s-	-S-	-S-	-S-	-S-		Bachelor's degree
360 361	4	29-2092 29-2099	Hearing Aid Specialists	69 239	79 277	14.5% 15.9%	10 38	50 175		digh school diploma or equivalent
361	3	29-2099	Health Technologists and Technicians, All Other Other Healthcare Practitioners and Technical Occupations	335	368	9.9%	38	175 196	213 Postsecondary training (non-degree) P 229	osisecondary training (non-degree)
363	4	29-9011	Occupational Health and Safety Specialists	185	198	7.0%	13	108	220	Bachelor's degree
364	4	29-9012	Occupational Health and Safety Technicians	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree B	Bachelor's degree
365	4	29-9091	Athletic Trainers	62	73	17.7%	11	37		Master's degree
366 367	4 4	29-9092 29-9099	Genetic Counselors Healthcare Practitioners and Technical Workers, All Other	-S- 69	-s- 78	-s- 13.0%	-s- 9	-s- 41		Master's degree Associate's degree
307	-	20 3033	realitione i raditioners and reconflict Workers, All Other	69	10	13.070	9		oo naadalata a degree A	accordic a degree

	soc	soc		2019	2029	Percent	Employment	Replacement	Total
			Standard Occupational Classification Title	Employment		Change	Change	Openings	Openings Typical Entry-Level Education Competitive Education
368 369	2	31-0000 31-1000	Healthcare Support Occupations	9,132	10,549 5,278	15.5% 14.1%	1,417 654	11,194	12,611 6,203
370	4	31-1000	Nursing, Psychiatric, and Home Health Aides Home Health Aides	4,624 -s-	5,278 -S-	14.1% -S-	-S-	5,549 -s-	-s- Less than high school Postsecondary training (non-degree)
371	4	31-1011	Psychiatric Aides	1,333	1,473	10.5%	140	1,572	1,712 High school diploma or equivalent High school diploma or equivalent
372	4	31-1014	Nursing Assistants	2,029	2,289	12.8%	260	2,420	2,680 Postsecondary training (non-degree) Postsecondary training (non-degree)
373	4	31-1015	Orderlies	-S-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
374	3	31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	226	279	23.5%	53	306	359
375	4	31-2011	Occupational Therapy Assistants	-S-	-S-	-S-	-\$-	-S-	-s- Associate's degree Associate's degree
376 377	4	31-2012	Occupational Therapy Aides	-S-	-S-	-S-	-S-	-s- 158	-s- High school diploma or equivalent Postsecondary training (non-degree)
378	4	31-2021 31-2022	Physical Therapist Assistants Physical Therapist Aides	111 71	144 82	29.7% 15.5%	33 11	95	191 Associate's degree Associate's degree 106 High school diploma or equivalent Associate's degree
379	3	31-9000	Other Healthcare Support Occupations	4,282	4,992	16.6%	710	5,339	6,049
380	4	31-9011	Massage Therapists	385	461	19.7%	76	493	569 Postsecondary training (non-degree) Postsecondary training (non-degree)
381	4	31-9091	Dental Assistants	836	971	16.2%	135	1,012	1,147 Postsecondary training (non-degree) Postsecondary training (non-degree)
382	4	31-9092	Medical Assistants	2,008	2,411	20.1%	403	2,434	2,837 Postsecondary training (non-degree) Postsecondary training (non-degree)
383	4	31-9093	Medical Equipment Preparers	142	158	11.3%	16	171	187 Postsecondary training (non-degree) Postsecondary training (non-degree)
384	4	31-9094	Medical Transcriptionists	114	97	-14.9%	-17	147 149	130 Postsecondary training (non-degree) Associate's degree
385 386	4 4	31-9095 31-9096	Pharmacy Aides Veterinary Assistants and Laboratory Animal Caretakers	123 223	110 271	-10.6% 21.5%	-13 48	398	136 High school diploma or equivalent 446 High school diploma or equivalent Postsecondary training (non-degree)
387	4	31-9097	Phlebotomists	144	168	16.7%	24	165	189 Postsecondary training (non-degree) Postsecondary training (non-degree)
388	4	31-9099	Healthcare Support Workers, All Other	307	345	12.4%	38	370	408 High school diploma or equivalent Postsecondary training (non-degree)
389			Service	52,302	58,979	12.8%	6,677	83,729	90,406
390	2	33-0000	Protective Service Occupations	5,225	5,522	5.7%	297	5,697	5,994
391	3	33-1000	Supervisors of Protective Service Workers	548	579	5.7%	31	390	421
392	4	33-1011	First-Line Supervisors of Correctional Officers	86	84	-2.3%	-2	60	58 High school diploma or equivalent Bachelor's degree
393 394	4 4	33-1012 33-1021	First-Line Supervisors of Police and Detectives First-Line Supervisors of Fire Fighting and Prevention Workers	222 152	239 163	7.7% 7.2%	17 11	143 100	160 High school diploma or equivalent 111 High school diploma or equivalent Bachelor's degree Bachelor's degree
394	4	33-1021	First-Line Supervisors of Protective Service Workers, All Other	88	93	5.7%	5	87	92 High school diploma or equivalent Bachelor's degree
396	3	33-2000	Fire Fighting and Prevention Workers	652	712	9.2%	60	469	529
397	4	33-2011	Firefighters	634	691	9.0%	57	451	508 Postsecondary training (non-degree) Associate's degree
398	4	33-2021	Fire Inspectors and Investigators	-S-	-s-	-S-	-\$-	-S-	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
399	4	33-2022	Forest Fire Inspectors and Prevention Specialists	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent Associate's degree
400	3	33-3000	Law Enforcement Workers	2,301	2,356	2.4%	55	1,842	1,897
401	4	33-3011	Bailiffs	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
402	4	33-3012	Correctional Officers and Jailers	1,192	1,167	-2.1%	-25	1,040	1,015 High school diploma or equivalent Postsecondary training (non-degree)
403 404	4	33-3021 33-3041	Detectives and Criminal Investigators Parking Enforcement Workers	80 12	85 8	6.3% -33.3%	5 -4	53 7	58 Associate's degree Bachelor's degree 3 High school diploma or equivalent High school diploma or equivalent
404	4	33-3041	Police and Sheriff's Patrol Officers	1,012	1,091	-33.3% 7.8%	-4 79	738	817 High school diploma or equivalent 817 High school diploma or equivalent Associate's degree
406	4	33-3052	Transit and Railroad Police	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
407	3	33-9000	Other Protective Service Workers	1,724	1,875	8.8%	151	2,996	3,147
408	4	33-9011	Animal Control Workers	-s-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
409	4	33-9021	Private Detectives and Investigators	102	111	8.8%	9	93	102 Associate's degree Associate's degree
410	4	33-9031	Gaming Surveillance Officers and Gaming Investigators	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
411	4	33-9032	Security Guards	680	735	8.1%	55	911	966 High school diploma or equivalent High school diploma or equivalent
412 413	4	33-9091 33-9092	Crossing Guards Lifequards, Ski Patrol, and Other Recreational Protective Service Workers	401 312	447 332	11.5% 6.4%	46 20	695 778	741 High school diploma or equivalent 798 High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
413	4	33-9092	Protective Service Workers, All Other	182	195	7.1%	13	455	468 High school diploma or equivalent High school diploma or equivalent
415	2	35-0000	Food Preparation and Serving Related Occupations	22,919	25,364	10.7%	2,445	41,502	43,947
416	3	35-1000	Supervisors of Food Preparation and Serving Workers	1,817	1,985	9.3%	168	2,869	3,037
417	4	35-1011	Chefs and Head Cooks	143	159	11.2%	16	198	214 Postsecondary training (non-degree) Postsecondary training (non-degree)
418	4	35-1012	First-Line Supervisors of Food Preparation and Serving Workers	1,674	1,826	9.1%	152	2,671	2,823 High school diploma or equivalent Postsecondary training (non-degree)
419	3	35-2000	Cooks and Food Preparation Workers	5,026	5,577	11.0%	551	7,921	8,472
420	4	35-2011	Cooks, Fast Food	542	484	-10.7%	-58	725	667 Less than high school High school diploma or equivalent
421 422	4 4	35-2012 35-2013	Cooks, Institution and Cafeteria Cooks, Private Household	875 -s-	960 -s-	9.7% -s-	85 -S-	1,298 -s-	1,383 Less than high school High school diploma or equivalent
422	4	35-2013	Cooks, Private Household Cooks, Restaurant	2,169	2,585	19.2%	-s- 416	3,363	-s- Postsecondary training (non-degree) Postsecondary training (non-degree) 3,779 Less than high school High school diploma or equivalent
424	4	35-2014	Cooks, Short Order	126	145	15.1%	19	192	211 Less than high school High school diploma or equivalent
425	4	35-2019	Cooks, All Other	-S-	-S-	-S-	-S-	-S-	-s- Less than high school High school diploma or equivalent
426	4	35-2021	Food Preparation Workers	1,294	1,377	6.4%	83	2,310	2,393 Less than high school High school diploma or equivalent
427	3	35-3000	Food and Beverage Serving Workers	13,666	15,253	11.6%	1,587	26,371	27,958
428	4	35-3011	Bartenders	1,029	1,120	8.8%	91	1,890	1,981 Less than high school Postsecondary training (non-degree)
429	4	35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	7,731	8,902	15.2%	1,171	14,809	15,980 Less than high school High school diploma or equivalent
430	4	35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1,005	1,051	4.6%	46	2,231	2,277 Less than high school High school diploma or equivalent
431 432	4	35-3031	Waiters and Waitresses	3,090 811	3,234 946	4.7% 16.7%	144 135	6,069	6,213 Less than high school High school diploma or equivalent
432 433	3	35-3041 35-9000	Food Servers, Nonrestaurant Other Food Preparation and Serving Related Workers	811 2,410	946 2,549	16.7% 5.8%	135 139	1,372 4,341	1,507 Less than high school High school diploma or equivalent 4,480
433	4	35-9000	Dining Room and Cafeteria Attendants and Bartender Helpers	624	2,549 693	11.1%	69	1,125	1,194 Less than high school High school diploma or equivalent
435	4	35-9021	Dishwashers	1,268	1,288	1.6%	20	2,028	2,048 Less than high school High school diploma or equivalent
436	4	35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	430	468	8.8%	38	1,028	1,066 Less than high school High school diploma or equivalent
437	4	35-9099	Food Preparation and Serving Related Workers, All Other	88	100	13.6%	12	160	172 Less than high school High school diploma or equivalent
438	2	37-0000	Building and Grounds Cleaning and Maintenance Occupations	8,798	9,996	13.6%	1,198	12,209	13,407
439	3	37-1000	Supervisors of Building and Grounds Cleaning and Maintenance Workers	651	758	16.4%	107	775	882
440	4	37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	170	193	13.5%	23	206	229 High school diploma or equivalent Postsecondary training (non-degree)
441	4	37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	481	565	17.5%	84	569	653 High school diploma or equivalent Postsecondary training (non-degree)

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D	SOC	SOC	Chandred Conventional Classification Title	2019	2029	Percent	Employment	Replacement	Total	Commentative Education
442	Level 3	Code 37-2000	Standard Occupational Classification Title Building Cleaning and Pest Control Workers	Employment 5,018	Employment 5,627	Change 12.1%	Change 609	Openings 7,070	Openings Typical Entry-Level Education 7.679	Competitive Education
443	4	37-2000	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	3,255	3,614	11.0%	359	4,523	4,882 Less than high school	High school diploma or equivalent
444	4	37-2012	Maids and Housekeeping Cleaners	1,631	1,859	14.0%	228	2,350	2,578 Less than high school	High school diploma or equivalent
445	4	37-2021	Pest Control Workers	132	154	16.7%	22	197	219 High school diploma or equivalent	High school diploma or equivalent
446	3	37-3000	Grounds Maintenance Workers	3,129	3,611	15.4%	482	4,364	4,846	
447	4	37-3011	Landscaping and Groundskeeping Workers	2,292	2,677	16.8%	385	3,218	3,603 Less than high school	High school diploma or equivalent
448	4	37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	308	339	10.1%	31	419	450 High school diploma or equivalent	High school diploma or equivalent
449 450	4	37-3013 37-3019	Tree Trimmers and Pruners Grounds Maintenance Workers, All Other	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	 -s- High school diploma or equivalent -s- Less than high school 	High school diploma or equivalent High school diploma or equivalent
451	2	39-0000	Personal Care and Service Occupations	15,360	18,097	17.8%	2,737	24,321	27,058	riigit school diploma of equivalent
452	3	39-1000	Supervisors of Personal Care and Service Workers	642	719	12.0%	77	679	756	
453	4	39-1010	First-Line Supervisors of Gaming Workers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
454	4	39-1021	First-Line Supervisors of Personal Service Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
455	3	39-2000	Animal Care and Service Workers	337	420	24.6%	83	600	683	
456 457	4	39-2011 39-2021	Animal Trainers Nonfarm Animal Caretakers	71 266	92 328	29.6% 23.3%	21 62	119 481	140 High school diploma or equivalent 543 Less than high school	High school diploma or equivalent Postsecondary training (non-degree)
458	3	39-3000	Entertainment Attendants and Related Workers	482	534	10.8%	52	1.114	1,166	r ostsecondary training (non-degree)
459	4	39-3011	Gaming Dealers	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
460	4	39-3012	Gaming and Sports Book Writers and Runners	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
461	4	39-3019	Gaming Service Workers, All Other	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	High school diploma or equivalent
462	4	39-3021	Motion Picture Projectionists	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
463	4	39-3031	Ushers, Lobby Attendants, and Ticket Takers	76	85	11.8%	9	196	205 Less than high school	High school diploma or equivalent
464 465	4 4	39-3091 39-3092	Amusement and Recreation Attendants Costume Attendants	318 -s-	340 -s-	6.9%	22	758 -s-	780 Less than high school	High school diploma or equivalent
466	4	39-3092	Locker Room, Coatroom, and Dressing Room Attendants	-s- -s-	-S- -S-	-S- -S-	-S- -S-	-s- -s-	 -s- High school diploma or equivalent -s- High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
467	4	39-3099	Entertainment Attendants and Related Workers, All Other	-S-	-s-	-s-	-s-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
468	3	39-4000	Funeral Service Workers	55	56	1.8%	1	71	72	riigit school diploma of equivalent
469	4	39-4021	Funeral Attendants	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
470	4	39-4031	Morticians, Undertakers, and Funeral Directors	-S-	-S-	-S-	-S-	-S-	-s- Associate's degree	Associate's degree
471	3	39-5000	Personal Appearance Workers	1,121	1,189	6.1%	68	1,409	1,477	
472	4	39-5012	Hairdressers, Hairstylists, and Cosmetologists	852	902	5.9%	50	1,092	1,142 Postsecondary training (non-degree	
473	4	39-5092	Manicurists and Pedicurists	226	242	7.1%	16	267	283 Postsecondary training (non-degree	
474	4	39-5094	Skincare Specialists	43	45	4.7%	2	50	52 Postsecondary training (non-degree	e) Postsecondary training (non-degree)
475 476	3 4	39-6000	Baggage Porters, Bellhops, and Concierges	-S-	-s-	-S-	-s-	-s-	-s- -s- High school diploma or equivalent	High school diploms or equivalent
477	4	39-6011 39-6012	Baggage Porters and Bellhops Concierges	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
478	3	39-7000	Tour and Travel Guides	-S-	-S-	-S-	-s-	-S-	-S-	riigit scribbi diploma of equivalent
479	4	39-7010	Tour and Travel Guides	-S-	-S-	-S-	-s-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
480	3	39-9000	Other Personal Care and Service Workers	12,586	15,038	19.5%	2,452	20,212	22,664	
481	4	39-9011	Childcare Workers	1,650	1,969	19.3%	319	2,700	3,019 High school diploma or equivalent	Postsecondary training (non-degree)
482	4	39-9021	Personal Care Aides	4,509	5,567	23.5%	1,058	7,022	8,080 Less than high school	High school diploma or equivalent
483 484	4 4	39-9031 39-9032	Fitness Trainers and Aerobics Instructors Recreation Workers	444 937	496	11.7% 17.9%	52 168	780	832 High school diploma or equivalent	Postsecondary training (non-degree)
484 485	4	39-9032 39-9041	Recreation workers Residential Advisors	937 190	1,105 218	17.9%	168	1,696 310	1,864 High school diploma or equivalent 338 High school diploma or equivalent	Bachelor's degree Bachelor's degree
486	4	39-9099	Personal Care and Service Workers, All Other	4,856	5,683	17.0%	827	7,704	8,531 High school diploma or equivalent	High school diploma or equivalent
487		00 0000	Sales and Related	26,022	26,800	3.0%	778	36,478	37,256	riight conton diploma of equivalent
488	2	41-0000	Sales and Related Occupations	26,022	26,800	3.0%	778	36,478	37,256	
489	3	41-1000	Supervisors of Sales Workers	3,832	3,963	3.4%	131	4,167	4,298	
490	4	41-1011	First-Line Supervisors of Retail Sales Workers	3,039	3,123	2.8%	84	3,387	3,471 High school diploma or equivalent	Postsecondary training (non-degree)
491	4	41-1012	First-Line Supervisors of Non-Retail Sales Workers	793	840	5.9%	47	780	827 High school diploma or equivalent	Associate's degree
492 493	3	41-2000 41-2011	Retail Sales Workers Cashiers	13,862 5,150	13,948 5,007	0.6% -2.8%	86 -143	22,232 9,581	22,318 9,438 Less than high school	High school diploms or equivalent
494	4	41-2011	Gaming Change Persons and Booth Cashiers	5,150 -S-	5,007 -S-	-2.0% -S-	-143 -S-	9,561 -S-	-s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
495	4	41-2012	Counter and Rental Clerks	587	627	6.8%	40	778	818 Less than high school	High school diploma or equivalent
496	4	41-2022	Parts Salespersons	-S-	-s-	-s-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
497	4	41-2031	Retail Salespersons	7,524	7,648	1.7%	124	11,081	11,205 Less than high school	High school diploma or equivalent
498	3	41-3000	Sales Representatives, Services	2,159	2,303	6.7%	144	2,517	2,661	
499	4	41-3011	Advertising Sales Agents	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
500	4	41-3021	Insurance Sales Agents	600	672	12.0%	72	618	690 Postsecondary training (non-degree	
501 502	4	41-3031 41-3041	Securities, Commodities, and Financial Services Sales Agents Travel Agents	404 -s-	426 -s-	5.5% -s-	22 -s-	393 -s-	415 Bachelor's degree	Bachelor's degree
502	4	41-3041	Sales Representatives, Services, All Other	1.006	1.073	6.7%	67	1.316	 -s- High school diploma or equivalent 1,383 High school diploma or equivalent 	Postsecondary training (non-degree) Postsecondary training (non-degree)
	3	41-4000	Sales Representatives, Wholesale and Manufacturing	1,982	2,222	12.1%	240	2,206	2.446	r ostsecondary training (non degree)
505	4	41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	232	259	11.6%	27	258	285 Bachelor's degree	Bachelor's degree
506	4	41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,750	1,963	12.2%	213	1,948	2,161 High school diploma or equivalent	Associate's degree
507	3	41-9000	Other Sales and Related Workers	4,187	4,364	4.2%	177	5,356	5,533	-
508	4	41-9011	Demonstrators and Product Promoters	1,036	1,171	13.0%	135	1,890	2,025 High school diploma or equivalent	High school diploma or equivalent
509	4	41-9012	Models	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
510	4	41-9021	Real Estate Brokers	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
511 512	4 4	41-9022 41-9031	Real Estate Sales Agents	1,613	1,746	8.3% -s-	133 -s-	1,596	1,729 Postsecondary training (non-degree	
512	4	41-9031	Sales Engineers Telemarketers	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-s- -s-	-s- Bachelor's degree -s- Less than high school	Bachelor's degree High school diploma or equivalent
	4	41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	137	94	-31.4%	-43	142	99 High school diploma or equivalent	High school diploma or equivalent
	4	41-9099	Sales and Related Workers, All Other	193	207	7.3%	14	261	275 High school diploma or equivalent	High school diploma or equivalent
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Oreg			arment, workloide and Economic Nesearch Division							
		SOC	Our last Occupation to the Control of the Control o	2019	2029	Percent	Employment	Replacement	Total	O
<u>Row</u> 516	Level	Code	Standard Occupational Classification Title Office and Administrative Support	27,119	Employment 37,751	Change 1.7%	Change 632	Openings 43,732	Openings Typical Entry-Level Education 44,364	Competitive Education
517	2	43-0000	Office and Administrative Support Occupations	37,119	37,751	1.7%	632	43,732	44,364	
518	3	43-1000	Supervisors of Office and Administrative Support Workers	-S-	-s-	-S-	-S-	-S-	-S-	
519	4	43-1011	First-Line Supervisors of Office and Administrative Support Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Associate's degree
520	3	43-2000	Communications Equipment Operators	-S-	-s-	-S-	-s-	-s-	-S-	I Park and a state of the same and a state of
521 522	4	43-2011 43-3000	Switchboard Operators, Including Answering Service Financial Clerks	31 5,339	26 5.312	-16.1% -0.5%	-5 -27	35 6,153	30 High school diploma or equivalent 6.126	High school diploma or equivalent
523	4	43-3000	Bill and Account Collectors	5,339	5,312	-0.5% -4.2%	-2 <i>1</i> -5	139	134 High school diploma or equivalent	High school diploma or equivalent
524	4	43-3021	Billing and Posting Clerks	463	514	11.0%	51	530	581 High school diploma or equivalent	High school diploma or equivalent
525	4	43-3031	Bookkeeping, Accounting, and Auditing Clerks	3,794	3,794	0.0%	0	4,420	4,420 Postsecondary training (non-degree	
526	4	43-3041	Gaming Cage Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	High school diploma or equivalent
527	4	43-3051	Payroll and Timekeeping Clerks	299	296	-1.0%	-3	327	324 High school diploma or equivalent	Postsecondary training (non-degree)
528 529	4	43-3061 43-3071	Procurement Clerks Tellers	106 513	106 439	0.0% -14.4%	0 -74	110 573	110 High school diploma or equivalent 499 High school diploma or equivalent	Bachelor's degree High school diploma or equivalent
530	4	43-3099	Financial Clerks, All Other	-S-	-S-	-14.470	-7-4 -S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
531	3	43-4000	Information and Record Clerks	8,550	8,975	5.0%	425	11,009	11,434	9
532	4	43-4011	Brokerage Clerks	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
533	4	43-4021	Correspondence Clerks	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
534	4	43-4031	Court, Municipal, and License Clerks	432	470	8.8%	38 -1	418	456 High school diploma or equivalent	Postsecondary training (non-degree)
535 536	4	43-4041 43-4051	Credit Authorizers, Checkers, and Clerks Customer Service Representatives	17 3,090	16 3,232	-5.9% 4.6%	-1 142	16 4,213	15 High school diploma or equivalent 4,355 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
537	4	43-4061	Eligibility Interviewers, Government Programs	3,090	3,232	8.8%	31	349	380 High school diploma or equivalent	Postsecondary training (non-degree)
538	4	43-4071	File Clerks	184	166	-9.8%	-18	216	198 High school diploma or equivalent	High school diploma or equivalent
539	4	43-4081	Hotel, Motel, and Resort Desk Clerks	120	124	3.3%	4	207	211 High school diploma or equivalent	High school diploma or equivalent
540	4	43-4111	Interviewers, Except Eligibility and Loan	526	542	3.0%	16	657	673 High school diploma or equivalent	High school diploma or equivalent
541	4	43-4121	Library Assistants, Clerical	102	97	-4.9%	-5	150	145 High school diploma or equivalent	Postsecondary training (non-degree)
542 543	4	43-4131 43-4141	Loan Interviewers and Clerks New Accounts Clerks	276 129	280 119	1.5% -7.8%	-10	282 143	286 High school diploma or equivalent133 High school diploma or equivalent	High school diploma or equivalent Bachelor's degree
544	4	43-4151	Order Clerks	171	170	-0.6%	-10	196	195 High school diploma or equivalent	Postsecondary training (non-degree)
545	4	43-4161	Human Resources Assistants, Except Payroll and Timekeeping	125	125	0.0%	0	142	142 High school diploma or equivalent	Postsecondary training (non-degree)
546	4	43-4171	Receptionists and Information Clerks	2,052	2,203	7.4%	151	2,857	3,008 High school diploma or equivalent	High school diploma or equivalent
547	4	43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	69	74	7.3%	5	81	86 High school diploma or equivalent	High school diploma or equivalent
548	4	43-4199	Information and Record Clerks, All Other	859	922	7.3%	63	1,030	1,093 High school diploma or equivalent	High school diploma or equivalent
549 550	3 4	43-5000 43-5011	Material Recording, Scheduling, Dispatching, and Distributing Workers Cargo and Freight Agents	6,267 63	6,750 76	7.7% 20.6%	483 13	7,383 66	7,866 79 High school diploma or equivalent	High school diploma or equivalent
551	4	43-5011	Couriers and Messengers	163	199	20.6%	36	172	208 High school diploma or equivalent	High school diploma or equivalent
552	4	43-5031	Police, Fire, and Ambulance Dispatchers	214	232	8.4%	18	211	229 High school diploma or equivalent	High school diploma or equivalent
553	4	43-5032	Dispatchers, Except Police, Fire, and Ambulance	390	431	10.5%	41	388	429 High school diploma or equivalent	High school diploma or equivalent
554	4	43-5041	Meter Readers, Utilities	38	34	-10.5%	-4	35	31 High school diploma or equivalent	High school diploma or equivalent
555	4	43-5051	Postal Service Clerks	135	150	11.1%	15	109	124 High school diploma or equivalent	High school diploma or equivalent
556 557	4	43-5052 43-5053	Postal Service Mail Carriers	553 33	612 35	10.7% 6.1%	59 2	432 29	491 High school diploma or equivalent	High school diploma or equivalent
558	4	43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators Production, Planning, and Expediting Clerks	460	511	11.1%	2 51	506	31 High school diploma or equivalent 557 High school diploma or equivalent	High school diploma or equivalent Bachelor's degree
559	4	43-5071	Shipping, Receiving, and Traffic Clerks	957	1.008	5.3%	51	975	1,026 High school diploma or equivalent	High school diploma or equivalent
560	4	43-5081	Stock Clerks and Order Fillers	3,185	3,377	6.0%	192	4,368	4,560 Less than high school	High school diploma or equivalent
561	4	43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	76	85	11.8%	9	92	101 High school diploma or equivalent	High school diploma or equivalent
562	3	43-6000	Secretaries and Administrative Assistants	7,351	7,107	-3.3%	-244	8,092	7,848	
563	4	43-6011	Executive Secretaries and Executive Administrative Assistants	813	669	-17.7%	-144	830	686 High school diploma or equivalent	Associate's degree
564 565	4 4	43-6012 43-6013	Legal Secretaries Medical Secretaries	284 1,688	230 1,934	-19.0% 14.6%	-54 246	288 2,027	234 Postsecondary training (non-degree 2,273 High school diploma or equivalent	Postsecondary training (non-degree)
566	4	43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	4,566	4,274	-6.4%	-292	4,947	4,655 High school diploma or equivalent	Associate's degree
567	3	43-9000	Other Office and Administrative Support Workers	7,674	7,651	-0.3%	-23	9,051	9,028	7 Boodiato o dogreo
568	4	43-9011	Computer Operators	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
569	4	43-9021	Data Entry Keyers	271	209	-22.9%	-62	277	215 High school diploma or equivalent	High school diploma or equivalent
570	4	43-9022	Word Processors and Typists	15	10	-33.3%	-5	15	10 High school diploma or equivalent	Postsecondary training (non-degree)
571 572	4	43-9031 43-9041	Desktop Publishers	73 319	73 341	0.0% 6.9%	0	85 328	85 Postsecondary training (non-degree	
573	4	43-9051	Insurance Claims and Policy Processing Clerks Mail Clerks and Mail Machine Operators, Except Postal Service	106	103	-2.8%	22 -3	115	350 High school diploma or equivalent 112 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
574	4	43-9061	Office Clerks, General	5,670	5,647	-0.4%	-23	6,773	6,750 High school diploma or equivalent	Postsecondary training (non-degree)
575	4	43-9071	Office Machine Operators, Except Computer	75	68	-9.3%	-7	91	84 High school diploma or equivalent	High school diploma or equivalent
576	4	43-9081	Proofreaders and Copy Markers	-S-	-s-	-S-	-s-	-s-	-s- High school diploma or equivalent	Bachelor's degree
577	4	43-9111	Statistical Assistants	41	35	-14.6%	-6	47	41 Bachelor's degree	Master's degree
578	4	43-9199	Office and Administrative Support Workers, All Other	1,094	1,156	5.7%	62	1,308	1,370 High school diploma or equivalent	High school diploma or equivalent
579	2	45-0000	Farming, Fishing, and Forestry	14,526	15,401	6.0%	875 875	24,266	25,141 25,141	
580 581	2	45-0000	Farming, Fishing, and Forestry Occupations Supervisors of Farming, Fishing, and Forestry Workers	14,526 818	15,401 866	6.0% 5.9%	48	24,266 1,244	1,292	
582	4	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	818	866	5.9%	48	1,244	1,292 High school diploma or equivalent	High school diploma or equivalent
583	3	45-2000	Agricultural Workers	11,869	12,743	7.4%	874	19,976	20,850	
584	4	45-2011	Agricultural Inspectors	84	90	7.1%	6	127	133 Bachelor's degree	Bachelor's degree
585	4	45-2021	Animal Breeders	-S-	-s-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
586	4	45-2041	Graders and Sorters, Agricultural Products	591	608	2.9%	17	877	894 Less than high school	High school diploma or equivalent
587 588	4	45-2091 45-2092	Agricultural Equipment Operators Farmworkers and Laborers, Crop, Nursery, and Greenhouse	971 9,304	1,062 10,005	9.4% 7.5%	91 701	1,660 15,763	1,751 High school diploma or equivalent 16,464 Less than high school	High school diploma or equivalent High school diploma or equivalent
589	4	45-2092 45-2093	Farmworkers and Laborers, Grop, Noisery, and Greenhouse Farmworkers, Farm, Ranch, and Aquacultural Animals	9,304 546	575	5.3%	29	916	945 Less than high school	High school diploma or equivalent
590	4	45-2099	Agricultural Workers, All Other	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent

Oreg	on Linpi	oyment bep	valuitetti, Workforce and Economic Nesearch Division							
		SOC		2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
591 592	3 4	45-4000 45-4011	Forest, Conservation, and Logging Workers Forest and Conservation Workers	1,839 -s-	1,792 -s-	-2.6% -s-	-47 -s-	3,046 -s-	2,999 -s- High school diploma or equivalent	High school diploma or equivalent
593	4	45-4011	Fallers	127	112	-11.8%	-s- -15	191	176 High school diploma or equivalent	High school diploma or equivalent
594	4	45-4022	Logging Equipment Operators	591	550	-6.9%	-41	913	872 High school diploma or equivalent	High school diploma or equivalent
595	4	45-4023	Log Graders and Scalers	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
596	4	45-4029	Logging Workers, All Other	304	273	-10.2%	-31	462	431 High school diploma or equivalent	High school diploma or equivalent
597		47.0000	Construction and Extraction	16,894	18,948	12.2%	2,054	19,479	21,533	
598 599	2	47-0000 47-1000	Construction and Extraction Occupations	16,894	18,948 1,150	12.2% 13.3%	2,054 135	19,479 1,125	21,533 1,260	
600	4	47-1000	Supervisors of Construction and Extraction Workers First-Line Supervisors of Construction Trades and Extraction Workers	1,015 1.015	1,150	13.3%	135	1,125	1,260 High school diploma or equivalent	Postsecondary training (non-degree)
601	3	47-2000	Construction Trades Workers	14,631	16,405	12.1%	1,774	16,721	18,495	r ostsecondary training (non degree)
602	4	47-2021	Brickmasons and Blockmasons	151	162	7.3%	11	156	167 High school diploma or equivalent	Postsecondary training (non-degree)
603	4	47-2022	Stonemasons	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
604	4	47-2031	Carpenters	3,286	3,658	11.3%	372	3,593	3,965 High school diploma or equivalent	Postsecondary training (non-degree)
605 606	4	47-2041 47-2042	Carpet Installers Floor Layers, Except Carpet, Wood, and Hard Tiles	194 -s-	198 -s-	2.1% -s-	4 -s-	191	195 Less than high school -s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
607	4	47-2042	Floor Sanders and Finishers	-5- -S-	-S-	-S-	-s- -s-	-S- -S-	-s- Less than high school	High school diploma or equivalent
608	4	47-2044	Tile and Marble Setters	204	253	24.0%	49	223	272 Less than high school	High school diploma or equivalent
609	4	47-2051	Cement Masons and Concrete Finishers	581	647	11.4%	66	645	711 Less than high school	High school diploma or equivalent
610	4	47-2061	Construction Laborers	3,137	3,499	11.5%	362	3,691	4,053 Less than high school	High school diploma or equivalent
611	4	47-2071	Paving, Surfacing, and Tamping Equipment Operators	138	155	12.3%	17	182	199 High school diploma or equivalent	High school diploma or equivalent
612	4	47-2072	Pile-Driver Operators	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
613 614	4	47-2073 47-2081	Operating Engineers and Other Construction Equipment Operators Drywall and Ceiling Tile Installers	1,057 187	1,160 195	9.7% 4.3%	103 8	1,278 190	1,381 High school diploma or equivalent 198 Less than high school	Postsecondary training (non-degree)
615	4	47-2081	Tapers	133	142	6.8%	9	136	145 Less than high school	High school diploma or equivalent High school diploma or equivalent
616	4	47-2111	Electricians	1,620	1,894	16.9%	274	2,036	2,310 High school diploma or equivalent	Postsecondary training (non-degree)
617	4	47-2121	Glaziers	89	97	9.0%	8	106	114 High school diploma or equivalent	Postsecondary training (non-degree)
618	4	47-2131	Insulation Workers, Floor, Ceiling, and Wall	160	165	3.1%	5	187	192 Less than high school	High school diploma or equivalent
619	4	47-2132	Insulation Workers, Mechanical	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
620	4	47-2141	Painters, Construction and Maintenance	1,814	2,040	12.5%	226	1,951	2,177 Less than high school	High school diploma or equivalent
621	4	47-2142	Paperhangers	-\$-	-S-	-S-	-S-	-\$-	-s- Less than high school	High school diploma or equivalent
622 623	4	47-2151 47-2152	Pipelayers Plumbers, Pipefitters, and Steamfitters	-s- 673	-s- 795	-s- 18.1%	-s- 122	-s- 815	 -s- High school diploma or equivalent 937 High school diploma or equivalent 	Postsecondary training (non-degree) Postsecondary training (non-degree)
624	4	47-2152	Plasterers and Stucco Masons	-S-	795 -S-	-S-	122 -\$-	-S-	-s- Less than high school	High school diploma or equivalent
625	4	47-2101	Reinforcing Iron and Rebar Workers	-s-	-s- -s-	-s-	-S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent
626	4	47-2181	Roofers	652	710	8.9%	58	703	761 Less than high school	High school diploma or equivalent
627	4	47-2211	Sheet Metal Workers	254	295	16.1%	41	297	338 High school diploma or equivalent	Postsecondary training (non-degree)
628	4	47-2221	Structural Iron and Steel Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
629	3	47-3000	Helpers, Construction Trades	327	375	14.7%	48	473	521	
630 631	4	47-3011 47-3012	HelpersBrickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	110	123 -s-	11.8% -s-	13	157	170 Less than high school	High school diploma or equivalent
632	4	47-3012	HelpersCarpenters HelpersElectricians	-s- 26	30	15.4%	-s- 4	-s- 38	-s- Less than high school42 High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
633	4	47-3014	HelpersPainters, Paperhangers, Plasterers, and Stucco Masons	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
634	4	47-3015	HelpersPipelayers, Plumbers, Pipefitters, and Steamfitters	69	83	20.3%	14	102	116 High school diploma or equivalent	High school diploma or equivalent
635	4	47-3016	HelpersRoofers	23	26	13.0%	3	33	36 Less than high school	High school diploma or equivalent
636	4	47-3019	Helpers, Construction Trades, All Other	28	33	17.9%	5	41	46 Less than high school	High school diploma or equivalent
637	3	47-4000	Other Construction and Related Workers	772	854	10.6%	82	952	1,034	
638 639	4	47-4011 47-4031	Construction and Building Inspectors Fence Erectors	192 -s-	217 -s-	13.0% -s-	25	253	278 High school diploma or equivalent	Associate's degree
640	4	47-4031	Hazardous Materials Removal Workers	-S- -S-	-s- -s-	-s- -s-	-s- -s-	-S- -S-	 -s- High school diploma or equivalent -s- High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
641	4	47-4051	Highway Maintenance Workers	227	248	9.3%	21	264	285 High school diploma or equivalent	High school diploma or equivalent
642	4	47-4061	Rail-Track Laying and Maintenance Equipment Operators	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
643	4	47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	70	83	18.6%	13	86	99 Less than high school	High school diploma or equivalent
644	4	47-4090	Miscellaneous Construction and Related Workers	73	80	9.6%	7	95	102 High school diploma or equivalent	High school diploma or equivalent
645	3	47-5000	Extraction Workers	149	164	10.1%	15	208	223	
646	4	47-5021	Earth Drillers, Except Oil and Gas	110	121	10.0%	11	154	165 High school diploma or equivalent	High school diploma or equivalent
647 648	4	47-5031 47-5051	Explosives Workers, Ordnance Handling Experts, and Blasters Rock Splitters, Quarry	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-S- -S-	 -s- High school diploma or equivalent -s- Less than high school 	High school diploma or equivalent High school diploma or equivalent
649	4	47-5051	HelpersExtraction Workers	-5- -S-	-s- -s-	-s- -s-	-5- -S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent
650	-	47 3001	Installation, Maintenance, and Repair	10,143	10,985	8.3%	842	10,324	11,166	riigir scribor dipiona or equivalent
651	2	49-0000	Installation, Maintenance, and Repair Occupations	10,143	10,985	8.3%	842	10,324	11,166	
652	3	49-1000	Supervisors of Installation, Maintenance, and Repair Workers	644	688	6.8%	44	611	655	
653	4	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	644	688	6.8%	44	611	655 High school diploma or equivalent	Postsecondary training (non-degree)
654	3	49-2000	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	680	648	-4.7%	-32	693	661	
655	4	49-2011	Computer, Automated Teller, and Office Machine Repairers	86	91 41	5.8%	5	94 44	99 High school diploma or equivalent	Postsecondary training (non-degree)
656 657	4	49-2021 49-2022	Radio, Cellular, and Tower Equipment Installers and Repairers Telecommunications Equipment Installers and Repairers, Except Line Installers	40 284	41 225	2.5% -20.8%	1 -59	44 280	 45 Postsecondary training (non-degree 221 Postsecondary training (non-degree 	Postsecondary training (non-degree) Postsecondary training (non-degree)
658	4	49-2022	Avionics Technicians	204 -S-	-S-	-20.8% -S-	-59 -S-	280 -S-	-s- Postsecondary training (non-degree	
659	4	49-2092	Electric Motor, Power Tool, and Related Repairers	-S-	-s- -s-	-S-	-S-	-s-	-s- Postsecondary training (non-degree	
660	4	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	24	26	8.3%	2	21	23 Postsecondary training (non-degree	
661	4	49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	92	94	2.2%	2	81	83 Postsecondary training (non-degree	e) Associate's degree
662	4	49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	-S-	-S-	-S-	-S-	-S-	 -s- Postsecondary training (non-degree 	e) Postsecondary training (non-degree)
663	4	49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
664	4	49-2097	Electronic Home Entertainment Equipment Installers and Repairers	-s- 58	-S-	-S-	-S-	-s- 76	-s- Postsecondary training (non-degree	
665	4	49-2098	Security and Fire Alarm Systems Installers	58	68	17.2%	10	76	86 Postsecondary training (non-degree	e) Fosisecondary training (non-degree)

O/cg(ni Linpic	утот Бор	aunent, workloice and Economic Nesearch Division						
		SOC		2019	2029	Percent	Employment	Replacement	Total
	Level		Standard Occupational Classification Title	Employment		Change	Change	Openings	Openings Typical Entry-Level Education Competitive Education
666 667	3	49-3000 49-3011	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers Aircraft Mechanics and Service Technicians	3,645 375	3,899 395	7.0% 5.3%	254 20	3,675 315	3,929 335 Postsecondary training (non-degree) Associate's degree
668	4	49-3021	Automotive Body and Related Repairers	328	352	7.3%	24	326	350 High school diploma or equivalent Postsecondary training (non-degree)
669	4	49-3022	Automotive Glass Installers and Repairers	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
670	4	49-3023	Automotive Service Technicians and Mechanics	985	1,010	2.5%	25	971	996 Postsecondary training (non-degree) Associate's degree
671	4	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	566	632	11.7%	66	554	620 High school diploma or equivalent Postsecondary training (non-degree)
672 673	4	49-3041 49-3042	Farm Equipment Mechanics and Service Technicians	406 328	451 346	11.1% 5.5%	45	426 335	471 High school diploma or equivalent Postsecondary training (non-degree)
674	4	49-3042	Mobile Heavy Equipment Mechanics, Except Engines Rail Car Repairers	13	12	5.5% -7.7%	18 -1	13	353 High school diploma or equivalent Postsecondary training (non-degree) 12 High school diploma or equivalent High school diploma or equivalent
675	4	49-3051	Motorboat Mechanics and Service Technicians	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
676	4	49-3052	Motorcycle Mechanics	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
677	4	49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	21	24	14.3%	3	23	26 High school diploma or equivalent Postsecondary training (non-degree)
678	4	49-3091	Bicycle Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
679	4	49-3092	Recreational Vehicle Service Technicians	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree) Associate's degree
680 681	3	49-3093 49-9000	Tire Repairers and Changers Other Installation, Maintenance, and Repair Occupations	448 5,174	481 5,750	7.4% 11.1%	33 576	512 5,345	545 High school diploma or equivalent High school diploma or equivalent 5.921
682	4	49-9011	Mechanical Door Repairers	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
683	4	49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	56	59	5.4%	3	49	52 High school diploma or equivalent High school diploma or equivalent
684	4	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	574	684	19.2%	110	614	724 Postsecondary training (non-degree) Postsecondary training (non-degree)
685	4	49-9031	Home Appliance Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
686	4	49-9041	Industrial Machinery Mechanics	614	681	10.9%	67	593	660 High school diploma or equivalent Postsecondary training (non-degree)
687 688	4	49-9043 49-9044	Maintenance Workers, Machinery Millwrights	72 236	81 282	12.5% 19.5%	9 46	69 223	78 High school diploma or equivalent 269 High school diploma or equivalent Postsecondary training (non-degree)
689	4	49-9044	Refractory Materials Repairers, Except Brickmasons	-S-	202 -S-	19.5% -S-	-S-	-S-	269 High school diploma or equivalent Postsecondary training (non-degree) -s- High school diploma or equivalent High school diploma or equivalent
690	4	49-9051	Electrical Power-Line Installers and Repairers	241	261	8.3%	20	211	231 Postsecondary training (non-degree) Postsecondary training (non-degree)
691	4	49-9052	Telecommunications Line Installers and Repairers	25	22	-12.0%	-3	26	23 High school diploma or equivalent Postsecondary training (non-degree)
692	4	49-9061	Camera and Photographic Equipment Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
693	4	49-9062	Medical Equipment Repairers	53	60	13.2%	7	59	66 Postsecondary training (non-degree) Associate's degree
694	4	49-9063	Musical Instrument Repairers and Tuners	24	22	-8.3%	-2	24	22 Postsecondary training (non-degree) Postsecondary training (non-degree)
695	4	49-9064	Watch Repairers	-S-	-s- 23	-S-	-s-	-s- 23	-s- High school diploma or equivalent Postsecondary training (non-degree)
696 697	4	49-9069 49-9071	Precision Instrument and Equipment Repairers, All Other Maintenance and Repair Workers, General	21 2,260	2,509	9.5% 11.0%	2 249	23 2,311	25 Associate's degree Associate's degree
698	4	49-9071	Wind Turbine Service Technicians	2,200 -S-	2,509 -S-	-S-	249 -S-	2,311 -S-	2,560 High school diploma or equivalent Postsecondary training (non-degree) -s- Associate's degree Associate's degree
699	4	49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	-S-	-S-	-S-	-s-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
700	4	49-9092	Commercial Divers	-s-	-S-	-S-	-\$-	-S-	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
701	4	49-9094	Locksmiths and Safe Repairers	74	72	-2.7%	-2	79	77 High school diploma or equivalent Postsecondary training (non-degree)
702	4	49-9095	Manufactured Building and Mobile Home Installers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
703	4	49-9096	Riggers	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
704 705	4 4	49-9097 49-9098	Signal and Track Switch Repairers HelpersInstallation, Maintenance, and Repair Workers	-s- 272	-s- 298	-s- 9.6%	-s- 26	-s- 364	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
705	4	49-9099	Installation, Maintenance, and Repair Workers, All Other	362	403	11.3%	41	411	390 High school diploma or equivalent 452 High school diploma or equivalent High school diploma or equivalent
707		10 0000	Production	18,839	19.613	4.1%	774	22.434	23,208
708	2	51-0000	Production Occupations	18,839	19,613	4.1%	774	22,434	23,208
709	3	51-1000	Supervisors of Production Workers	1,133	1,202	6.1%	69	1,193	1,262
710	4	51-1011	First-Line Supervisors of Production and Operating Workers	1,133	1,202	6.1%	69	1,193	1,262 High school diploma or equivalent Bachelor's degree
711	3	51-2000	Assemblers and Fabricators	3,567	3,477	-2.5%	-90	4,041	3,951
712 713	4	51-2028 51-2031	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers Engine and Other Machine Assemblers	315 -s-	318	1.0%	3 -s-	360	363 High school diploma or equivalent -s- High school diploma or equivalent Postsecondary training (non-degree)
713	4	51-2031	Structural Metal Fabricators and Fitters	-s- 447	-s- 444	-s- -0.7%	-s- -3	-s- 466	463 High school diploma or equivalent Postsecondary training (non-degree)
715	4	51-2091	Fiberglass Laminators and Fabricators	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
716	4	51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	2,746	2,655	-3.3%	-91	3,145	3,054 High school diploma or equivalent High school diploma or equivalent
717	3	51-3000	Food Processing Workers	1,771	1,863	5.2%	92	2,478	2,570
718	4	51-3011	Bakers	272	298	9.6%	26	390	416 Less than high school High school diploma or equivalent
719	4	51-3021	Butchers and Meat Cutters	234	248	6.0%	14	298	312 Less than high school Postsecondary training (non-degree)
720	4	51-3022	Meat, Poultry, and Fish Cutters and Trimmers	-S-	-s-	-S-	-s-	-s-	-s- Less than high school High school diploma or equivalent
721 722	4	51-3023 51-3091	Slaughterers and Meat Packers Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	100 -s-	108 -s-	8.0%	8 -s-	129 -s-	137 Less than high school High school diploma or equivalent -s- Less than high school High school diploma or equivalent
723	4	51-3091	Food Batchmakers	814	-s- 857	5.3%	43	1,239	1,282 High school diploma or equivalent High school diploma or equivalent
724	4	51-3093	Food Cooking Machine Operators and Tenders	80	80	0.0%	0	125	125 High school diploma or equivalent High school diploma or equivalent
725	4	51-3099	Food Processing Workers, All Other	-s-	-S-	-S-	-\$-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
726	3	51-4000	Metal Workers and Plastic Workers	3,329	3,614	8.6%	285	3,774	4,059
727	4	51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	218	228	4.6%	10	229	239 High school diploma or equivalent Postsecondary training (non-degree)
728	4	51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	77	105	36.4%	28	93	121 Postsecondary training (non-degree) Postsecondary training (non-degree)
729	4	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	124	128	3.2%	4	157	161 High school diploma or equivalent High school diploma or equivalent
730 731	4	51-4022 51-4023	Forging Machine Setters, Operators, and Tenders, Metal and Plastic Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	-s- 56	-s- 56	-s- 0.0%	-s- 0	-s- 53	-s- High school diploma or equivalent 53 High school diploma or equivalent High school diploma or equivalent
732	4	51-4023	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	153	162	5.9%	9	176	185 High school diploma or equivalent High school diploma or equivalent
733	4	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	-s-	-s-	-S-	-s-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
734	4	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	285	311	9.1%	26	339	365 High school diploma or equivalent High school diploma or equivalent
735	4	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	23	24	4.4%	1	26	27 High school diploma or equivalent High school diploma or equivalent
736	4	51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	41	41	0.0%	0	43	43 High school diploma or equivalent High school diploma or equivalent
737	4	51-4041	Machinists	382	421	10.2%	39	407	446 High school diploma or equivalent Postsecondary training (non-degree)
738 739	4	51-4051 51-4052	Metal-Refining Furnace Operators and Tenders Pourers and Casters, Metal	183 19	179 21	-2.2% 10.5%	-4 2	214 24	210 High school diploma or equivalent 26 High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
740	4	51-4052	Model Makers, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
140	-	51 4001	most makers, metal and risdite	-3-	-5-	3-	-5-	-3-	5g 55561 diploma of equivalent Tright solicor diploma of equivalent

Bow	SOC Level		Standard Occupational Classification Title	2019	2029	Percent		Replacement	Total	Competitive Education
741	4	51-4071	Foundry Mold and Coremakers	Employment -s-	-S-	Change -s-	Change -S-	Openings -s-	Openings Typical Entry-Level Education -s- High school diploma or equivalent	High school diploma or equivalent
742	4	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	492	536	8.9%	44	561	605 High school diploma or equivalent	High school diploma or equivalent
743	4	51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	47	54	14.9%	7	53	60 High school diploma or equivalent	High school diploma or equivalent
744	4	51-4111	Tool and Die Makers	26	29	11.5%		27	30 Postsecondary training (non-degree	
745 746	4 4	51-4121 51-4122	Welders, Cutters, Solderers, and Brazers Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	706 24	824 24	16.7% 0.0%	118 0	838 26	956 High school diploma or equivalent	Postsecondary training (non-degree) Postsecondary training (non-degree)
746	4	51-4122	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	69	70	1.5%	1	73	26 High school diploma or equivalent 74 High school diploma or equivalent	High school diploma or equivalent
748	4	51-4192	Layout Workers, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
749	4	51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
750	4	51-4194	Tool Grinders, Filers, and Sharpeners	29	30	3.5%	1	43	44 High school diploma or equivalent	High school diploma or equivalent
751	4	51-4199	Metal Workers and Plastic Workers, All Other	184	173	-6.0%	-11	187	176 High school diploma or equivalent	High school diploma or equivalent
752	3	51-5100	Printing Workers	293	262	-10.6%	-31	312	281	Besteven bestelling for the bound
753 754	4 4	51-5111 51-5112	Prepress Technicians and Workers Printing Press Operators	-s- 229	-s- 210	-s- -8.3%	-s- -19	-s- 236	 -s- High school diploma or equivalent 217 High school diploma or equivalent 	Postsecondary training (non-degree) High school diploma or equivalent
755	4	51-5112	Print Binding and Finishing Workers	-S-	-S-	-0.3% -S-	-19 -S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
756	3	51-6000	Textile, Apparel, and Furnishings Workers	544	550	1.1%	6	650	656	riigir concor aipionia or oquivalorii
757	4	51-6011	Laundry and Dry-Cleaning Workers	134	143	6.7%	9	185	194 Less than high school	High school diploma or equivalent
758	4	51-6021	Pressers, Textile, Garment, and Related Materials	-S-	-s-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
759	4	51-6031	Sewing Machine Operators	200	200	0.0%	0	224	224 Less than high school	High school diploma or equivalent
760	4	51-6041	Shoe and Leather Workers and Repairers	-s- 30	-s-	-S-	-s-	-s- 39	-s- High school diploma or equivalent	High school diploma or equivalent
761 762	4	51-6052 51-6061	Tailors, Dressmakers, and Custom Sewers Textile Bleaching and Dyeing Machine Operators and Tenders	12	29 13	-3.3% 8.3%	-1 1	17	38 Less than high school 18 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
763	4	51-6062	Textile Cutting Machine Setters, Operators, and Tenders	35	33	-5.7%	-2	32	30 High school diploma or equivalent	High school diploma or equivalent
764	4	51-6093	Upholsterers	60	63	5.0%	3	64	67 High school diploma or equivalent	High school diploma or equivalent
765	4	51-6099	Textile, Apparel, and Furnishings Workers, All Other	-8-	-s-	-S-	-8-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
766	3	51-7000	Woodworkers	1,614	1,754	8.7%	140	1,965	2,105	
767	4	51-7011	Cabinetmakers and Bench Carpenters	662	721	8.9%	59	716	775 High school diploma or equivalent	High school diploma or equivalent
768 769	4 4	51-7021 51-7041	Furniture Finishers Sawing Machine Setters, Operators, and Tenders, Wood	-s- 390	-s- 421	-s- 8.0%	-s- 31	-s- 470	 -s- High school diploma or equivalent 501 High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
770	4	51-7041	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	362	396	9.4%	34	528	562 High school diploma or equivalent	High school diploma or equivalent
771	4	51-7099	Woodworkers, All Other	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
772	3	51-8000	Plant and System Operators	393	395	0.5%	2	388	390	3
773	4	51-8012	Power Distributors and Dispatchers	27	27	0.0%	0	26	26 High school diploma or equivalent	Bachelor's degree
774	4	51-8013	Power Plant Operators	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
775	4	51-8021	Stationary Engineers and Boiler Operators	103	108	4.9%	5	111	116 High school diploma or equivalent	High school diploma or equivalent
776 777	4 4	51-8031 51-8091	Water and Wastewater Treatment Plant and System Operators Chemical Plant and System Operators	199 -s-	194 -s-	-2.5% -s-	-5 -s-	178 -s-	173 Postsecondary training (non-degree -s- High school diploma or equivalent	Postsecondary training (non-degree)
778	4	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	-S-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
779	4	51-8099	Plant and System Operators, All Other	43	46	7.0%	3	50	53 High school diploma or equivalent	Postsecondary training (non-degree)
780	3	51-9000	Other Production Occupations	6,195	6,496	4.9%	301	7,633	7,934	
781	4	51-9011	Chemical Equipment Operators and Tenders	96	107	11.5%	11	117	128 High school diploma or equivalent	High school diploma or equivalent
782	4	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	577	657	13.9%	80	708	788 High school diploma or equivalent	High school diploma or equivalent
783 784	4	51-9021 51-9022	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders Grinding and Polishing Workers, Hand	92 61	101 59	9.8% -3.3%	9 -2	112 70	121 High school diploma or equivalent 68 Less than high school	High school diploma or equivalent High school diploma or equivalent
785	4	51-9022	Mixing and Blending Machine Setters, Operators, and Tenders	266	299	12.4%	33	328	361 High school diploma or equivalent	High school diploma or equivalent
786	4	51-9031	Cutters and Trimmers, Hand	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
787	4	51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	75	77	2.7%	2	93	95 High school diploma or equivalent	High school diploma or equivalent
788	4	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	230	239	3.9%	9	254	263 High school diploma or equivalent	High school diploma or equivalent
789	4	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	69	74	7.3%	5	76	81 High school diploma or equivalent	High school diploma or equivalent
790 791	4 4	51-9061 51-9071	Inspectors, Testers, Sorters, Samplers, and Weighers Jewelers and Precious Stone and Metal Workers	893 86	802 85	-10.2% -1.2%	-91 -1	1,044 109	953 High school diploma or equivalent 108 Postsecondary training (non-degree	Postsecondary training (non-degree)
791	4	51-9071	Dental Laboratory Technicians	15	19	26.7%	-1	21	25 High school diploma or equivalent	Postsecondary training (non-degree) Postsecondary training (non-degree)
793	4	51-9082	Medical Appliance Technicians	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
794	4	51-9083	Ophthalmic Laboratory Technicians	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
795	4	51-9111	Packaging and Filling Machine Operators and Tenders	1,132	1,184	4.6%	52	1,345	1,397 High school diploma or equivalent	High school diploma or equivalent
796	4	51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	222	256	15.3%	34	260	294 High school diploma or equivalent	High school diploma or equivalent
797	4	51-9122	Painters, Transportation Equipment	82	90	9.8%	8	94	102 High school diploma or equivalent	High school diploma or equivalent
798 799	4 4	51-9141 51-9151	Semiconductor Processors	-s- 81	-s- 80	-s- -1.2%	-s- -1	-s- 124	-s- High school diploma or equivalent	Associate's degree
800	4	51-9151	Photographic Process Workers and Processing Machine Operators Adhesive Bonding Machine Operators and Tenders	60	62	3.3%	-1	80	123 High school diploma or equivalent82 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
801	4	51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	44	43	-2.3%	-1	68	67 Less than high school	High school diploma or equivalent
802	4	51-9193	Cooling and Freezing Equipment Operators and Tenders	-s-	-s-	-S-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
803	4	51-9194	Etchers and Engravers	-S-	-s-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
804	4	51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	98	116	18.4%	18	118	136 High school diploma or equivalent	High school diploma or equivalent
805	4	51-9196	Paper Goods Machine Setters, Operators, and Tenders	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
806 807	4 4	51-9198 51-9199	HelpersProduction Workers Production Workers, All Other	629 1.027	700 1,117	11.3% 8.8%	71 90	979 1.240	1,050 Less than high school	High school diploma or equivalent
808	4	51-9199	Transportation and Material Moving	1,027 20,047	22,050	8.8% 10.0%	2, 003	1,240 26,620	1,330 High school diploma or equivalent 28,623	High school diploma or equivalent
809	2	53-0000	Transportation and Material Moving Occupations	20,047	22,050	10.0%	2,003	26,620	28,623	
810	3	53-1000	Supervisors of Transportation and Material Moving Workers	707	784	10.9%	77	796	873	
811	4	53-1011	Aircraft Cargo Handling Supervisors	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
			First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling							
812		53-1048	Supervisors	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Associate's degree
813 814		53-2000 53-2011	Air Transportation Workers Airline Pilots, Copilots, and Flight Engineers	289	312 -s-	8.0% -s-	23 -s-	307 -s-	330 -s- Associate's degree	Bachelor's degree
314	7	30 2011	, ato 1 1100, copiloto, and 1 11gm Engineers	-5-	-5-	-3-	-5-	-5-	5 75500iate 3 degree	Sastion a degree

Mid-Valley Employment Projections Full Table, 2019-2029 (Marion, Polk, Yamhill Counties)

Oregon Employment Department, Workforce and Economic Research Division

	soc	soc		2019	2029	Percent	Employment	Replacement	Total	
Row	Level	Code	Standard Occupational Classification Title	Employment	Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
815	4	53-2012	Commercial Pilots	238	258	8.4%	20	252	272 Associate's degree	Bachelor's degree
816	4	53-2022	Airfield Operations Specialists	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
817	4	53-2031	Flight Attendants	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
818	3	53-3000	Motor Vehicle Operators	7,438	8,212	10.4%	774	9,176	9,950	
819	4	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	High school diploma or equivalent
820	4	53-3021	Bus Drivers, Transit and Intercity	177	193	9.0%	16	234	250 High school diploma or equivalent	High school diploma or equivalent
821	4	53-3022	Bus Drivers, School or Special Client	1,421	1,600	12.6%	179	1,906	2,085 High school diploma or equivalent	High school diploma or equivalent
822	4	53-3031	Driver/Sales Workers	604	561	-7.1%	-43	662	619 High school diploma or equivalent	High school diploma or equivalent
823	4	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,612	4,043	11.9%	431	4,352	4,783 Postsecondary training (non-degree	e) Postsecondary training (non-degree)
824	4	53-3033	Light Truck or Delivery Services Drivers	1,279	1,425	11.4%	146	1,538	1,684 High school diploma or equivalent	High school diploma or equivalent
825	4	53-3041	Taxi Drivers and Chauffeurs	198	235	18.7%	37	234	271 Less than high school	High school diploma or equivalent
826	4	53-3099	Motor Vehicle Operators, All Other	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
827	3	53-4000	Rail Transportation Workers	-S-	-S-	-S-	-S-	-S-	-S-	
828	4	53-4011	Locomotive Engineers	66	67	1.5%	1	62	63 High school diploma or equivalent	High school diploma or equivalent
829	4	53-4021	Railroad Brake, Signal, and Switch Operators	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
830	4	53-4031	Railroad Conductors and Yardmasters	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
831	4	53-4099	Rail Transportation Workers, All Other	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
832	3	53-5000	Water Transportation Workers	-S-	-S-	-8-	-S-	-S-	-S-	
833	4	53-5021	Captains, Mates, and Pilots of Water Vessels	-S-	-s-	-s-	-s-	-S-	-s- Postsecondary training (non-degree	e) Postsecondary training (non-degree)
834	3	53-6000	Other Transportation Workers	1,114	1,182	6.1%	68	1,659	1,727	
835	4	53-6021	Parking Lot Attendants	-S-	-S-	-8-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
836	4	53-6031	Automotive and Watercraft Service Attendants	819	863	5.4%	44	1,243	1,287 Less than high school	High school diploma or equivalent
837	4	53-6041	Traffic Technicians	-S-	-S-	-8-	-S-	-S-	-s- Postsecondary training (non-degree	e) Bachelor's degree
838	4	53-6051	Transportation Inspectors	42	46	9.5%	4	44	48 High school diploma or equivalent	Postsecondary training (non-degree)
839	4	53-6061	Transportation Attendants, Except Flight Attendants	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
840	4	53-6099	Transportation Workers, All Other	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
841	3	53-7000	Material Moving Workers	10,345	11,402	10.2%	1,057	14,536	15,593	
842	4	53-7011	Conveyor Operators and Tenders	-S-	-s-	-s-	-s-	-S-	-s- Less than high school	High school diploma or equivalent
843	4	53-7021	Crane and Tower Operators	110	122	10.9%	12	135	147 Less than high school	High school diploma or equivalent
844	4	53-7031	Dredge Operators	-S-	-s-	-s-	-s-	-S-	-s- Less than high school	High school diploma or equivalent
845	4	53-7032	Excavating and Loading Machine and Dragline Operators	155	177	14.2%	22	196	218 Less than high school	High school diploma or equivalent
846	4	53-7041	Hoist and Winch Operators	-S-	-S-	-8-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
847	4	53-7051	Industrial Truck and Tractor Operators	2,086	2,323	11.4%	237	2,480	2,717 Less than high school	High school diploma or equivalent
848	4	53-7061	Cleaners of Vehicles and Equipment	1,247	1,329	6.6%	82	1,876	1,958 Less than high school	High school diploma or equivalent
849	4	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	4,745	5,423	14.3%	678	7,061	7,739 Less than high school	High school diploma or equivalent
850	4	53-7063	Machine Feeders and Offbearers	560	570	1.8%	10	748	758 Less than high school	High school diploma or equivalent
851	4	53-7064	Packers and Packagers, Hand	1,054	1,031	-2.2%	-23	1,502	1,479 Less than high school	High school diploma or equivalent
852	4	53-7072	Pump Operators, Except Wellhead Pumpers	-s-	-s-	-s-	-s-	-s-	-s- Less than high school	High school diploma or equivalent
853	4	53-7081	Refuse and Recyclable Material Collectors	233	264	13.3%	31	343	374 Less than high school	High school diploma or equivalent
854	4	53-7199	Material Moving Workers, All Other	74	76	2.7%	2	94	96 Less than high school	High school diploma or equivalent
855			Nonclassifiable	520	560	7.7%	40	881	921	- , ,
856	2	66-0000	Nonclassifiable Occupations	520	560	7.7%	40	881	921	
857	4	66-2041	Non-covered Agricultural Workers**	520	560	7.7%	40	881	921 Less than high school	High school diploma or equivalent

Notes:

Notes:
All data includes self-employment.
- s - means suppressed for confidentiality or insufficient data.
- s - means suppressed for confidentiality or insufficient data.
- **Non-covered agricultural workers are workers employed by agricultural firms who are not covered by unemployment insurance. The number of non-covered agricultural workers by occupation is not available.

Data Sources and Limitations

Contact:
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w Leve	C SOC rel Code	Standard Occupational Classification Title		2029 Employment	Percent Change	Employment Change	Replacement Openings		Competitive Education
1	00-0000	Total, All Occupations Management, Business, and Financial	283,711 27,582	307,907 30.549	8.5% 10.8%	24,196 2.967	348,054 25,827	372,250 28,794	
2	11-0000	Management Occupations	15,265	16,777	9.9%	2,967 1,512	13,531	15,043	
3	11-1000	Top Executives	4.464	4.895	9.7%	431	4,019	4.450	
4	11-1011	Chief Executives	273	255	-6.6%	-18	187	169 Bachelor's degree	Bachelor's degree
4	11-1021	General and Operations Managers	4,164	4,613	10.8%	449	3,811		Bachelor's degree
4	11-1031	Legislators	27	27	0.0%	0	21		Bachelor's degree
3	11-2000	Advertising, Marketing, Promotions, Public Relations, and Sales Managers	954	1,046	9.6%	92	886	978	
4	11-2011 11-2021	Advertising and Promotions Managers	-s- 229	-s- 259	-s- 13.1%	-s- 30	-s- 217		Bachelor's degree
4	11-2021	Marketing Managers Sales Managers	635	690	8.7%	55	588		Bachelor's degree Bachelor's degree
4	11-2031	Public Relations and Fundraising Managers	-5-	-9-	-9-	-9-	-9-		Bachelor's degree
3	11-3000	Operations Specialties Managers	2,943	3,323	12.9%	380	2,482	2,862	
4	11-3011	Administrative Services Managers	766	834	8.9%	68	666	734 Bachelor's degree	Bachelor's degree
4	11-3021	Computer and Information Systems Managers	263	288	9.5%	25	215		Bachelor's degree
4	11-3031	Financial Managers	870	1,041	19.7%	171	737		Bachelor's degree
4	11-3051	Industrial Production Managers	441	481	9.1%	40	336		Bachelor's degree
4	11-3061	Purchasing Managers	85	95 279	11.8%	10	75		Bachelor's degree
4	11-3071 11-3111	Transportation, Storage, and Distribution Managers Compensation and Benefits Managers	246 -s-	279 -s-	13.4% -s-	33 -S-	207 -s-		Bachelor's degree
4	11-3111	Human Resources Managers	243	274	12.8%	31	219		Bachelor's degree Bachelor's degree
4	11-3121	Training and Development Managers	-S-	-S-	12.0% -S-	-S-	-S-		Bachelor's degree
3	11-9000	Other Management Occupations	6.904	7,513	8.8%	609	6.144	6,753	ooo
4	11-9013	Farmers, Ranchers, and Other Agricultural Managers	1,485	1,508	1.6%	23	1,486		Bachelor's degree
4	11-9021	Construction Managers	935	1,071	14.6%	136	722	858 Associate's degree	Bachelor's degree
4	11-9031	Education Administrators, Preschool and Childcare Center/Program	81	101	24.7%	20	70		Bachelor's degree
4	11-9032	Education Administrators, Elementary and Secondary School	556	621	11.7%	65	457		Master's degree
4	11-9033	Education Administrators, Postsecondary	225	230	2.2%	5	177		Doctoral or professional degre
4	11-9039	Education Administrators, All Other	61	66	8.2%	.5	49		Doctoral or professional degree
4	11-9041	Architectural and Engineering Managers	185	200	8.1%	15	139		Bachelor's degree
4	11-9051 11-9061	Food Service Managers Funeral Service Managers	555	610	9.9%	55	667		Associate's degree
4	11-9061	Funeral Service Managers Gaming Managers	-S- -S-	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- Associate's degree -s- Postsecondary training (non-degree)	Associate's degree
4	11-9081	Lodging Managers	-5-	-S-	-S-	-S-	-s-		Associate's degree
4	11-9111	Medical and Health Services Managers	620	721	16.3%	101	531		Master's degree
4	11-9121	Natural Sciences Managers	109	121	11.0%	12	101		Master's degree
4	11-9131	Postmasters and Mail Superintendents	34	34	0.0%	0	26		Bachelor's degree
4	11-9141	Property, Real Estate, and Community Association Managers	452	492	8.9%	40	364		Postsecondary training (non-
4	11-9151	Social and Community Service Managers	461	503	9.1%	42	418		Bachelor's degree
4	11-9161	Emergency Management Directors	15	16	6.7%	1	13		Bachelor's degree
4	11-9199	Managers, All Other	1,010	1,083	7.2%	73	793		Bachelor's degree
2	13-0000	Business and Financial Operations Occupations	12,317	13,772	11.8%	1,455	12,296	13,751	
3 4	13-1000 13-1011	Business Operations Specialists Agents and Business Managers of Artists, Performers, and Athletes	8,597 -S-	9,773	13.7%	1,176	8,905 -s-	10,081 -s- Bachelor's degree	Bachelor's degree
4	13-1011	Agents and business managers of Artists, Performers, and Athletes Buyers and Purchasing Agents	-s- 643	630	-s- -2.0%	-s- -13	-s- 664		Bachelor's degree
4	13-1020	Claims Adjusters, Examiners, and Investigators	-S-	-S-	-2.0% -S-	-13 -S-	-S-		Bachelor's degree
4	13-1041	Compliance Officers	711	777	9.3%	66	652		Bachelor's degree
4	13-1051	Cost Estimators	489	562	14.9%	73	519		Bachelor's degree
4	13-1071	Human Resources Specialists	764	811	6.2%	47	790		Bachelor's degree
4	13-1074	Farm Labor Contractors	-s-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equiva
4	13-1075	Labor Relations Specialists	144	142	-1.4%	-2	143		Bachelor's degree
	10 1001	Logisticians				10	105	115 Bachelor's degree	Bachelor's degree
4	13-1081		105	115	9.5%				
4	13-1111	Management Analysts	2,721	3,471	27.6%	750	2,916	3,666 Bachelor's degree	Master's degree
4 4 4	13-1111 13-1121	Management Analysts Meeting, Convention, and Event Planners	2,721 127	3,471 138	27.6% 8.7%	750 11	2,916 150	3,666 Bachelor's degree 161 Bachelor's degree	Master's degree Bachelor's degree
4 4 4 4	13-1111 13-1121 13-1131	Management Analysts Meeting, Convention, and Event Planners Fundraisers	2,721 127 69	3,471 138 77	27.6% 8.7% 11.6%	750 11 8	2,916 150 76	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree
4 4 4 4 4	13-1111 13-1121 13-1131 13-1141	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists	2,721 127 69 67	3,471 138 77 73	27.6% 8.7% 11.6% 9.0%	750 11 8 6	2,916 150 76 66	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists	2,721 127 69 67 637	3,471 138 77 73 713	27.6% 8.7% 11.6% 9.0% 11.9%	750 11 8 6 76	2,916 150 76 66 724	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists	2,721 127 69 67 637 389	3,471 138 77 73 713 472	27.6% 8.7% 11.6% 9.0% 11.9% 21.3%	750 11 8 6 76 83	2,916 150 76 66 724 440	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree
4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other	2,721 127 69 67 637 389 1,253	3,471 138 77 73 713 472 1,340	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9%	750 11 8 6 76 83 87	2,916 150 76 66 724 440 1,245	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree
4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199 13-2000	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists	2,721 127 69 67 637 389 1,253 3,720	3,471 138 77 73 713 472	27.6% 8.7% 11.6% 9.0% 11.9% 21.3%	750 11 8 6 76 83	2,916 150 76 66 724 440 1,245 3,391	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 3,670	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 4 4 4 4 4 3	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors	2,721 127 69 67 637 389 1,253	3,471 138 77 73 713 472 1,340 3,999	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5%	750 11 8 6 76 83 87 279	2,916 150 76 66 724 440 1,245	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 3,670 1,873 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree
4 4 4 4 4 4 4 3 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199 13-2000 13-2011 13-2021 13-2031	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts	2,721 127 69 67 637 389 1,253 3,720 1,725 294	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 7.1%	750 11 8 6 76 83 87 279 181 21	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 1,873 Bachelor's degree 248 Associate's degree 231 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Master's degree Bachelor's degree Bachelor's degree
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199 13-2000 13-2011 13-2021 13-2031 13-2041	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 7.1% 8.5% -4.8%	750 11 8 6 76 83 87 279 181 21 22 -3	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 3,670 1,873 Bachelor's degree 248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree	Master's degree Bachelor's degree
4 4 4 4 4 4 3 4 4 4 4	13-1111 13-1121 13-1131 13-1151 13-1161 13-1199 13-2000 13-2011 13-2021 13-2031 13-2041 13-2051	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Financial Analysts	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 7.1% 8.55% -4.8% 10.5%	750 11 8 6 76 83 87 279 181 21 22 -3	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 2,3670 1,873 Bachelor's degree 248 Associate's degree 248 Associate's degree 51 Bachelor's degree 67 Bachelor's degree 67 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 4 4 4 4 3 4 4 4 4 4	13-1111 13-1121 13-1131 13-1151 13-1161 13-1199 13-2000 13-2011 13-2021 13-2031 13-2052	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59 74	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 7.1% 8.5% -4.8% 10.55%	750 11 8 6 76 83 87 279 181 21 22 -3 7	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 57	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 1,3670 1,873 Bachelor's degree 248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 67 Bachelor's degree 70 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 4 4 4 4 3 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-1199 13-2000 13-2011 13-2031 13-2051 13-2051 13-2052 13-2053	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67 70	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59 74	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 4.8% 10.5% 4.8% 10.5% 18.6%	750 11 8 6 76 83 87 279 181 21 22 -3 7	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 57	3,666 Bachelor's degree 161 Bachelor's degree 184 Bachelor's degree 180 Bachelor's degree 1800 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 1,373 Bachelor's degree 248 Associate's degree 231 Bachelor's degree 251 Bachelor's degree 151 Bachelor's degree 151 Bachelor's degree 151 Bachelor's degree 152 Bachelor's degree 153 Bachelor's degree 153 Bachelor's degree 154 Bachelor's degree 155 Bachelor's degree	Master's degree Bachelor's degree
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-2000 13-2011 13-2021 13-2031 13-2052 13-2052 13-2053 13-2053	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67 70 97	3,471 138 77 73 713 4772 1,340 3,999 1,906 315 280 59 74 83 78	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 7.1% 8.5% -4.8% 10.5% 18.6% -19.6% 6.0%	750 11 8 6 76 83 87 279 181 21 22 -3 7 13 -19	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 67 72 64	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 1,873 Bachelor's degree 248 Associate's degree 231 Bachelor's degree 61 Bachelor's degree 67 Bachelor's degree 67 Bachelor's degree 68 Bachelor's degree 69 Bachelor's degree 69 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 4 4 4 4 3 4 4 4 4 4 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1199 13-2000 13-2011 13-2021 13-2031 13-2052 13-2053 13-2053 13-2053	Management Analysts Meeting, Conveention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67 70 97	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59 74 83 78	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% -4.8% 10.55% 10.5% 10.6% 6.0%	750 11 8 6 76 83 87 279 181 21 22 -3 7 13 -19 5	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 57 72 64 -s-	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 3,670 1,873 Bachelor's degree 248 Associate's degree 231 Bachelor's degree 51 Bachelor's degree 67 Bachelor's degree 67 Bachelor's degree 68 Bachelor's degree 69 Bachelor's degree	Master's degree Bachelor's degree
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1161 13-2091 13-2011 13-2051 13-2051 13-2053 13-2061 13-2072	Management Analysts Meeting, Convention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors Loan Officers	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67 70 97 83 -s- 560	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59 74 83 78 88 -s- 565	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% 4.8% 10.5% -4.8% 10.5% -19.6% 6.0% -5.09%	750 11 8 6 76 83 87 279 181 21 22 -3 7 13 -19 5	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 57 72 64 -s-	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 2,3670 1,873 Bachelor's degree 248 Associate's degree 248 Associate's degree 671 Bachelor's degree 672 Bachelor's degree 673 Bachelor's degree 6746 Bachelor's degree 675 Bachelor's degree 675 Bachelor's degree 676 Bachelor's degree 6776 Bachelor's degree	Master's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Bachelor's degree Master's degree Bachelor's degree
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	13-1111 13-1121 13-1131 13-1141 13-1151 13-1199 13-2000 13-2011 13-2021 13-2031 13-2052 13-2053 13-2053 13-2053	Management Analysts Meeting, Conveention, and Event Planners Fundraisers Compensation, Benefits, and Job Analysis Specialists Training and Development Specialists Market Research Analysts and Marketing Specialists Business Operations Specialists, All Other Financial Specialists Accountants and Auditors Appraisers and Assessors of Real Estate Budget Analysts Credit Analysts Financial Analysts Personal Financial Advisors Insurance Underwriters Financial Examiners Credit Counselors	2,721 127 69 67 637 389 1,253 3,720 1,725 294 258 62 67 70 97	3,471 138 77 73 713 472 1,340 3,999 1,906 315 280 59 74 83 78	27.6% 8.7% 11.6% 9.0% 11.9% 21.3% 6.9% 7.5% 10.5% -4.8% 10.55% 10.5% 10.6% 6.0%	750 11 8 6 76 83 87 279 181 21 22 -3 7 13 -19 5	2,916 150 76 66 724 440 1,245 3,391 1,692 227 209 54 60 57 72 64 -s-	3,666 Bachelor's degree 161 Bachelor's degree 84 Bachelor's degree 72 Bachelor's degree 800 Bachelor's degree 523 Bachelor's degree 1,332 Bachelor's degree 1,332 Bachelor's degree 2,3670 1,873 Bachelor's degree 248 Associate's degree 248 Associate's degree 671 Bachelor's degree 672 Bachelor's degree 673 Bachelor's degree 6746 Bachelor's degree 675 Bachelor's degree 675 Bachelor's degree 676 Bachelor's degree 6776 Bachelor's degree	Master's degree Bachelor's degree

	soc	soc		2019	2029	Percent	Employment	Replacement	Total	
Row	Level		Standard Occupational Classification Title	Employment	Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
74			Professional and Related	36,297	39,638	9.2%	3,341	34,632	37,973	
75	2	15-0000	Computer and Mathematical Occupations	4,447	4,956	11.5%	509	3,504	4,013	
76	3	15-1100	Computer Occupations	-\$-	-S-	-S-	-S-	-S-	-S-	
77 78	4	15-1111 15-1121	Computer and Information Research Scientists Computer Systems Analysts	-s- 544	-s- 562	-s- 3.3%	-s- 18	-s- 399	-s- Master's Degree 417 Bachelor's degree	Doctoral or professional degree Bachelor's degree
78 79	4	15-1121	Information Security Analysts	63	81	28.6%	18	399 51	69 Bachelor's degree	Bachelor's degree
80	4	15-1122	Computer Programmers	286	247	-13.6%	-39	187	148 Bachelor's degree	Bachelor's degree
81	4	15-1132	Software Developers, Applications	936	1,150	22.9%	214	735	949 Bachelor's degree	Bachelor's degree
82	4	15-1133	Software Developers, Systems Software	70	79	12.9%	9	52	61 Bachelor's degree	Bachelor's degree
83	4	15-1134	Web Developers	95	106	11.6%	11	76	87 Bachelor's degree	Bachelor's degree
84	4	15-1141	Database Administrators	99	105	6.1%	6	73	79 Bachelor's degree	Bachelor's degree
85	4	15-1142	Network and Computer Systems Administrators	468	478	2.1%	10	330	340 Bachelor's degree	Bachelor's degree
86	4	15-1143	Computer Network Architects	-\$-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
87	4	15-1151	Computer User Support Specialists	1,056	1,205	14.1%	149	927	1,076 Postsecondary training (non-degree)	
88 89	4	15-1152 15-1199	Computer Network Support Specialists Computer Occupations, All Other	294 242	327 259	11.2% 7.0%	33 17	254 182	287 Postsecondary training (non-degree 199 Postsecondary training (non-degree	
90	3	15-1199	Mathematical Science Occupations	-S-	-S-	7.0% -S-	-S-	-S-	-S-	Bacrieioi s degree
91	4	15-2011	Actuaries	-s-	-S-	-s-	-s- -s-	-s- -s-	-s- Bachelor's degree	Master's degree
92	4	15-2031	Operations Research Analysts	36	45	25.0%	9	26	35 Bachelor's degree	Master's degree
93	4	15-2041	Statisticians	169	220	30.2%	51	149	200 Bachelor's degree	Master's degree
94	4	15-2090	Miscellaneous Mathematical Science Occupations	-S-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
95	2	17-0000	Architecture and Engineering Occupations	2,716	3,042	12.0%	326	2,309	2,635	-
96	3	17-1000	Architects, Surveyors, and Cartographers	216	253	17.1%	37	175	212	
97	4	17-1011	Architects, Except Landscape and Naval	95	113	19.0%	18	80	98 Bachelor's degree	Master's degree
98	4	17-1012	Landscape Architects	-\$-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
99	4	17-1021	Cartographers and Photogrammetrists	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Bachelor's degree
100 101	4 3	17-1022 17-2000	Surveyors Engineers	70 1.629	77 1,818	10.0% 11.6%	7 189	54 1.207	61 Bachelor's degree 1.396	Bachelor's degree
101	4	17-2000	Aerospace Engineers	1,629	70	9.4%	169	1,207	49 Bachelor's degree	Master's degree
103	4	17-2011	Agricultural Engineers	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
104	4	17-2031	Biomedical Engineers	-S-	-s-	-s-	-s-	-s-	-s- Bachelor's degree	Master's degree
105	4	17-2041	Chemical Engineers	-S-	-S-	-s-	-s-	-S-	-s- Bachelor's degree	Master's degree
106	4	17-2051	Civil Engineers	408	451	10.5%	43	335	378 Bachelor's degree	Master's degree
107	4	17-2061	Computer Hardware Engineers	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
108	4	17-2071	Electrical Engineers	88	94	6.8%	6	60	66 Bachelor's degree	Master's degree
109	4	17-2072	Electronics Engineers, Except Computer	127	126	-0.8%	-1	84	83 Bachelor's degree	Master's degree
110 111	4 4	17-2081	Environmental Engineers	22 19	23	4.6%	1	17 14	18 Bachelor's degree	Master's degree
	4	17-2111 17-2112	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	193	22 220	15.8% 14.0%	3 27	14	17 Bachelor's degree	Master's degree
112 113	4	17-2112	Industrial Engineers Materials Engineers	41	39	-4.9%	-2	25	168 Bachelor's degree 23 Bachelor's degree	Master's degree Master's degree
114	4	17-2131	Mechanical Engineers	479	564	17.8%	85	352	437 Bachelor's degree	Master's degree
115	4	17-2199	Engineers, All Other	167	184	10.2%	17	121	138 Bachelor's degree	Master's degree
116	3	17-3000	Drafters, Engineering Technicians, and Mapping Technicians	871	971	11.5%	100	927	1,027	
117	4	17-3011	Architectural and Civil Drafters	129	146	13.2%	17	142	159 Postsecondary training (non-degree)	Associate's degree
118	4	17-3012	Electrical and Electronics Drafters	-S-	-S-	-S-	-s-	-S-	 -s- Postsecondary training (non-degree) 	
119	4	17-3013	Mechanical Drafters	67	70	4.5%	3	71	74 Postsecondary training (non-degree)	
120	4	17-3019	Drafters, All Other	51	60	17.7%	9	57	66 Postsecondary training (non-degree)	
121	4	17-3021	Aerospace Engineering and Operations Technicians	-S-	-S-	-S-	-S-	-S-	-s- Associate's degree	Bachelor's degree
122 123	4	17-3022 17-3023	Civil Engineering Technicians Electrical and Electronics Engineering Technicians	210 64	233 64	11.0% 0.0%	23	216 62	239 Associate's degree 62 Associate's degree	Associate's degree Associate's degree
123	4	17-3023	Electrical and Electronics Engineering Technicians Electro-Mechanical Technicians	25	27	8.0%	2	26	28 Associate's degree	Associate's degree
125	4	17-3024	Environmental Engineering Technicians	31	34	9.7%	3	32	35 Associate's degree	Associate's degree
126	4	17-3026	Industrial Engineering Technicians	39	44	12.8%	5	41	46 Associate's degree	Associate's degree
127	4	17-3027	Mechanical Engineering Technicians	56	62	10.7%	6	58	64 Associate's degree	Associate's degree
128	4	17-3029	Engineering Technicians, Except Drafters, All Other	121	141	16.5%	20	127	147 Associate's degree	Associate's degree
129	4	17-3031	Surveying and Mapping Technicians	64	73	14.1%	9	80	89 High school diploma or equivalent	Postsecondary training (non-degree)
130	2	19-0000	Life, Physical, and Social Science Occupations	2,193	2,379	8.5%	186	2,286	2,472	
131	3	19-1000	Life Scientists	807	862	6.8%	55	863	918	
132	4 4	19-1011	Animal Scientists	-S-	-S-	-S-	-S-	-s-	-s- Bachelor's degree	Master's degree
133 134	4	19-1012 19-1013	Food Scientists and Technologists Soil and Plant Scientists	81 234	85 252	4.9% 7.7%	4 18	93 271	97 Bachelor's degree 289 Bachelor's degree	Master's degree Master's degree
134	4	19-1013	Soil and Plant Scientists Microbiologists	234 -s-	252 -S-	7.7% -S-	18 -S-	2/1 -S-	-s- Bachelor's degree	Master's degree
136	4	19-1022	Zoologists and Wildlife Biologists	103	-s- 111	7.8%	-s- 8	98	106 Bachelor's degree	Master's degree
137	4	19-1023	Biological Scientists, All Other	47	49	4.3%	2	44	46 Bachelor's degree	Master's degree
138	4	19-1031	Conservation Scientists	89	97	9.0%	8	96	104 Bachelor's degree	Master's degree
139	4	19-1032	Foresters	192	201	4.7%	9	204	213 Bachelor's degree	Master's degree
140	4	19-1041	Epidemiologists	-S-	-S-	-S-	-S-	-S-	-s- Doctoral or professional degree	Doctoral or professional degree
141	4	19-1042	Medical Scientists, Except Epidemiologists	-S-	-s-	-S-	-s-	-s-	-s- Doctoral or professional degree	Doctoral or professional degree
142	4	19-1099	Life Scientists, All Other	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree

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		SOC		2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
143	3	19-2000	Physical Scientists	236	258	9.3%	22	250	272	Mantada dansa
144 145	4	19-2021 19-2031	Atmospheric and Space Scientists Chemists	-s- 47	-s- 50	-s- 6.4%	-s- 3	-s- 44	-s- Bachelor's degree 47 Bachelor's degree	Master's degree Master's degree
146	4	19-2031	Materials Scientists	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
147	4	19-2041	Environmental Scientists and Specialists, Including Health	50	54	8.0%	4	57	61 Bachelor's degree	Master's degree
148	4	19-2042	Geoscientists, Except Hydrologists and Geographers	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
149	4	19-2043	Hydrologists	57	61	7.0%	4	64	68 Bachelor's degree	Master's degree
150	4	19-2099	Physical Scientists, All Other	15	15	0.0%	0	13	13 Bachelor's degree	Master's degree
151	3	19-3000	Social Scientists and Related Workers	576	637	10.6%	61	486	547	
152	4	19-3011	Economists	59	65	10.2%	6	46	52 Bachelor's degree	Master's degree
153	4	19-3022	Survey Researchers	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
154 155	4	19-3031 19-3039	Clinical, Counseling, and School Psychologists	315	352 -s-	11.8% -s-	37 -s-	233 -s-	270 Master's degree	Doctoral or professional degree
156	4	19-3039	Psychologists, All Other Urban and Regional Planners	-s- 127	-s- 143	12.6%	-s- 16	-s- 125	-s- Master's degree 141 Bachelor's degree	Doctoral or professional degree Master's degree
157	4	19-3091	Anthropologists and Archeologists	21	21	0.0%	0	25	25 Bachelor's degree	Master's degree
158	4	19-3092	Geographers	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree	Master's degree
159	4	19-3093	Historians	-S-	-S-	-s-	-S-	-s-	-s- Master's degree	Doctoral or professional degree
160	4	19-3094	Political Scientists	-S-	-s-	-S-	-S-	-s-	-s- Master's degree	Doctoral or professional degree
161	4	19-3099	Social Scientists and Related Workers, All Other	30	31	3.3%	1	35	36 Bachelor's degree	Master's degree
162	3	19-4000	Life, Physical, and Social Science Technicians	574	622	8.4%	48	687	735	
163	4	19-4011	Agricultural and Food Science Technicians	153	166	8.5%	13	193	206 Associate's degree	Associate's degree
164	4	19-4021	Biological Technicians	129	138	7.0%	9	140	149 Associate's degree	Bachelor's degree
165	4	19-4031	Chemical Technicians	35	36	2.9%	1	36	37 Associate's degree	Bachelor's degree
166	4	19-4061	Social Science Research Assistants	-S-	-s-	-S-	-s- 4	-s-	-s- Bachelor's degree	Bachelor's degree
167 168	4	19-4091 19-4092	Environmental Science and Protection Technicians, Including Health Forensic Science Technicians	29 -s-	33	13.8% -s-	4 -s-	36 -s-	40 Associate's degree	Bachelor's degree
169	4	19-4092	Forest and Conservation Technicians	-s- 88	-s- 90	2.3%	-8-	105	-s- Bachelor's degree 107 High school diploma or equivalent	Master's degree Associate's degree
170	4	19-4099	Life, Physical, and Social Science Technicians, All Other	122	139	13.9%	17	155	172 Associate's degree	Bachelor's degree
171	2	21-0000	Community and Social Service Occupations	5.641	6.273	11.2%	632	6.256	6.888	Dathelor 3 degree
172	3	21-1000	Counselors, Social Workers, and Other Community and Social Service Specialists	4,580	5,139	12.2%	559	4,981	5,540	
173	4	21-1012	Educational, Guidance, School, and Vocational Counselors	321	355	10.6%	34	345	379 Master's degree	Master's degree
174	4	21-1013	Marriage and Family Therapists	150	166	10.7%	16	161	177 Master's degree	Master's degree
175	4	21-1015	Rehabilitation Counselors	313	337	7.7%	24	332	356 Master's degree	Master's degree
176	4	21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	654	802	22.6%	148	745	893 Postsecondary training (non-degree	
177	4	21-1019	Counselors, All Other	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Master's degree
178	4	21-1021	Child, Family, and School Social Workers	555	626	12.8%	71	576	647 Bachelor's degree	Master's degree
179	4	21-1022	Healthcare Social Workers	151	173	14.6%	22	158	180 Bachelor's degree	Master's degree
180 181	4	21-1023 21-1029	Mental Health and Substance Abuse Social Workers Social Workers, All Other	473 326	520 362	9.9% 11.0%	47 36	485 336	532 Master's degree 372 Bachelor's degree	Master's degree Master's degree
182	4	21-1029	Health Educators	320 -S-	302 -S-	11.0% -S-	-S-	-S-	-s- Bachelor's degree	Master's degree
183	4	21-1091	Probation Officers and Correctional Treatment Specialists	480	522	8.8%	42	422	464 Bachelor's degree	Bachelor's degree
184	4	21-1093	Social and Human Service Assistants	775	854	10.2%	79	968	1,047 High school diploma or equivalent	Associate's degree
185	4	21-1094	Community Health Workers	37	40	8.1%	3	43	46 Postsecondary training (non-degree	
186	4	21-1099	Community and Social Service Specialists, All Other	246	266	8.1%	20	289	309 High school diploma or equivalent	Associate's degree
187	3	21-2000	Religious Workers	1,061	1,134	6.9%	73	1,275	1,348	· ·
188	4	21-2011	Clergy	576	613	6.4%	37	644	681 Bachelor's degree	Doctoral or professional degree
189	4	21-2021	Directors, Religious Activities and Education	331	357	7.9%	26	426	452 Bachelor's degree	Bachelor's degree
190	4	21-2099	Religious Workers, All Other	154	164	6.5%	10	205	215 Bachelor's degree	Bachelor's degree
191	2	23-0000	Legal Occupations	1,973	2,087	5.8%	114	1,316	1,430	
192	3	23-1000	Lawyers, Judges, and Related Workers	1,325	1,415	6.8%	90	657	747	
193 194	4	23-1011 23-1012	Lawyers Judicial Law Clerks	992	1,052	6.1% -s-	60 -s-	490 -S-	550 Doctoral or professional degree	Doctoral or professional degree
194	4	23-1012	Administrative Law Judges, Adjudicators, and Hearing Officers	-s- 197	-s- 215	9.1%	18	-s- 99	-s- Doctoral or professional degree 117 Doctoral or professional degree	Doctoral or professional degree Doctoral or professional degree
196	4	23-1021	Arbitrators, Mediators, and Conciliators	-S-	-S-	9.176 -S-	-S-	-S-	-s- Bachelor's degree	Doctoral or professional degree
197	4	23-1022	Judges, Magistrate Judges, and Magistrates	82	89	8.5%	-3-	41	48 Doctoral or professional degree	Doctoral or professional degree
198	3	23-2000	Legal Support Workers	648	672	3.7%	24	659	683	200toral or protocolorial acgree
199	4	23-2011	Paralegals and Legal Assistants	420	458	9.1%	38	464	502 Associate's degree	Bachelor's degree
200	4	23-2091	Court Reporters	-S-	-s-	-s-	-s-	-s-	-s- Postsecondary training (non-degree	
201	4	23-2093	Title Examiners, Abstractors, and Searchers	115	90	-21.7%	-25	91	66 High school diploma or equivalent	Postsecondary training (non-degree)
202	4	23-2099	Legal Support Workers, All Other	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	Associate's degree
203	2	25-0000	Education, Training, and Library Occupations	15,978	17,390	8.8%	1,412	14,945	16,357	
204	3	25-1000	Postsecondary Teachers	1,995	2,049	2.7%	54	1,669	1,723	
205	4	25-1011	Business Teachers, Postsecondary	99	110	11.1%	11	86	97 Master's degree	Doctoral or professional degree
206	4	25-1021	Computer Science Teachers, Postsecondary	15	14	-6.7%	-1	12	11 Master's degree	Doctoral or professional degree
207 208	4	25-1022 25-1031	Mathematical Science Teachers, Postsecondary	62	62	0.0% -s-	0 -s-	51	51 Master's degree	Doctoral or professional degree
208	4	25-1031	Architecture Teachers, Postsecondary Engineering Teachers, Postsecondary	-S- -S-	-S-	-S- -S-	-S- -S-	-S- -S-	-s- Master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
210	4	25-1032	Agricultural Sciences Teachers, Postsecondary	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-S- -S-	-s- master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
211	4	25-1041	Biological Science Teachers, Postsecondary	-s- 58	63	8.6%	-s- 5	50	55 Master's degree	Doctoral or professional degree
212	4	25-1051	Atmospheric, Earth, Marine, and Space Sciences Teachers, Postsecondary	8	7	-12.5%	-1	6	5 Master's degree	Doctoral or professional degree
213	4	25-1052	Chemistry Teachers, Postsecondary	31	32	3.2%	1	26	27 Master's degree	Doctoral or professional degree
214	4	25-1054	Physics Teachers, Postsecondary	15	15	0.0%	0	13	13 Master's degree	Doctoral or professional degree
215	4	25-1061	Anthropology and Archeology Teachers, Postsecondary	-S-	-S-	-S-	-s-	-S-	-s- Master's degree	Doctoral or professional degree
216	4	25-1062	Area, Ethnic, and Cultural Studies Teachers, Postsecondary	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
217	4	25-1063	Economics Teachers, Postsecondary	-S-	-S-	-S-	-8-	-S-	-s- Master's degree	Doctoral or professional degree

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	SOC			2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
218 219	4	25-1064 25-1065	Geography Teachers, Postsecondary Political Science Teachers, Postsecondary	-s- 14	-s- 15	-s- 7.1%	-s- 1	-s- 12	-s- Master's degree 13 Master's degree	Doctoral or professional degree Doctoral or professional degree
220	4	25-1066	Psychology Teachers, Postsecondary	78	84	7.1%	6	67	73 Master's degree	Doctoral or professional degree
221	4	25-1067	Sociology Teachers, Postsecondary	20	20	0.0%	0	16	16 Master's degree	Doctoral or professional degree
222	4	25-1069	Social Sciences Teachers, Postsecondary, All Other	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
223	4	25-1071	Health Specialties Teachers, Postsecondary	-S-	-S-	-s-	-S-	-S-	-s- Master's degree	Doctoral or professional degree
224	4	25-1072	Nursing Instructors and Teachers, Postsecondary	-S-	-S-	-S-	-s-	-S-	-s- Master's degree	Doctoral or professional degree
225	4	25-1081	Education Teachers, Postsecondary	138	140	1.5%	2	115	117 Master's degree	Doctoral or professional degree
226 227	4	25-1082 25-1111	Library Science Teachers, Postsecondary Criminal Justice and Law Enforcement Teachers, Postsecondary	-S- -S-	-S-	-s- -s-	-S- -S-	-s- -s-	-s- Master's degree -s- Master's degree	Doctoral or professional degree Doctoral or professional degree
228	4	25-1111	Social Work Teachers, Postsecondary	-5- -S-	-s- -s-	-s- -s-	-s- -s-	-s- -s-	-s- Master's degree	Doctoral or professional degree
229	4	25-1121	Art, Drama, and Music Teachers, Postsecondary	113	117	3.5%	4	95	99 Master's degree	Doctoral or professional degree
230	4	25-1122	Communications Teachers, Postsecondary	28	28	0.0%	0	23	23 Master's degree	Doctoral or professional degree
231	4	25-1123	English Language and Literature Teachers, Postsecondary	155	160	3.2%	5	130	135 Master's degree	Doctoral or professional degree
232	4	25-1124	Foreign Language and Literature Teachers, Postsecondary	21	21	0.0%	0	18	18 Master's degree	Doctoral or professional degree
233	4	25-1125	History Teachers, Postsecondary	33	33	0.0%	0	27	27 Master's degree	Doctoral or professional degree
234	4	25-1126 25-1191	Philosophy and Religion Teachers, Postsecondary	54	56 44	3.7%	2	45	47 Master's degree	Doctoral or professional degree
235 236	4	25-1191	Graduate Teaching Assistants Recreation and Fitness Studies Teachers, Postsecondary	44 27	44 26	0.0% -3.7%	0 -1	36 22	36 Bachelor's degree 21 Master's degree	Master's degree Doctoral or professional degree
237	4	25-1194	Vocational Education Teachers, Postsecondary	127	140	10.2%	13	110	123 Master's degree	Doctoral or professional degree
238	4	25-1199	Postsecondary Teachers, All Other	586	564	-3.8%	-22	476	454 Master's degree	Doctoral or professional degree
239	3	25-2000	Preschool, Primary, Secondary, and Special Education School Teachers	6,488	7,304	12.6%	816	5,228	6,044	
240	4	25-2011	Preschool Teachers, Except Special Education	597	743	24.5%	146	672	818 Associate's degree	Bachelor's degree
241	4	25-2012	Kindergarten Teachers, Except Special Education	85	94	10.6%	9	89	98 Bachelor's degree	Master's degree
242	4	25-2021	Elementary School Teachers, Except Special Education	2,473	2,753	11.3%	280	1,927	2,207 Bachelor's degree	Master's degree
243	4	25-2022	Middle School Teachers, Except Special and Career/Technical Education	929	1,037	11.6%	108	725	833 Bachelor's degree	Master's degree
244	4	25-2031	Secondary School Teachers, Except Special and Career/Technical Education	1,751	1,956	11.7%	205	1,298	1,503 Bachelor's degree	Master's degree
245 246	4	25-2032 25-2051	Career/Technical Education Teachers, Secondary School Special Education Teachers. Preschool	-S- -S-	-S-	-s- -s-	-S- -S-	-s- -s-	-s- Bachelor's degree -s- Bachelor's degree	Master's degree Master's degree
247	4	25-2051	Special Education Teachers, Freschool Special Education Teachers, Kindergarten and Elementary School	181	200	10.5%	19	143	162 Bachelor's degree	Master's degree
248	4	25-2053	Special Education Teachers, Middle School	108	119	10.2%	11	86	97 Bachelor's degree	Master's degree
249	4	25-2054	Special Education Teachers, Secondary School	97	108	11.3%	11	77	88 Bachelor's degree	Master's degree
250	4	25-2059	Special Education Teachers, All Other	213	234	9.9%	21	168	189 Bachelor's degree	Master's degree
251	3	25-3000	Other Teachers and Instructors	1,030	1,103	7.1%	73	1,216	1,289	
252	4	25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Master's degree
253	4	25-3021	Self-Enrichment Education Teachers	150	159	6.0%	9	176	185 High school diploma or equivalent	Postsecondary training (non-degree)
254 255	4	25-3097 25-3098	Teachers and Instructors, All Other, Except Substitute Teachers Substitute Teachers	572 -s-	611 -s-	6.8%	39 -s-	675 -S-	714 Bachelor's degree -s- Bachelor's degree	Master's degree Master's degree
256	3	25-4000	Librarians, Curators, and Archivists	447	456	2.0%	-s- 9	588	597	Master's degree
257	4	25-4011	Archivists	11	11	0.0%	0	12	12 Master's degree	Master's degree
258	4	25-4012	Curators	-S-	-S-	-S-	-S-	-S-	-s- Master's degree	Master's degree
259	4	25-4013	Museum Technicians and Conservators	-S-	-s-	-s-	-S-	-S-	-s- Bachelor's degree	Master's degree
260	4	25-4021	Librarians	170	183	7.7%	13	176	189 Master's degree	Master's degree
261	4	25-4031	Library Technicians	256	251	-2.0%	-5	389	384 Postsecondary training (non-degree	Postsecondary training (non-degree)
262	3	25-9000	Other Education, Training, and Library Occupations	6,018	6,478	7.6%	460	6,244	6,704	Builded de la cons
263 264	4	25-9011 25-9021	Audio-Visual and Multimedia Collections Specialists Farm and Home Management Advisors	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-s- Associate's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree
265	4	25-9021	Instructional Coordinators	215	235	9.3%	20	209	229 Bachelor's degree	Master's degree
266	4	25-9041	Teacher Assistants	3,329	3,695	11.0%	366	3,701	4,067 High school diploma or equivalent	Associate's degree
267	4	25-9099	Education, Training, and Library Workers, All Other	2,443	2,514	2.9%	71	2,304	2,375 Bachelor's degree	Bachelor's degree
268	2	27-0000	Arts, Design, Entertainment, Sports, and Media Occupations	3,349	3,511	4.8%	162	4,016	4,178	-
269	3	27-1000	Art and Design Workers	857	931	8.6%	74	912	986	
270	4	27-1011	Art Directors	43	45	4.7%	2	47	49 Bachelor's degree	Bachelor's degree
271	4	27-1012 27-1013	Craft Artists	-S-	-s-	-s-	-s-	-s-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
272 273	4	27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators Multimedia Artists and Animators	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	-s- Associate's degree -s- Bachelor's degree	Bachelor's degree Bachelor's degree
274	4	27-1019	Artists and Related Workers, All Other	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent	Bachelor's degree
275	4	27-1021	Commercial and Industrial Designers	-S-	-s-	-s-	-S-	-s-	-s- Bachelor's degree	Bachelor's degree
276	4	27-1023	Floral Designers	149	151	1.3%	2	150	152 High school diploma or equivalent	Postsecondary training (non-degree)
277	4	27-1024	Graphic Designers	163	166	1.8%	3	164	167 Associate's degree	Bachelor's degree
278	4	27-1025	Interior Designers	34	39	14.7%	5	37	42 Associate's degree	Bachelor's degree
279	4	27-1026	Merchandise Displayers and Window Trimmers	-S-	-S-	-S-	-\$-	-S-	-s- High school diploma or equivalent	Associate's degree
280	4	27-1029	Designers, All Other	-S-	-S-	-S-	-S-	-S-	-s- Bachelor's degree	Bachelor's degree
281	3	27-2000	Entertainers and Performers, Sports and Related Workers	1,510	1,620	7.3% -s-	110	2,092	2,202	Bostocondary training (non-dagrae)
282 283	4	27-2011 27-2012	Actors Producers and Directors	-s- 79	-s- 79	0.0%	-s- 0	-s- 77	 -s- High school diploma or equivalent 77 Bachelor's degree 	Postsecondary training (non-degree) Bachelor's degree
284	4	27-2012	Coaches and Scouts	818	898	9.8%	80	1.252	1,332 High school diploma or equivalent	Bachelor's degree
285	4	27-2023	Umpires, Referees, and Other Sports Officials	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
286	4	27-2041	Music Directors and Composers	174	178	2.3%	4	210	214 Bachelor's degree	Master's degree
287	4	27-2042	Musicians and Singers	369	391	6.0%	22	453	475 High school diploma or equivalent	High school diploma or equivalent
288	3	27-3000	Media and Communication Workers	-S-	-s-	-s-	-s-	-S-	-S-	
289	4	27-3011	Radio and Television Announcers	30	20	-33.3%	-10	29	19 Bachelor's degree	Bachelor's degree
290	4	27-3012 27-3022	Public Address System and Other Announcers	33 42	36 27	9.1%	3 -15	40 42	43 High school diploma or equivalent	Bachelor's degree
291 292	4	27-3022	Reporters and Correspondents Public Relations Specialists	42 310	336	-35.7% 8.4%	-15 26	42 335	27 Bachelor's degree 361 Bachelor's degree	Bachelor's degree Bachelor's degree
232	-	21 3031	. adile relations operation	310	550	J.4 /0	20	333	oo i badiididi 3 degree	Daditoloi d'acgree

				2019	2029	Percent	Employment	Replacement	Total	
293	Level 4	27-3041	Standard Occupational Classification Title Editors	Employment 109	Employment 103	Change -5.5%	Change -6	Openings 116		Competitive Education Bachelor's degree
293	4	27-3041	Technical Writers	109 -s-	103 -s-	-5.5% -S-	-6 -S-	116 -S-		sachelor's degree Bachelor's degree
295	4	27-3043	Writers and Authors	31	29	-6.5%	-2	31		Bachelor's degree
296	4	27-3091	Interpreters and Translators	-S-	-S-	-S-	-S-	-S-		Bachelor's degree
297	4	27-3099	Media and Communication Workers, All Other	40	42	5.0%	2	41	· ·	Bachelor's degree
298 299	3 4	27-4000 27-4011	Media and Communication Equipment Workers Audio and Video Equipment Technicians	-s- 49	-s- 60	-s- 22.5%	-s- 11	-s- 58	-s- 69 Postsecondary training (non-degree) P	Postsecondary training (non-degree)
300	4	27-4011	Broadcast Technicians	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree) P	
301	4	27-4014	Sound Engineering Technicians	-S-	-s-	-S-	-s-	-s-	-s- Postsecondary training (non-degree) P	
302	4	27-4021	Photographers	145	103	-29.0%	-42	122		Bachelor's degree
303 304	4 4	27-4031 27-4032	Camera Operators, Television, Video, and Motion Picture Film and Video Editors	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-s- -s-	3	Associate's degree Bachelor's degree
304	4	27-4032	Media and Communication Equipment Workers, All Other	-S- -S-	-S- -S-	-S- -S-	-S- -S-	-s- -s-		ligh school diploma or equivalent
306			Health Care	23,420	26,633	13.7%	3,213	19,652	22,865	g
307	2	29-0000	Healthcare Practitioners and Technical Occupations	14,288	16,084	12.6%	1,796	8,458	10,254	
308	3	29-1000	Health Diagnosing and Treating Practitioners	9,115	10,327	13.3%	1,212	4,624	5,836	North and the conference of the control of the cont
309 310	4	29-1011 29-1021	Chiropractors Dentists, General	101 185	96 206	-5.0% 11.4%	-5 21	26 59		Ooctoral or professional degree Ooctoral or professional degree
311	4	29-1021	Orthodontists	-S-	-S-	-S-	-S-	-S-		Octoral or professional degree
312	4	29-1029	Dentists, All Other Specialists	-S-	-s-	-S-	-s-	-s-		Octoral or professional degree
313	4	29-1031	Dietitians and Nutritionists	136	152	11.8%	16	91		Bachelor's degree
314	4	29-1041	Optometrists	60	65	8.3%	5	19		Octoral or professional degree
315 316	4	29-1051 29-1061	Pharmacists Anesthesiologists	600 -s-	615 -s-	2.5% -s-	15 -s-	273 -s-		Ooctoral or professional degree Ooctoral or professional degree
317	4	29-1062	Family and General Practitioners	-8-	-s-	-S-	-S-	-s-		Octoral or professional degree
318	4	29-1063	Internists, General	-S-	-S-	-S-	-S-	-S-		Octoral or professional degree
319		29-1064	Obstetricians and Gynecologists	-S-	-S-	-S-	-S-	-S-		Ooctoral or professional degree
320	4	29-1065 29-1066	Pediatricians, General	75	81	8.0%	6	23 7		Octoral or professional degree
321 322	4	29-1066	Psychiatrists Surgeons	25 -s-	27 -s-	8.0% -s-	2 -s-	/ -s-		Ooctoral or professional degree Ooctoral or professional degree
323	4	29-1069	Physicians and Surgeons, All Other	756	816	7.9%	60	230		Octoral or professional degree
324	4	29-1071	Physician Assistants	113	145	28.3%	32	74	106 Master's degree N	Master's degree
325	4	29-1081	Podiatrists	-S-	-S-	-S-	-S-	-S-		Ooctoral or professional degree
326	4 4	29-1122 29-1123	Occupational Therapists	290 520	323	11.4% 15.6%	33 81	172 234		Octoral or professional degree
327 328	4	29-1123	Physical Therapists Radiation Therapists	520 -S-	601 -s-	15.6% -S-	-S-	234 -S-		Ooctoral or professional degree Bachelor's degree
329	4	29-1125	Recreational Therapists	84	90	7.1%	6	42		Bachelor's degree
330	4	29-1126	Respiratory Therapists	-\$-	-S-	-S-	-s-	-s-	-s- Associate's degree B	Bachelor's degree
331	4	29-1127	Speech-Language Pathologists	273	343	25.6%	70	165		Ooctoral or professional degree
332 333	4	29-1128 29-1129	Exercise Physiologists Therapists, All Other	-S- -S-	-s- -s-	-s- -s-	-s- -s-	-S- -S-		Bachelor's degree Master's degree
334	4	29-1123	Veterinarians	158	186	17.7%	28	-3-		Poctoral or professional degree
335	4	29-1141	Registered Nurses	4,615	5,303	14.9%	688	2,648		Bachelor's degree
336	4	29-1151	Nurse Anesthetists	-\$-	-S-	-S-	-S-	-S-		Master's degree
337	4	29-1161	Nurse Midwives	-S-	-S-	-S-	-S-	-S-		Master's degree
338 339	4	29-1171 29-1181	Nurse Practitioners Audiologists	171 41	213 45	24.6% 9.8%	42 4	103 17		Master's degree Doctoral or professional degree
340	4	29-1199	Health Diagnosing and Treating Practitioners, All Other	82	96	17.1%	14	41		Octoral or professional degree
341	3	29-2000	Health Technologists and Technicians	4,838	5,389	11.4%	551	3,638	4,189	-
342	4	29-2010	Clinical Laboratory Technologists and Technicians	208	227	9.1%	19	137		Bachelor's degree
343 344	4	29-2021 29-2031	Dental Hygienists Cardiovascular Technologists and Technicians	539 84	626 92	16.1% 9.5%	87 8	390 49		Bachelor's degree Associate's degree
345	4	29-2031	Diagnostic Medical Sonographers	130	160	23.1%	30	80		Bachelor's degree
346	4	29-2033	Nuclear Medicine Technologists	24	26	8.3%	2	14		Bachelor's degree
347	4	29-2034	Radiologic Technologists	382	423	10.7%	41	221		Bachelor's degree
348	4	29-2035	Magnetic Resonance Imaging Technologists	60	67	11.7%	7	35		ssociate's degree
349 350	4	29-2041 29-2051	Emergency Medical Technicians and Paramedics Dietetic Technicians	418 15	449 16	7.4% 6.7%	31 1	288 12	319 Postsecondary training (non-degree) P 13 High school diploma or equivalent A	ostsecondary training (non-degree) ssociate's degree
351	4	29-2052	Pharmacy Technicians	721	767	6.4%	46	600	646 Postsecondary training (non-degree) P	
352	4	29-2053	Psychiatric Technicians	-S-	-s-	-S-	-s-	-s-	-s- Postsecondary training (non-degree) A	
353	4	29-2055	Surgical Technologists	125	143	14.4%	18	108	126 Postsecondary training (non-degree) A	
354 355	4	29-2056 29-2057	Veterinary Technologists and Technicians	217 53	264 59	21.7% 11.3%	47 6	194 45		Associate's degree
356	4	29-2057	Ophthalmic Medical Technicians Licensed Practical and Licensed Vocational Nurses	822	911	10.8%	89	45 660	51 Postsecondary training (non-degree) P 749 Postsecondary training (non-degree) P	
357	4	29-2071	Medical Records and Health Information Technicians	185	200	8.1%	15	123	138 Postsecondary training (non-degree) A	
358	4	29-2081	Opticians, Dispensing	-S-	-S-	-S-	-8-	-S-	-s- High school diploma or equivalent P	Postsecondary training (non-degree)
359	4	29-2091	Orthotists and Prosthetists	-s-	-S-	-S-	-S-	-S-		Bachelor's degree
360 361	4	29-2092 29-2099	Hearing Aid Specialists	69 239	79 277	14.5% 15.9%	10 38	50 175		digh school diploma or equivalent
361	3	29-2099	Health Technologists and Technicians, All Other Other Healthcare Practitioners and Technical Occupations	335	368	9.9%	38	175 196	213 Postsecondary training (non-degree) P 229	osisecondary training (non-degree)
363	4	29-9011	Occupational Health and Safety Specialists	185	198	7.0%	13	108	220	Bachelor's degree
364	4	29-9012	Occupational Health and Safety Technicians	-S-	-S-	-S-	-s-	-S-	-s- Bachelor's degree B	Bachelor's degree
365	4	29-9091	Athletic Trainers	62	73	17.7%	11	37		Master's degree
366 367	4 4	29-9092 29-9099	Genetic Counselors Healthcare Practitioners and Technical Workers, All Other	-S- 69	-s- 78	-s- 13.0%	-s- 9	-s- 41		Master's degree Associate's degree
307	-	20 3033	realitione i raditioners and reconflict Workers, All Other	69	10	13.070	9		oo naadalata a degree A	accordic a degree

	soc	soc		2019	2029	Percent	Employment	Replacement	Total
			Standard Occupational Classification Title	Employment		Change	Change	Openings	Openings Typical Entry-Level Education Competitive Education
368 369	2	31-0000 31-1000	Healthcare Support Occupations	9,132	10,549 5,278	15.5% 14.1%	1,417 654	11,194	12,611 6,203
370	4	31-1000	Nursing, Psychiatric, and Home Health Aides Home Health Aides	4,624 -s-	5,278 -S-	14.1% -S-	-S-	5,549 -s-	-s- Less than high school Postsecondary training (non-degree)
371	4	31-1011	Psychiatric Aides	1,333	1,473	10.5%	140	1,572	1,712 High school diploma or equivalent High school diploma or equivalent
372	4	31-1014	Nursing Assistants	2,029	2,289	12.8%	260	2,420	2,680 Postsecondary training (non-degree) Postsecondary training (non-degree)
373	4	31-1015	Orderlies	-S-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
374	3	31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	226	279	23.5%	53	306	359
375	4	31-2011	Occupational Therapy Assistants	-S-	-S-	-S-	-\$-	-S-	-s- Associate's degree Associate's degree
376 377	4	31-2012	Occupational Therapy Aides	-S-	-S-	-S-	-S-	-s- 158	-s- High school diploma or equivalent Postsecondary training (non-degree)
378	4	31-2021 31-2022	Physical Therapist Assistants Physical Therapist Aides	111 71	144 82	29.7% 15.5%	33 11	95	191 Associate's degree Associate's degree 106 High school diploma or equivalent Associate's degree
379	3	31-9000	Other Healthcare Support Occupations	4,282	4,992	16.6%	710	5,339	6,049
380	4	31-9011	Massage Therapists	385	461	19.7%	76	493	569 Postsecondary training (non-degree) Postsecondary training (non-degree)
381	4	31-9091	Dental Assistants	836	971	16.2%	135	1,012	1,147 Postsecondary training (non-degree) Postsecondary training (non-degree)
382	4	31-9092	Medical Assistants	2,008	2,411	20.1%	403	2,434	2,837 Postsecondary training (non-degree) Postsecondary training (non-degree)
383	4	31-9093	Medical Equipment Preparers	142	158	11.3%	16	171	187 Postsecondary training (non-degree) Postsecondary training (non-degree)
384	4	31-9094	Medical Transcriptionists	114	97	-14.9%	-17	147 149	130 Postsecondary training (non-degree) Associate's degree
385 386	4 4	31-9095 31-9096	Pharmacy Aides Veterinary Assistants and Laboratory Animal Caretakers	123 223	110 271	-10.6% 21.5%	-13 48	398	136 High school diploma or equivalent 446 High school diploma or equivalent Postsecondary training (non-degree)
387	4	31-9097	Phlebotomists	144	168	16.7%	24	165	189 Postsecondary training (non-degree) Postsecondary training (non-degree)
388	4	31-9099	Healthcare Support Workers, All Other	307	345	12.4%	38	370	408 High school diploma or equivalent Postsecondary training (non-degree)
389			Service	52,302	58,979	12.8%	6,677	83,729	90,406
390	2	33-0000	Protective Service Occupations	5,225	5,522	5.7%	297	5,697	5,994
391	3	33-1000	Supervisors of Protective Service Workers	548	579	5.7%	31	390	421
392	4	33-1011	First-Line Supervisors of Correctional Officers	86	84	-2.3%	-2	60	58 High school diploma or equivalent Bachelor's degree
393 394	4 4	33-1012 33-1021	First-Line Supervisors of Police and Detectives First-Line Supervisors of Fire Fighting and Prevention Workers	222 152	239 163	7.7% 7.2%	17 11	143 100	160 High school diploma or equivalent 111 High school diploma or equivalent Bachelor's degree Bachelor's degree
394	4	33-1021	First-Line Supervisors of Protective Service Workers, All Other	88	93	5.7%	5	87	92 High school diploma or equivalent Bachelor's degree
396	3	33-2000	Fire Fighting and Prevention Workers	652	712	9.2%	60	469	529
397	4	33-2011	Firefighters	634	691	9.0%	57	451	508 Postsecondary training (non-degree) Associate's degree
398	4	33-2021	Fire Inspectors and Investigators	-S-	-s-	-S-	-\$-	-S-	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
399	4	33-2022	Forest Fire Inspectors and Prevention Specialists	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent Associate's degree
400	3	33-3000	Law Enforcement Workers	2,301	2,356	2.4%	55	1,842	1,897
401	4	33-3011	Bailiffs	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
402	4	33-3012	Correctional Officers and Jailers	1,192	1,167	-2.1%	-25	1,040	1,015 High school diploma or equivalent Postsecondary training (non-degree)
403 404	4	33-3021 33-3041	Detectives and Criminal Investigators Parking Enforcement Workers	80 12	85 8	6.3% -33.3%	5 -4	53 7	58 Associate's degree Bachelor's degree 3 High school diploma or equivalent High school diploma or equivalent
404	4	33-3041	Police and Sheriff's Patrol Officers	1,012	1,091	-33.3% 7.8%	-4 79	738	817 High school diploma or equivalent 817 High school diploma or equivalent Associate's degree
406	4	33-3052	Transit and Railroad Police	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
407	3	33-9000	Other Protective Service Workers	1,724	1,875	8.8%	151	2,996	3,147
408	4	33-9011	Animal Control Workers	-s-	-s-	-S-	-s-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
409	4	33-9021	Private Detectives and Investigators	102	111	8.8%	9	93	102 Associate's degree Associate's degree
410	4	33-9031	Gaming Surveillance Officers and Gaming Investigators	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
411	4	33-9032	Security Guards	680	735	8.1%	55	911	966 High school diploma or equivalent High school diploma or equivalent
412 413	4	33-9091 33-9092	Crossing Guards Lifequards, Ski Patrol, and Other Recreational Protective Service Workers	401 312	447 332	11.5% 6.4%	46 20	695 778	741 High school diploma or equivalent 798 High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
413	4	33-9092	Protective Service Workers, All Other	182	195	7.1%	13	455	468 High school diploma or equivalent High school diploma or equivalent
415	2	35-0000	Food Preparation and Serving Related Occupations	22,919	25,364	10.7%	2,445	41,502	43,947
416	3	35-1000	Supervisors of Food Preparation and Serving Workers	1,817	1,985	9.3%	168	2,869	3,037
417	4	35-1011	Chefs and Head Cooks	143	159	11.2%	16	198	214 Postsecondary training (non-degree) Postsecondary training (non-degree)
418	4	35-1012	First-Line Supervisors of Food Preparation and Serving Workers	1,674	1,826	9.1%	152	2,671	2,823 High school diploma or equivalent Postsecondary training (non-degree)
419	3	35-2000	Cooks and Food Preparation Workers	5,026	5,577	11.0%	551	7,921	8,472
420	4	35-2011	Cooks, Fast Food	542	484	-10.7%	-58	725	667 Less than high school High school diploma or equivalent
421 422	4 4	35-2012 35-2013	Cooks, Institution and Cafeteria Cooks, Private Household	875 -s-	960 -s-	9.7% -s-	85 -S-	1,298 -s-	1,383 Less than high school High school diploma or equivalent
422	4	35-2013	Cooks, Private Household Cooks, Restaurant	2,169	2,585	19.2%	-s- 416	3,363	-s- Postsecondary training (non-degree) Postsecondary training (non-degree) 3,779 Less than high school High school diploma or equivalent
424	4	35-2014	Cooks, Short Order	126	145	15.1%	19	192	211 Less than high school High school diploma or equivalent
425	4	35-2019	Cooks, All Other	-S-	-S-	-S-	-S-	-S-	-s- Less than high school High school diploma or equivalent
426	4	35-2021	Food Preparation Workers	1,294	1,377	6.4%	83	2,310	2,393 Less than high school High school diploma or equivalent
427	3	35-3000	Food and Beverage Serving Workers	13,666	15,253	11.6%	1,587	26,371	27,958
428	4	35-3011	Bartenders	1,029	1,120	8.8%	91	1,890	1,981 Less than high school Postsecondary training (non-degree)
429	4	35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	7,731	8,902	15.2%	1,171	14,809	15,980 Less than high school High school diploma or equivalent
430	4	35-3022	Counter Attendants, Cafeteria, Food Concession, and Coffee Shop	1,005	1,051	4.6%	46	2,231	2,277 Less than high school High school diploma or equivalent
431 432	4	35-3031	Waiters and Waitresses	3,090 811	3,234 946	4.7% 16.7%	144 135	6,069	6,213 Less than high school High school diploma or equivalent
432 433	3	35-3041 35-9000	Food Servers, Nonrestaurant Other Food Preparation and Serving Related Workers	811 2,410	946 2,549	16.7% 5.8%	135 139	1,372 4,341	1,507 Less than high school High school diploma or equivalent 4,480
433	4	35-9000	Dining Room and Cafeteria Attendants and Bartender Helpers	624	2,549 693	11.1%	69	1,125	1,194 Less than high school High school diploma or equivalent
435	4	35-9021	Dishwashers	1,268	1,288	1.6%	20	2,028	2,048 Less than high school High school diploma or equivalent
436	4	35-9031	Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	430	468	8.8%	38	1,028	1,066 Less than high school High school diploma or equivalent
437	4	35-9099	Food Preparation and Serving Related Workers, All Other	88	100	13.6%	12	160	172 Less than high school High school diploma or equivalent
438	2	37-0000	Building and Grounds Cleaning and Maintenance Occupations	8,798	9,996	13.6%	1,198	12,209	13,407
439	3	37-1000	Supervisors of Building and Grounds Cleaning and Maintenance Workers	651	758	16.4%	107	775	882
440	4	37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	170	193	13.5%	23	206	229 High school diploma or equivalent Postsecondary training (non-degree)
441	4	37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	481	565	17.5%	84	569	653 High school diploma or equivalent Postsecondary training (non-degree)

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D	SOC	SOC	Chandred Conventional Classification Title	2019	2029	Percent	Employment	Replacement	Total	Commentative Education
442	Level 3	Code 37-2000	Standard Occupational Classification Title Building Cleaning and Pest Control Workers	Employment 5,018	Employment 5,627	Change 12.1%	Change 609	Openings 7,070	Openings Typical Entry-Level Education 7.679	Competitive Education
443	4	37-2000	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	3,255	3,614	11.0%	359	4,523	4,882 Less than high school	High school diploma or equivalent
444	4	37-2012	Maids and Housekeeping Cleaners	1,631	1,859	14.0%	228	2,350	2,578 Less than high school	High school diploma or equivalent
445	4	37-2021	Pest Control Workers	132	154	16.7%	22	197	219 High school diploma or equivalent	High school diploma or equivalent
446	3	37-3000	Grounds Maintenance Workers	3,129	3,611	15.4%	482	4,364	4,846	
447	4	37-3011	Landscaping and Groundskeeping Workers	2,292	2,677	16.8%	385	3,218	3,603 Less than high school	High school diploma or equivalent
448	4	37-3012	Pesticide Handlers, Sprayers, and Applicators, Vegetation	308	339	10.1%	31	419	450 High school diploma or equivalent	High school diploma or equivalent
449 450	4	37-3013 37-3019	Tree Trimmers and Pruners Grounds Maintenance Workers, All Other	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	 -s- High school diploma or equivalent -s- Less than high school 	High school diploma or equivalent High school diploma or equivalent
451	2	39-0000	Personal Care and Service Occupations	15,360	18,097	17.8%	2,737	24,321	27,058	riigit school diploma of equivalent
452	3	39-1000	Supervisors of Personal Care and Service Workers	642	719	12.0%	77	679	756	
453	4	39-1010	First-Line Supervisors of Gaming Workers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
454	4	39-1021	First-Line Supervisors of Personal Service Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
455	3	39-2000	Animal Care and Service Workers	337	420	24.6%	83	600	683	
456 457	4	39-2011 39-2021	Animal Trainers Nonfarm Animal Caretakers	71 266	92 328	29.6% 23.3%	21 62	119 481	140 High school diploma or equivalent 543 Less than high school	High school diploma or equivalent Postsecondary training (non-degree)
458	3	39-3000	Entertainment Attendants and Related Workers	482	534	10.8%	52	1.114	1,166	r ostsecondary training (non-degree)
459	4	39-3011	Gaming Dealers	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
460	4	39-3012	Gaming and Sports Book Writers and Runners	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
461	4	39-3019	Gaming Service Workers, All Other	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
462	4	39-3021	Motion Picture Projectionists	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
463	4	39-3031	Ushers, Lobby Attendants, and Ticket Takers	76	85	11.8%	9	196	205 Less than high school	High school diploma or equivalent
464 465	4 4	39-3091 39-3092	Amusement and Recreation Attendants Costume Attendants	318 -s-	340 -s-	6.9%	22	758 -s-	780 Less than high school	High school diploma or equivalent
466	4	39-3092	Locker Room, Coatroom, and Dressing Room Attendants	-s- -s-	-S- -S-	-S- -S-	-S- -S-	-s- -s-	 -s- High school diploma or equivalent -s- High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
467	4	39-3099	Entertainment Attendants and Related Workers, All Other	-S-	-s-	-s-	-s-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
468	3	39-4000	Funeral Service Workers	55	56	1.8%	1	71	72	riigit school diploma of equivalent
469	4	39-4021	Funeral Attendants	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
470	4	39-4031	Morticians, Undertakers, and Funeral Directors	-S-	-S-	-S-	-S-	-S-	-s- Associate's degree	Associate's degree
471	3	39-5000	Personal Appearance Workers	1,121	1,189	6.1%	68	1,409	1,477	
472	4	39-5012	Hairdressers, Hairstylists, and Cosmetologists	852	902	5.9%	50	1,092	1,142 Postsecondary training (non-degree	
473	4	39-5092	Manicurists and Pedicurists	226	242	7.1%	16	267	283 Postsecondary training (non-degree	
474	4	39-5094	Skincare Specialists	43	45	4.7%	2	50	52 Postsecondary training (non-degree	e) Postsecondary training (non-degree)
475 476	3 4	39-6000	Baggage Porters, Bellhops, and Concierges	-S-	-s-	-S-	-s-	-s-	-s- -s- High school diploma or equivalent	High school diploms or equivalent
477	4	39-6011 39-6012	Baggage Porters and Bellhops Concierges	-S- -S-	-s- -s-	-s- -s-	-S- -S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
478	3	39-7000	Tour and Travel Guides	-S-	-S-	-S-	-s-	-S-	-S-	riigit school diploma of equivalent
479	4	39-7010	Tour and Travel Guides	-S-	-S-	-S-	-s-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent
480	3	39-9000	Other Personal Care and Service Workers	12,586	15,038	19.5%	2,452	20,212	22,664	
481	4	39-9011	Childcare Workers	1,650	1,969	19.3%	319	2,700	3,019 High school diploma or equivalent	Postsecondary training (non-degree)
482	4	39-9021	Personal Care Aides	4,509	5,567	23.5%	1,058	7,022	8,080 Less than high school	High school diploma or equivalent
483 484	4 4	39-9031 39-9032	Fitness Trainers and Aerobics Instructors Recreation Workers	444 937	496	11.7% 17.9%	52 168	780	832 High school diploma or equivalent	Postsecondary training (non-degree)
484 485	4	39-9032 39-9041	Recreation workers Residential Advisors	937 190	1,105 218	17.9%	168	1,696 310	1,864 High school diploma or equivalent 338 High school diploma or equivalent	Bachelor's degree Bachelor's degree
486	4	39-9099	Personal Care and Service Workers, All Other	4,856	5,683	17.0%	827	7,704	8,531 High school diploma or equivalent	High school diploma or equivalent
487		00 0000	Sales and Related	26,022	26,800	3.0%	778	36,478	37,256	riight conton diploma of equivalent
488	2	41-0000	Sales and Related Occupations	26,022	26,800	3.0%	778	36,478	37,256	
489	3	41-1000	Supervisors of Sales Workers	3,832	3,963	3.4%	131	4,167	4,298	
490	4	41-1011	First-Line Supervisors of Retail Sales Workers	3,039	3,123	2.8%	84	3,387	3,471 High school diploma or equivalent	Postsecondary training (non-degree)
491	4	41-1012	First-Line Supervisors of Non-Retail Sales Workers	793	840	5.9%	47	780	827 High school diploma or equivalent	Associate's degree
492 493	3	41-2000 41-2011	Retail Sales Workers Cashiers	13,862 5,150	13,948 5,007	0.6% -2.8%	86 -143	22,232 9,581	22,318 9,438 Less than high school	High school diploms or equivalent
494	4	41-2011	Gaming Change Persons and Booth Cashiers	5,150 -S-	5,007 -S-	-2.0% -S-	-143 -S-	9,561 -S-	-s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
495	4	41-2012	Counter and Rental Clerks	587	627	6.8%	40	778	818 Less than high school	High school diploma or equivalent
496	4	41-2022	Parts Salespersons	-S-	-s-	-s-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
497	4	41-2031	Retail Salespersons	7,524	7,648	1.7%	124	11,081	11,205 Less than high school	High school diploma or equivalent
498	3	41-3000	Sales Representatives, Services	2,159	2,303	6.7%	144	2,517	2,661	
499	4	41-3011	Advertising Sales Agents	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
500	4	41-3021	Insurance Sales Agents	600	672	12.0%	72	618	690 Postsecondary training (non-degree	
501 502	4	41-3031 41-3041	Securities, Commodities, and Financial Services Sales Agents Travel Agents	404 -s-	426 -s-	5.5% -s-	22 -s-	393 -s-	415 Bachelor's degree	Bachelor's degree
502	4	41-3041	Sales Representatives, Services, All Other	1.006	1.073	6.7%	67	1.316	 -s- High school diploma or equivalent 1,383 High school diploma or equivalent 	Postsecondary training (non-degree) Postsecondary training (non-degree)
	3	41-4000	Sales Representatives, Wholesale and Manufacturing	1,982	2,222	12.1%	240	2,206	2.446	r ostsecondary training (non degree)
505	4	41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	232	259	11.6%	27	258	285 Bachelor's degree	Bachelor's degree
506	4	41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,750	1,963	12.2%	213	1,948	2,161 High school diploma or equivalent	Associate's degree
507	3	41-9000	Other Sales and Related Workers	4,187	4,364	4.2%	177	5,356	5,533	-
508	4	41-9011	Demonstrators and Product Promoters	1,036	1,171	13.0%	135	1,890	2,025 High school diploma or equivalent	High school diploma or equivalent
509	4	41-9012	Models	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
510	4	41-9021	Real Estate Brokers	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
511 512	4 4	41-9022 41-9031	Real Estate Sales Agents	1,613	1,746	8.3% -s-	133 -s-	1,596	1,729 Postsecondary training (non-degree	
512	4	41-9031	Sales Engineers Telemarketers	-S- -S-	-s- -s-	-S- -S-	-S- -S-	-s- -s-	-s- Bachelor's degree -s- Less than high school	Bachelor's degree High school diploma or equivalent
	4	41-9091	Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	137	94	-31.4%	-43	142	99 High school diploma or equivalent	High school diploma or equivalent
	4	41-9099	Sales and Related Workers, All Other	193	207	7.3%	14	261	275 High school diploma or equivalent	High school diploma or equivalent
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		SOC	Out of the Louis o	2019	2029	Percent	Employment	Replacement	Total	O
<u>Row</u> 516	Level	Code	Standard Occupational Classification Title Office and Administrative Support	27,119	Employment 37,751	Change 1.7%	Change 632	Openings 43,732	Openings Typical Entry-Level Education 44,364	Competitive Education
517	2	43-0000	Office and Administrative Support Occupations	37,119	37,751	1.7%	632	43,732	44,364	
518	3	43-1000	Supervisors of Office and Administrative Support Workers	-S-	-s-	-S-	-S-	-S-	-S-	
519	4	43-1011	First-Line Supervisors of Office and Administrative Support Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Associate's degree
520	3	43-2000	Communications Equipment Operators	-S-	-s-	-S-	-s-	-s-	-S-	I Park and and Park are an analysis at
521 522	4	43-2011 43-3000	Switchboard Operators, Including Answering Service Financial Clerks	31 5,339	26 5.312	-16.1% -0.5%	-5 -27	35 6,153	30 High school diploma or equivalent 6.126	High school diploma or equivalent
523	4	43-3000	Bill and Account Collectors	5,339	5,312	-0.5% -4.2%	-2 <i>1</i> -5	139	134 High school diploma or equivalent	High school diploma or equivalent
524	4	43-3021	Billing and Posting Clerks	463	514	11.0%	51	530	581 High school diploma or equivalent	High school diploma or equivalent
525	4	43-3031	Bookkeeping, Accounting, and Auditing Clerks	3,794	3,794	0.0%	0	4,420	4,420 Postsecondary training (non-degree	
526	4	43-3041	Gaming Cage Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	High school diploma or equivalent
527	4	43-3051	Payroll and Timekeeping Clerks	299	296	-1.0%	-3	327	324 High school diploma or equivalent	Postsecondary training (non-degree)
528 529	4	43-3061 43-3071	Procurement Clerks Tellers	106 513	106 439	0.0% -14.4%	0 -74	110 573	110 High school diploma or equivalent 499 High school diploma or equivalent	Bachelor's degree High school diploma or equivalent
530	4	43-3099	Financial Clerks, All Other	-S-	-S-	-14.470	-7-4 -S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
531	3	43-4000	Information and Record Clerks	8,550	8,975	5.0%	425	11,009	11,434	9
532	4	43-4011	Brokerage Clerks	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
533	4	43-4021	Correspondence Clerks	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
534	4	43-4031	Court, Municipal, and License Clerks	432	470	8.8%	38 -1	418	456 High school diploma or equivalent	Postsecondary training (non-degree)
535 536	4	43-4041 43-4051	Credit Authorizers, Checkers, and Clerks Customer Service Representatives	17 3,090	16 3,232	-5.9% 4.6%	-1 142	16 4,213	15 High school diploma or equivalent 4,355 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
537	4	43-4061	Eligibility Interviewers, Government Programs	3,090	3,232	8.8%	31	349	380 High school diploma or equivalent	Postsecondary training (non-degree)
538	4	43-4071	File Clerks	184	166	-9.8%	-18	216	198 High school diploma or equivalent	High school diploma or equivalent
539	4	43-4081	Hotel, Motel, and Resort Desk Clerks	120	124	3.3%	4	207	211 High school diploma or equivalent	High school diploma or equivalent
540	4	43-4111	Interviewers, Except Eligibility and Loan	526	542	3.0%	16	657	673 High school diploma or equivalent	High school diploma or equivalent
541	4	43-4121	Library Assistants, Clerical	102	97	-4.9%	-5	150	145 High school diploma or equivalent	Postsecondary training (non-degree)
542 543	4	43-4131 43-4141	Loan Interviewers and Clerks New Accounts Clerks	276 129	280 119	1.5% -7.8%	-10	282 143	286 High school diploma or equivalent133 High school diploma or equivalent	High school diploma or equivalent Bachelor's degree
544	4	43-4151	Order Clerks	171	170	-0.6%	-10	196	195 High school diploma or equivalent	Postsecondary training (non-degree)
545	4	43-4161	Human Resources Assistants, Except Payroll and Timekeeping	125	125	0.0%	0	142	142 High school diploma or equivalent	Postsecondary training (non-degree)
546	4	43-4171	Receptionists and Information Clerks	2,052	2,203	7.4%	151	2,857	3,008 High school diploma or equivalent	High school diploma or equivalent
547	4	43-4181	Reservation and Transportation Ticket Agents and Travel Clerks	69	74	7.3%	5	81	86 High school diploma or equivalent	High school diploma or equivalent
548	4	43-4199	Information and Record Clerks, All Other	859	922	7.3%	63	1,030	1,093 High school diploma or equivalent	High school diploma or equivalent
549 550	3 4	43-5000 43-5011	Material Recording, Scheduling, Dispatching, and Distributing Workers Cargo and Freight Agents	6,267 63	6,750 76	7.7% 20.6%	483 13	7,383 66	7,866 79 High school diploma or equivalent	High school diploma or equivalent
551	4	43-5011	Couriers and Messengers	163	199	20.6%	36	172	208 High school diploma or equivalent	High school diploma or equivalent
552	4	43-5031	Police, Fire, and Ambulance Dispatchers	214	232	8.4%	18	211	229 High school diploma or equivalent	High school diploma or equivalent
553	4	43-5032	Dispatchers, Except Police, Fire, and Ambulance	390	431	10.5%	41	388	429 High school diploma or equivalent	High school diploma or equivalent
554	4	43-5041	Meter Readers, Utilities	38	34	-10.5%	-4	35	31 High school diploma or equivalent	High school diploma or equivalent
555	4	43-5051	Postal Service Clerks	135	150	11.1%	15	109	124 High school diploma or equivalent	High school diploma or equivalent
556 557	4	43-5052 43-5053	Postal Service Mail Carriers	553 33	612 35	10.7% 6.1%	59 2	432 29	491 High school diploma or equivalent	High school diploma or equivalent
558	4	43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Operators Production, Planning, and Expediting Clerks	460	511	11.1%	2 51	506	31 High school diploma or equivalent 557 High school diploma or equivalent	High school diploma or equivalent Bachelor's degree
559	4	43-5071	Shipping, Receiving, and Traffic Clerks	957	1.008	5.3%	51	975	1,026 High school diploma or equivalent	High school diploma or equivalent
560	4	43-5081	Stock Clerks and Order Fillers	3,185	3,377	6.0%	192	4,368	4,560 Less than high school	High school diploma or equivalent
561	4	43-5111	Weighers, Measurers, Checkers, and Samplers, Recordkeeping	76	85	11.8%	9	92	101 High school diploma or equivalent	High school diploma or equivalent
562	3	43-6000	Secretaries and Administrative Assistants	7,351	7,107	-3.3%	-244	8,092	7,848	
563	4	43-6011	Executive Secretaries and Executive Administrative Assistants	813	669	-17.7%	-144	830	686 High school diploma or equivalent	Associate's degree
564 565	4 4	43-6012 43-6013	Legal Secretaries Medical Secretaries	284 1,688	230 1,934	-19.0% 14.6%	-54 246	288 2,027	234 Postsecondary training (non-degree 2,273 High school diploma or equivalent	Postsecondary training (non-degree)
566	4	43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	4,566	4,274	-6.4%	-292	4,947	4,655 High school diploma or equivalent	Associate's degree
567	3	43-9000	Other Office and Administrative Support Workers	7,674	7,651	-0.3%	-23	9,051	9,028	7 Boodiato o dogreo
568	4	43-9011	Computer Operators	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
569	4	43-9021	Data Entry Keyers	271	209	-22.9%	-62	277	215 High school diploma or equivalent	High school diploma or equivalent
570	4	43-9022	Word Processors and Typists	15	10	-33.3%	-5	15	10 High school diploma or equivalent	Postsecondary training (non-degree)
571 572	4	43-9031 43-9041	Desktop Publishers	73 319	73 341	0.0% 6.9%	0	85 328	85 Postsecondary training (non-degree	
573	4	43-9051	Insurance Claims and Policy Processing Clerks Mail Clerks and Mail Machine Operators, Except Postal Service	106	103	-2.8%	22 -3	115	350 High school diploma or equivalent 112 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
574	4	43-9061	Office Clerks, General	5,670	5,647	-0.4%	-23	6,773	6,750 High school diploma or equivalent	Postsecondary training (non-degree)
575	4	43-9071	Office Machine Operators, Except Computer	75	68	-9.3%	-7	91	84 High school diploma or equivalent	High school diploma or equivalent
576	4	43-9081	Proofreaders and Copy Markers	-S-	-s-	-S-	-s-	-s-	-s- High school diploma or equivalent	Bachelor's degree
577	4	43-9111	Statistical Assistants	41	35	-14.6%	-6	47	41 Bachelor's degree	Master's degree
578	4	43-9199	Office and Administrative Support Workers, All Other	1,094	1,156	5.7%	62	1,308	1,370 High school diploma or equivalent	High school diploma or equivalent
579	2	45-0000	Farming, Fishing, and Forestry	14,526	15,401	6.0%	875 875	24,266	25,141 25,141	
580 581	2	45-0000	Farming, Fishing, and Forestry Occupations Supervisors of Farming, Fishing, and Forestry Workers	14,526 818	15,401 866	6.0% 5.9%	48	24,266 1,244	1,292	
582	4	45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	818	866	5.9%	48	1,244	1,292 High school diploma or equivalent	High school diploma or equivalent
583	3	45-2000	Agricultural Workers	11,869	12,743	7.4%	874	19,976	20,850	
584	4	45-2011	Agricultural Inspectors	84	90	7.1%	6	127	133 Bachelor's degree	Bachelor's degree
585	4	45-2021	Animal Breeders	-S-	-s-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
586	4	45-2041	Graders and Sorters, Agricultural Products	591	608	2.9%	17	877	894 Less than high school	High school diploma or equivalent
587 588	4	45-2091 45-2092	Agricultural Equipment Operators Farmworkers and Laborers, Crop, Nursery, and Greenhouse	971 9,304	1,062 10,005	9.4% 7.5%	91 701	1,660 15,763	1,751 High school diploma or equivalent 16,464 Less than high school	High school diploma or equivalent High school diploma or equivalent
589	4	45-2092 45-2093	Farmworkers and Laborers, Grop, Noisery, and Greenhouse Farmworkers, Farm, Ranch, and Aquacultural Animals	9,304 546	575	5.3%	29	916	945 Less than high school	High school diploma or equivalent
590	4	45-2099	Agricultural Workers, All Other	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent	High school diploma or equivalent

Oreg	on Linpi	oyment bep	valuitetti, Workforce and Economic Nesearch Division							
		SOC		2019	2029	Percent	Employment	Replacement	Total	
	Level		Standard Occupational Classification Title		Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
591 592	3 4	45-4000 45-4011	Forest, Conservation, and Logging Workers Forest and Conservation Workers	1,839 -s-	1,792 -s-	-2.6% -s-	-47 -s-	3,046 -s-	2,999 -s- High school diploma or equivalent	High school diploma or equivalent
593	4	45-4011	Fallers	127	112	-11.8%	-s- -15	191	176 High school diploma or equivalent	High school diploma or equivalent
594	4	45-4022	Logging Equipment Operators	591	550	-6.9%	-41	913	872 High school diploma or equivalent	High school diploma or equivalent
595	4	45-4023	Log Graders and Scalers	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
596	4	45-4029	Logging Workers, All Other	304	273	-10.2%	-31	462	431 High school diploma or equivalent	High school diploma or equivalent
597		47.0000	Construction and Extraction	16,894	18,948	12.2%	2,054	19,479	21,533	
598 599	2	47-0000 47-1000	Construction and Extraction Occupations	16,894	18,948 1,150	12.2% 13.3%	2,054 135	19,479 1,125	21,533 1,260	
600	4	47-1000	Supervisors of Construction and Extraction Workers First-Line Supervisors of Construction Trades and Extraction Workers	1,015 1.015	1,150	13.3%	135	1,125	1,260 High school diploma or equivalent	Postsecondary training (non-degree)
601	3	47-2000	Construction Trades Workers	14,631	16,405	12.1%	1,774	16,721	18,495	r ostsecondary training (non degree)
602	4	47-2021	Brickmasons and Blockmasons	151	162	7.3%	11	156	167 High school diploma or equivalent	Postsecondary training (non-degree)
603	4	47-2022	Stonemasons	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
604	4	47-2031	Carpenters	3,286	3,658	11.3%	372	3,593	3,965 High school diploma or equivalent	Postsecondary training (non-degree)
605 606	4	47-2041 47-2042	Carpet Installers Floor Layers, Except Carpet, Wood, and Hard Tiles	194 -s-	198 -s-	2.1% -s-	4 -s-	191	195 Less than high school -s- High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
607	4	47-2042	Floor Sanders and Finishers	-5- -S-	-S-	-S-	-s- -s-	-S- -S-	-s- Less than high school	High school diploma or equivalent
608	4	47-2044	Tile and Marble Setters	204	253	24.0%	49	223	272 Less than high school	High school diploma or equivalent
609	4	47-2051	Cement Masons and Concrete Finishers	581	647	11.4%	66	645	711 Less than high school	High school diploma or equivalent
610	4	47-2061	Construction Laborers	3,137	3,499	11.5%	362	3,691	4,053 Less than high school	High school diploma or equivalent
611	4	47-2071	Paving, Surfacing, and Tamping Equipment Operators	138	155	12.3%	17	182	199 High school diploma or equivalent	High school diploma or equivalent
612	4	47-2072	Pile-Driver Operators	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
613 614	4	47-2073 47-2081	Operating Engineers and Other Construction Equipment Operators Drywall and Ceiling Tile Installers	1,057 187	1,160 195	9.7% 4.3%	103 8	1,278 190	1,381 High school diploma or equivalent 198 Less than high school	Postsecondary training (non-degree)
615	4	47-2081	Tapers	133	142	6.8%	9	136	145 Less than high school	High school diploma or equivalent High school diploma or equivalent
616	4	47-2111	Electricians	1,620	1,894	16.9%	274	2,036	2,310 High school diploma or equivalent	Postsecondary training (non-degree)
617	4	47-2121	Glaziers	89	97	9.0%	8	106	114 High school diploma or equivalent	Postsecondary training (non-degree)
618	4	47-2131	Insulation Workers, Floor, Ceiling, and Wall	160	165	3.1%	5	187	192 Less than high school	High school diploma or equivalent
619	4	47-2132	Insulation Workers, Mechanical	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
620	4	47-2141	Painters, Construction and Maintenance	1,814	2,040	12.5%	226	1,951	2,177 Less than high school	High school diploma or equivalent
621	4	47-2142	Paperhangers	-\$-	-S-	-S-	-S-	-\$-	-s- Less than high school	High school diploma or equivalent
622 623	4	47-2151 47-2152	Pipelayers Plumbers, Pipefitters, and Steamfitters	-s- 673	-s- 795	-s- 18.1%	-s- 122	-s- 815	 -s- High school diploma or equivalent 937 High school diploma or equivalent 	Postsecondary training (non-degree) Postsecondary training (non-degree)
624	4	47-2152	Plasterers and Stucco Masons	-S-	795 -S-	-S-	122 -\$-	-S-	-s- Less than high school	High school diploma or equivalent
625	4	47-2101	Reinforcing Iron and Rebar Workers	-s-	-s- -s-	-s-	-S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent
626	4	47-2181	Roofers	652	710	8.9%	58	703	761 Less than high school	High school diploma or equivalent
627	4	47-2211	Sheet Metal Workers	254	295	16.1%	41	297	338 High school diploma or equivalent	Postsecondary training (non-degree)
628	4	47-2221	Structural Iron and Steel Workers	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
629	3	47-3000	Helpers, Construction Trades	327	375	14.7%	48	473	521	
630 631	4	47-3011 47-3012	HelpersBrickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	110	123 -s-	11.8% -s-	13	157	170 Less than high school	High school diploma or equivalent
632	4	47-3012	HelpersCarpenters HelpersElectricians	-s- 26	30	15.4%	-s- 4	-s- 38	-s- Less than high school42 High school diploma or equivalent	High school diploma or equivalent High school diploma or equivalent
633	4	47-3014	HelpersPainters, Paperhangers, Plasterers, and Stucco Masons	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
634	4	47-3015	HelpersPipelayers, Plumbers, Pipefitters, and Steamfitters	69	83	20.3%	14	102	116 High school diploma or equivalent	High school diploma or equivalent
635	4	47-3016	HelpersRoofers	23	26	13.0%	3	33	36 Less than high school	High school diploma or equivalent
636	4	47-3019	Helpers, Construction Trades, All Other	28	33	17.9%	5	41	46 Less than high school	High school diploma or equivalent
637	3	47-4000	Other Construction and Related Workers	772	854	10.6%	82	952	1,034	
638 639	4	47-4011 47-4031	Construction and Building Inspectors Fence Erectors	192 -s-	217 -s-	13.0% -s-	25	253	278 High school diploma or equivalent	Associate's degree
640	4	47-4031	Hazardous Materials Removal Workers	-S- -S-	-s- -s-	-s- -s-	-s- -s-	-S- -S-	 -s- High school diploma or equivalent -s- High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
641	4	47-4051	Highway Maintenance Workers	227	248	9.3%	21	264	285 High school diploma or equivalent	High school diploma or equivalent
642	4	47-4061	Rail-Track Laying and Maintenance Equipment Operators	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
643	4	47-4071	Septic Tank Servicers and Sewer Pipe Cleaners	70	83	18.6%	13	86	99 Less than high school	High school diploma or equivalent
644	4	47-4090	Miscellaneous Construction and Related Workers	73	80	9.6%	7	95	102 High school diploma or equivalent	High school diploma or equivalent
645	3	47-5000	Extraction Workers	149	164	10.1%	15	208	223	
646	4	47-5021	Earth Drillers, Except Oil and Gas	110	121	10.0%	11	154	165 High school diploma or equivalent	High school diploma or equivalent
647 648	4	47-5031 47-5051	Explosives Workers, Ordnance Handling Experts, and Blasters Rock Splitters, Quarry	-S- -S-	-S- -S-	-s- -s-	-S- -S-	-S- -S-	 -s- High school diploma or equivalent -s- Less than high school 	High school diploma or equivalent High school diploma or equivalent
649	4	47-5051	HelpersExtraction Workers	-5- -S-	-s- -s-	-s- -s-	-5- -S-	-s- -s-	-s- High school diploma or equivalent	High school diploma or equivalent
650	-	47 3001	Installation, Maintenance, and Repair	10,143	10,985	8.3%	842	10,324	11,166	riigir scribor dipiona or equivalent
651	2	49-0000	Installation, Maintenance, and Repair Occupations	10,143	10,985	8.3%	842	10,324	11,166	
652	3	49-1000	Supervisors of Installation, Maintenance, and Repair Workers	644	688	6.8%	44	611	655	
653	4	49-1011	First-Line Supervisors of Mechanics, Installers, and Repairers	644	688	6.8%	44	611	655 High school diploma or equivalent	Postsecondary training (non-degree)
654	3	49-2000	Electrical and Electronic Equipment Mechanics, Installers, and Repairers	680	648	-4.7%	-32	693	661	
655	4	49-2011	Computer, Automated Teller, and Office Machine Repairers	86	91 41	5.8%	5	94 44	99 High school diploma or equivalent	Postsecondary training (non-degree)
656 657	4	49-2021 49-2022	Radio, Cellular, and Tower Equipment Installers and Repairers Telecommunications Equipment Installers and Repairers, Except Line Installers	40 284	41 225	2.5% -20.8%	1 -59	44 280	 45 Postsecondary training (non-degree 221 Postsecondary training (non-degree 	Postsecondary training (non-degree) Postsecondary training (non-degree)
658	4	49-2022	Avionics Technicians	204 -S-	-S-	-20.8% -S-	-59 -S-	280 -S-	-s- Postsecondary training (non-degree	
659	4	49-2092	Electric Motor, Power Tool, and Related Repairers	-S-	-s- -s-	-S-	-S-	-s-	-s- Postsecondary training (non-degree	
660	4	49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	24	26	8.3%	2	21	23 Postsecondary training (non-degree	
661	4	49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	92	94	2.2%	2	81	83 Postsecondary training (non-degree	e) Associate's degree
662	4	49-2095	Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	-S-	-S-	-S-	-S-	-S-	 -s- Postsecondary training (non-degree 	e) Postsecondary training (non-degree)
663	4	49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
664	4	49-2097	Electronic Home Entertainment Equipment Installers and Repairers	-s- 58	-S-	-S-	-S-	-s- 76	-s- Postsecondary training (non-degree	
665	4	49-2098	Security and Fire Alarm Systems Installers	58	68	17.2%	10	76	86 Postsecondary training (non-degree	e) Fosisecondary training (non-degree)

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		SOC		2019	2029	Percent	Employment	Replacement	Total
	Level		Standard Occupational Classification Title	Employment		Change	Change	Openings	Openings Typical Entry-Level Education Competitive Education
666 667	3	49-3000 49-3011	Vehicle and Mobile Equipment Mechanics, Installers, and Repairers Aircraft Mechanics and Service Technicians	3,645 375	3,899 395	7.0% 5.3%	254 20	3,675 315	3,929 335 Postsecondary training (non-degree) Associate's degree
668	4	49-3021	Automotive Body and Related Repairers	328	352	7.3%	24	326	350 High school diploma or equivalent Postsecondary training (non-degree)
669	4	49-3022	Automotive Glass Installers and Repairers	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
670	4	49-3023	Automotive Service Technicians and Mechanics	985	1,010	2.5%	25	971	996 Postsecondary training (non-degree) Associate's degree
671	4	49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	566	632	11.7%	66	554	620 High school diploma or equivalent Postsecondary training (non-degree)
672 673	4	49-3041 49-3042	Farm Equipment Mechanics and Service Technicians	406 328	451 346	11.1% 5.5%	45	426 335	471 High school diploma or equivalent Postsecondary training (non-degree)
674	4	49-3042	Mobile Heavy Equipment Mechanics, Except Engines Rail Car Repairers	13	12	5.5% -7.7%	18 -1	13	353 High school diploma or equivalent Postsecondary training (non-degree) 12 High school diploma or equivalent High school diploma or equivalent
675	4	49-3051	Motorboat Mechanics and Service Technicians	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
676	4	49-3052	Motorcycle Mechanics	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
677	4	49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	21	24	14.3%	3	23	26 High school diploma or equivalent Postsecondary training (non-degree)
678	4	49-3091	Bicycle Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
679	4	49-3092	Recreational Vehicle Service Technicians	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree) Associate's degree
680 681	3	49-3093 49-9000	Tire Repairers and Changers Other Installation, Maintenance, and Repair Occupations	448 5,174	481 5,750	7.4% 11.1%	33 576	512 5,345	545 High school diploma or equivalent High school diploma or equivalent 5.921
682	4	49-9011	Mechanical Door Repairers	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
683	4	49-9012	Control and Valve Installers and Repairers, Except Mechanical Door	56	59	5.4%	3	49	52 High school diploma or equivalent High school diploma or equivalent
684	4	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	574	684	19.2%	110	614	724 Postsecondary training (non-degree) Postsecondary training (non-degree)
685	4	49-9031	Home Appliance Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent Postsecondary training (non-degree)
686	4	49-9041	Industrial Machinery Mechanics	614	681	10.9%	67	593	660 High school diploma or equivalent Postsecondary training (non-degree)
687 688	4	49-9043 49-9044	Maintenance Workers, Machinery Millwrights	72 236	81 282	12.5% 19.5%	9 46	69 223	78 High school diploma or equivalent 269 High school diploma or equivalent Postsecondary training (non-degree)
689	4	49-9044	Refractory Materials Repairers, Except Brickmasons	-S-	202 -S-	19.5% -S-	-S-	-S-	269 High school diploma or equivalent Postsecondary training (non-degree) -s- High school diploma or equivalent High school diploma or equivalent
690	4	49-9051	Electrical Power-Line Installers and Repairers	241	261	8.3%	20	211	231 Postsecondary training (non-degree) Postsecondary training (non-degree)
691	4	49-9052	Telecommunications Line Installers and Repairers	25	22	-12.0%	-3	26	23 High school diploma or equivalent Postsecondary training (non-degree)
692	4	49-9061	Camera and Photographic Equipment Repairers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
693	4	49-9062	Medical Equipment Repairers	53	60	13.2%	7	59	66 Postsecondary training (non-degree) Associate's degree
694	4	49-9063	Musical Instrument Repairers and Tuners	24	22	-8.3%	-2	24	22 Postsecondary training (non-degree) Postsecondary training (non-degree)
695	4	49-9064	Watch Repairers	-S-	-s- 23	-S-	-s-	-s- 23	-s- High school diploma or equivalent Postsecondary training (non-degree)
696 697	4	49-9069 49-9071	Precision Instrument and Equipment Repairers, All Other Maintenance and Repair Workers, General	21 2,260	2,509	9.5% 11.0%	2 249	23 2,311	25 Associate's degree Associate's degree
698	4	49-9071	Wind Turbine Service Technicians	2,200 -S-	2,509 -S-	-S-	249 -S-	2,311 -S-	2,560 High school diploma or equivalent Postsecondary training (non-degree) -s- Associate's degree Associate's degree
699	4	49-9091	Coin, Vending, and Amusement Machine Servicers and Repairers	-S-	-S-	-S-	-s-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
700	4	49-9092	Commercial Divers	-s-	-S-	-S-	-\$-	-S-	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
701	4	49-9094	Locksmiths and Safe Repairers	74	72	-2.7%	-2	79	77 High school diploma or equivalent Postsecondary training (non-degree)
702	4	49-9095	Manufactured Building and Mobile Home Installers	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
703	4	49-9096	Riggers	-S-	-S-	-S-	-S-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
704 705	4 4	49-9097 49-9098	Signal and Track Switch Repairers HelpersInstallation, Maintenance, and Repair Workers	-s- 272	-s- 298	-s- 9.6%	-s- 26	-s- 364	-s- Postsecondary training (non-degree) Postsecondary training (non-degree)
705	4	49-9099	Installation, Maintenance, and Repair Workers, All Other	362	403	11.3%	41	411	390 High school diploma or equivalent 452 High school diploma or equivalent High school diploma or equivalent
707		10 0000	Production	18,839	19.613	4.1%	774	22.434	23,208
708	2	51-0000	Production Occupations	18,839	19,613	4.1%	774	22,434	23,208
709	3	51-1000	Supervisors of Production Workers	1,133	1,202	6.1%	69	1,193	1,262
710	4	51-1011	First-Line Supervisors of Production and Operating Workers	1,133	1,202	6.1%	69	1,193	1,262 High school diploma or equivalent Bachelor's degree
711	3	51-2000	Assemblers and Fabricators	3,567	3,477	-2.5%	-90	4,041	3,951
712 713	4	51-2028 51-2031	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers Engine and Other Machine Assemblers	315 -s-	318	1.0%	3 -s-	360	363 High school diploma or equivalent -s- High school diploma or equivalent Postsecondary training (non-degree)
713	4	51-2031	Structural Metal Fabricators and Fitters	-s- 447	-s- 444	-s- -0.7%	-s- -3	-s- 466	463 High school diploma or equivalent Postsecondary training (non-degree)
715	4	51-2091	Fiberglass Laminators and Fabricators	-S-	-S-	-S-	-s-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
716	4	51-2098	Assemblers and Fabricators, All Other, Including Team Assemblers	2,746	2,655	-3.3%	-91	3,145	3,054 High school diploma or equivalent High school diploma or equivalent
717	3	51-3000	Food Processing Workers	1,771	1,863	5.2%	92	2,478	2,570
718	4	51-3011	Bakers	272	298	9.6%	26	390	416 Less than high school High school diploma or equivalent
719	4	51-3021	Butchers and Meat Cutters	234	248	6.0%	14	298	312 Less than high school Postsecondary training (non-degree)
720	4	51-3022	Meat, Poultry, and Fish Cutters and Trimmers	-S-	-s-	-S-	-s-	-s-	-s- Less than high school High school diploma or equivalent
721 722	4	51-3023 51-3091	Slaughterers and Meat Packers Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	100 -s-	108 -s-	8.0%	8 -s-	129 -s-	137 Less than high school High school diploma or equivalent -s- Less than high school High school diploma or equivalent
723	4	51-3091	Food Batchmakers	814	-s- 857	5.3%	43	1,239	1,282 High school diploma or equivalent High school diploma or equivalent
724	4	51-3093	Food Cooking Machine Operators and Tenders	80	80	0.0%	0	125	125 High school diploma or equivalent High school diploma or equivalent
725	4	51-3099	Food Processing Workers, All Other	-s-	-S-	-S-	-\$-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
726	3	51-4000	Metal Workers and Plastic Workers	3,329	3,614	8.6%	285	3,774	4,059
727	4	51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	218	228	4.6%	10	229	239 High school diploma or equivalent Postsecondary training (non-degree)
728	4	51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	77	105	36.4%	28	93	121 Postsecondary training (non-degree) Postsecondary training (non-degree)
729	4	51-4021	Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	124	128	3.2%	4	157	161 High school diploma or equivalent High school diploma or equivalent
730 731	4	51-4022 51-4023	Forging Machine Setters, Operators, and Tenders, Metal and Plastic Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	-s- 56	-s- 56	-s- 0.0%	-s- 0	-s- 53	-s- High school diploma or equivalent 53 High school diploma or equivalent High school diploma or equivalent
732	4	51-4023	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	153	162	5.9%	9	176	185 High school diploma or equivalent High school diploma or equivalent
733	4	51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	-s-	-s-	-S-	-s-	-s-	-s- High school diploma or equivalent High school diploma or equivalent
734	4	51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	285	311	9.1%	26	339	365 High school diploma or equivalent High school diploma or equivalent
735	4	51-4034	Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	23	24	4.4%	1	26	27 High school diploma or equivalent High school diploma or equivalent
736	4	51-4035	Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	41	41	0.0%	0	43	43 High school diploma or equivalent High school diploma or equivalent
737	4	51-4041	Machinists	382	421	10.2%	39	407	446 High school diploma or equivalent Postsecondary training (non-degree)
738 739	4	51-4051 51-4052	Metal-Refining Furnace Operators and Tenders Pourers and Casters, Metal	183 19	179 21	-2.2% 10.5%	-4 2	214 24	210 High school diploma or equivalent 26 High school diploma or equivalent High school diploma or equivalent High school diploma or equivalent
740	4	51-4052	Model Makers, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent High school diploma or equivalent
1 40	-	51 4001	most makers, metal and risdite	-3-	-5-	3-	-5-	-3-	5g 55561 diploma of equivalent Tright solicor diploma of equivalent

Bow	SOC Level		Standard Occupational Classification Title	2019	2029	Percent		Replacement	Total	Competitive Education
741	4	51-4071	Foundry Mold and Coremakers	Employment -s-	-S-	Change -s-	Change -S-	Openings -s-	Openings Typical Entry-Level Education -s- High school diploma or equivalent	High school diploma or equivalent
742	4	51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	492	536	8.9%	44	561	605 High school diploma or equivalent	High school diploma or equivalent
743	4	51-4081	Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	47	54	14.9%	7	53	60 High school diploma or equivalent	High school diploma or equivalent
744	4	51-4111	Tool and Die Makers	26	29	11.5%		27	30 Postsecondary training (non-degree	
745 746	4 4	51-4121 51-4122	Welders, Cutters, Solderers, and Brazers Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	706 24	824 24	16.7% 0.0%	118 0	838 26	956 High school diploma or equivalent	Postsecondary training (non-degree) Postsecondary training (non-degree)
746	4	51-4122	Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	69	70	1.5%	1	73	26 High school diploma or equivalent 74 High school diploma or equivalent	High school diploma or equivalent
748	4	51-4192	Layout Workers, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
749	4	51-4193	Plating and Coating Machine Setters, Operators, and Tenders, Metal and Plastic	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
750	4	51-4194	Tool Grinders, Filers, and Sharpeners	29	30	3.5%	1	43	44 High school diploma or equivalent	High school diploma or equivalent
751	4	51-4199	Metal Workers and Plastic Workers, All Other	184	173	-6.0%	-11	187	176 High school diploma or equivalent	High school diploma or equivalent
752	3	51-5100	Printing Workers	293	262	-10.6%	-31	312	281	Destruction to the first for the second
753 754	4 4	51-5111 51-5112	Prepress Technicians and Workers Printing Press Operators	-s- 229	-s- 210	-s- -8.3%	-s- -19	-s- 236	 -s- High school diploma or equivalent 217 High school diploma or equivalent 	Postsecondary training (non-degree) High school diploma or equivalent
755	4	51-5112	Print Binding and Finishing Workers	-S-	-S-	-0.3% -S-	-19 -S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
756	3	51-6000	Textile, Apparel, and Furnishings Workers	544	550	1.1%	6	650	656	riigir concer aipieria er equivaleri
757	4	51-6011	Laundry and Dry-Cleaning Workers	134	143	6.7%	9	185	194 Less than high school	High school diploma or equivalent
758	4	51-6021	Pressers, Textile, Garment, and Related Materials	-S-	-s-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
759	4	51-6031	Sewing Machine Operators	200	200	0.0%	0	224	224 Less than high school	High school diploma or equivalent
760	4	51-6041	Shoe and Leather Workers and Repairers	-s- 30	-s-	-S-	-s-	-s- 39	-s- High school diploma or equivalent	High school diploma or equivalent
761 762	4	51-6052 51-6061	Tailors, Dressmakers, and Custom Sewers Textile Bleaching and Dyeing Machine Operators and Tenders	12	29 13	-3.3% 8.3%	-1 1	17	38 Less than high school 18 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
763	4	51-6062	Textile Cutting Machine Setters, Operators, and Tenders	35	33	-5.7%	-2	32	30 High school diploma or equivalent	High school diploma or equivalent
764	4	51-6093	Upholsterers	60	63	5.0%	3	64	67 High school diploma or equivalent	High school diploma or equivalent
765	4	51-6099	Textile, Apparel, and Furnishings Workers, All Other	-8-	-s-	-S-	-8-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
766	3	51-7000	Woodworkers	1,614	1,754	8.7%	140	1,965	2,105	
767	4	51-7011	Cabinetmakers and Bench Carpenters	662	721	8.9%	59	716	775 High school diploma or equivalent	High school diploma or equivalent
768 769	4 4	51-7021 51-7041	Furniture Finishers Sawing Machine Setters, Operators, and Tenders, Wood	-s- 390	-s- 421	-s- 8.0%	-s- 31	-s- 470	 -s- High school diploma or equivalent 501 High school diploma or equivalent 	High school diploma or equivalent High school diploma or equivalent
770	4	51-7041	Woodworking Machine Setters, Operators, and Tenders, Except Sawing	362	396	9.4%	34	528	562 High school diploma or equivalent	High school diploma or equivalent
771	4	51-7099	Woodworkers, All Other	-S-	-s-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
772	3	51-8000	Plant and System Operators	393	395	0.5%	2	388	390	3
773	4	51-8012	Power Distributors and Dispatchers	27	27	0.0%	0	26	26 High school diploma or equivalent	Bachelor's degree
774	4	51-8013	Power Plant Operators	-S-	-S-	-S-	-S-	-S-	-s- Postsecondary training (non-degree	
775	4	51-8021	Stationary Engineers and Boiler Operators	103	108	4.9%	5	111	116 High school diploma or equivalent	High school diploma or equivalent
776 777	4 4	51-8031 51-8091	Water and Wastewater Treatment Plant and System Operators Chemical Plant and System Operators	199 -s-	194 -s-	-2.5% -s-	-5 -s-	178 -s-	173 Postsecondary training (non-degree -s- High school diploma or equivalent	Postsecondary training (non-degree)
778	4	51-8093	Petroleum Pump System Operators, Refinery Operators, and Gaugers	-S-	-s-	-S-	-S-	-s-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
779	4	51-8099	Plant and System Operators, All Other	43	46	7.0%	3	50	53 High school diploma or equivalent	Postsecondary training (non-degree)
780	3	51-9000	Other Production Occupations	6,195	6,496	4.9%	301	7,633	7,934	
781	4	51-9011	Chemical Equipment Operators and Tenders	96	107	11.5%	11	117	128 High school diploma or equivalent	High school diploma or equivalent
782	4	51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	577	657	13.9%	80	708	788 High school diploma or equivalent	High school diploma or equivalent
783 784	4	51-9021 51-9022	Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders Grinding and Polishing Workers, Hand	92 61	101 59	9.8% -3.3%	9 -2	112 70	121 High school diploma or equivalent 68 Less than high school	High school diploma or equivalent High school diploma or equivalent
785	4	51-9022	Mixing and Blending Machine Setters, Operators, and Tenders	266	299	12.4%	33	328	361 High school diploma or equivalent	High school diploma or equivalent
786	4	51-9031	Cutters and Trimmers, Hand	-S-	-S-	-S-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
787	4	51-9032	Cutting and Slicing Machine Setters, Operators, and Tenders	75	77	2.7%	2	93	95 High school diploma or equivalent	High school diploma or equivalent
788	4	51-9041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	230	239	3.9%	9	254	263 High school diploma or equivalent	High school diploma or equivalent
789	4	51-9051	Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	69	74	7.3%	5	76	81 High school diploma or equivalent	High school diploma or equivalent
790 791	4 4	51-9061 51-9071	Inspectors, Testers, Sorters, Samplers, and Weighers Jewelers and Precious Stone and Metal Workers	893 86	802 85	-10.2% -1.2%	-91 -1	1,044 109	953 High school diploma or equivalent 108 Postsecondary training (non-degree	Postsecondary training (non-degree)
791	4	51-9071	Dental Laboratory Technicians	15	19	26.7%	-1	21	25 High school diploma or equivalent	Postsecondary training (non-degree)
793	4	51-9082	Medical Appliance Technicians	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Postsecondary training (non-degree)
794	4	51-9083	Ophthalmic Laboratory Technicians	-s-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
795	4	51-9111	Packaging and Filling Machine Operators and Tenders	1,132	1,184	4.6%	52	1,345	1,397 High school diploma or equivalent	High school diploma or equivalent
796	4	51-9121	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	222	256	15.3%	34	260	294 High school diploma or equivalent	High school diploma or equivalent
797	4	51-9122	Painters, Transportation Equipment	82	90	9.8%	8	94	102 High school diploma or equivalent	High school diploma or equivalent
798 799	4 4	51-9141 51-9151	Semiconductor Processors	-s- 81	-s- 80	-s- -1.2%	-s- -1	-s- 124	-s- High school diploma or equivalent	Associate's degree
800	4	51-9151	Photographic Process Workers and Processing Machine Operators Adhesive Bonding Machine Operators and Tenders	60	62	3.3%	-1	80	123 High school diploma or equivalent82 High school diploma or equivalent	Postsecondary training (non-degree) High school diploma or equivalent
801	4	51-9192	Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	44	43	-2.3%	-1	68	67 Less than high school	High school diploma or equivalent
802	4	51-9193	Cooling and Freezing Equipment Operators and Tenders	-s-	-s-	-S-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
803	4	51-9194	Etchers and Engravers	-S-	-s-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	Postsecondary training (non-degree)
804	4	51-9195	Molders, Shapers, and Casters, Except Metal and Plastic	98	116	18.4%	18	118	136 High school diploma or equivalent	High school diploma or equivalent
805	4	51-9196	Paper Goods Machine Setters, Operators, and Tenders	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
806 807	4 4	51-9198 51-9199	HelpersProduction Workers Production Workers, All Other	629 1.027	700 1,117	11.3% 8.8%	71 90	979 1.240	1,050 Less than high school	High school diploma or equivalent
808	4	51-9199	Transportation and Material Moving	1,027 20,047	22,050	8.8% 10.0%	2, 003	1,240 26,620	1,330 High school diploma or equivalent 28,623	High school diploma or equivalent
809	2	53-0000	Transportation and Material Moving Occupations	20,047	22,050	10.0%	2,003	26,620	28,623	
810	3	53-1000	Supervisors of Transportation and Material Moving Workers	707	784	10.9%	77	796	873	
811	4	53-1011	Aircraft Cargo Handling Supervisors	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
			First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling							
812		53-1048	Supervisors	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Associate's degree
813 814		53-2000 53-2011	Air Transportation Workers Airline Pilots, Copilots, and Flight Engineers	289	312 -s-	8.0% -s-	23 -s-	307 -s-	330 -s- Associate's degree	Bachelor's degree
314	7	30 2011	, ato t iloo, copiloto, and t light Engineers	-5-	-5-	-3-	-5-	-5-	5 75500iate 3 degree	Sastion a degree

Mid-Valley Employment Projections Full Table, 2019-2029 (Marion, Polk, Yamhill Counties)

Oregon Employment Department, Workforce and Economic Research Division

	soc	soc		2019	2029	Percent	Employment	Replacement	Total	
Row	Level	Code	Standard Occupational Classification Title	Employment	Employment	Change	Change	Openings	Openings Typical Entry-Level Education	Competitive Education
815	4	53-2012	Commercial Pilots	238	258	8.4%	20	252	272 Associate's degree	Bachelor's degree
816	4	53-2022	Airfield Operations Specialists	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
817	4	53-2031	Flight Attendants	-S-	-S-	-S-	-S-	-S-	-s- High school diploma or equivalent	Bachelor's degree
818	3	53-3000	Motor Vehicle Operators	7,438	8,212	10.4%	774	9,176	9,950	
819	4	53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	-S-	-S-	-S-	-S-	-S-	 -s- High school diploma or equivalent 	High school diploma or equivalent
820	4	53-3021	Bus Drivers, Transit and Intercity	177	193	9.0%	16	234	250 High school diploma or equivalent	High school diploma or equivalent
821	4	53-3022	Bus Drivers, School or Special Client	1,421	1,600	12.6%	179	1,906	2,085 High school diploma or equivalent	High school diploma or equivalent
822	4	53-3031	Driver/Sales Workers	604	561	-7.1%	-43	662	619 High school diploma or equivalent	High school diploma or equivalent
823	4	53-3032	Heavy and Tractor-Trailer Truck Drivers	3,612	4,043	11.9%	431	4,352	4,783 Postsecondary training (non-degree	e) Postsecondary training (non-degree)
824	4	53-3033	Light Truck or Delivery Services Drivers	1,279	1,425	11.4%	146	1,538	1,684 High school diploma or equivalent	High school diploma or equivalent
825	4	53-3041	Taxi Drivers and Chauffeurs	198	235	18.7%	37	234	271 Less than high school	High school diploma or equivalent
826	4	53-3099	Motor Vehicle Operators, All Other	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
827	3	53-4000	Rail Transportation Workers	-S-	-S-	-S-	-S-	-S-	-S-	
828	4	53-4011	Locomotive Engineers	66	67	1.5%	1	62	63 High school diploma or equivalent	High school diploma or equivalent
829	4	53-4021	Railroad Brake, Signal, and Switch Operators	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
830	4	53-4031	Railroad Conductors and Yardmasters	-S-	-S-	-s-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
831	4	53-4099	Rail Transportation Workers, All Other	-S-	-s-	-s-	-s-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
832	3	53-5000	Water Transportation Workers	-S-	-S-	-8-	-S-	-S-	-S-	
833	4	53-5021	Captains, Mates, and Pilots of Water Vessels	-S-	-s-	-s-	-s-	-S-	-s- Postsecondary training (non-degree	e) Postsecondary training (non-degree)
834	3	53-6000	Other Transportation Workers	1,114	1,182	6.1%	68	1,659	1,727	
835	4	53-6021	Parking Lot Attendants	-S-	-S-	-8-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
836	4	53-6031	Automotive and Watercraft Service Attendants	819	863	5.4%	44	1,243	1,287 Less than high school	High school diploma or equivalent
837	4	53-6041	Traffic Technicians	-S-	-S-	-8-	-S-	-S-	-s- Postsecondary training (non-degree	e) Bachelor's degree
838	4	53-6051	Transportation Inspectors	42	46	9.5%	4	44	48 High school diploma or equivalent	Postsecondary training (non-degree)
839	4	53-6061	Transportation Attendants, Except Flight Attendants	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
840	4	53-6099	Transportation Workers, All Other	-S-	-S-	-8-	-S-	-S-	-s- High school diploma or equivalent	High school diploma or equivalent
841	3	53-7000	Material Moving Workers	10,345	11,402	10.2%	1,057	14,536	15,593	
842	4	53-7011	Conveyor Operators and Tenders	-S-	-s-	-s-	-s-	-S-	-s- Less than high school	High school diploma or equivalent
843	4	53-7021	Crane and Tower Operators	110	122	10.9%	12	135	147 Less than high school	High school diploma or equivalent
844	4	53-7031	Dredge Operators	-S-	-s-	-s-	-s-	-S-	-s- Less than high school	High school diploma or equivalent
845	4	53-7032	Excavating and Loading Machine and Dragline Operators	155	177	14.2%	22	196	218 Less than high school	High school diploma or equivalent
846	4	53-7041	Hoist and Winch Operators	-S-	-S-	-8-	-S-	-S-	-s- Less than high school	High school diploma or equivalent
847	4	53-7051	Industrial Truck and Tractor Operators	2,086	2,323	11.4%	237	2,480	2,717 Less than high school	High school diploma or equivalent
848	4	53-7061	Cleaners of Vehicles and Equipment	1,247	1,329	6.6%	82	1,876	1,958 Less than high school	High school diploma or equivalent
849	4	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	4,745	5,423	14.3%	678	7,061	7,739 Less than high school	High school diploma or equivalent
850	4	53-7063	Machine Feeders and Offbearers	560	570	1.8%	10	748	758 Less than high school	High school diploma or equivalent
851	4	53-7064	Packers and Packagers, Hand	1,054	1,031	-2.2%	-23	1,502	1,479 Less than high school	High school diploma or equivalent
852	4	53-7072	Pump Operators, Except Wellhead Pumpers	-s-	-S-	-s-	-s-	-s-	-s- Less than high school	High school diploma or equivalent
853	4	53-7081	Refuse and Recyclable Material Collectors	233	264	13.3%	31	343	374 Less than high school	High school diploma or equivalent
854	4	53-7199	Material Moving Workers, All Other	74	76	2.7%	2	94	96 Less than high school	High school diploma or equivalent
855			Nonclassifiable	520	560	7.7%	40	881	921	- , ,
856	2	66-0000	Nonclassifiable Occupations	520	560	7.7%	40	881	921	
857	4	66-2041	Non-covered Agricultural Workers**	520	560	7.7%	40	881	921 Less than high school	High school diploma or equivalent

Notes:

Notes:
All data includes self-employment.
- s - means suppressed for confidentiality or insufficient data.
- s - means suppressed for confidentiality or insufficient data.
- **Non-covered agricultural workers are workers employed by agricultural firms who are not covered by unemployment insurance. The number of non-covered agricultural workers by occupation is not available.

Data Sources and Limitations

Contact:
Pat O'Connor, Regional Economist, Patrick.S.Oconnor@oregon.gov, 503-400-4374

Published: October 1, 2020

	SOC	SOC		2019
Row	Level	Code	Standard Occupational Classification Title	Employment
			Total, All Occupations	283,711
			Management, Business, and Financial	27,582
			Professional and Related	36,297
			Health Care	23,420
			Service	52,302
			Sales and Related	26,022
			Office and Administrative Support	37,119
			Farming, Fishing, and Forestry	14,526
			Construction and Extraction	16,894
			Installation, Maintenance, and Repair	10,143
			Production	18,839
			Transportation and Material Moving	20,047
			Nonclassifiable	520

2029	Percent E	Employment	Replacement	Total
Employment	Change	Change	Openings	Openings
307,907	8.5%	24,196	348,054	372,250
30,549	10.8%	2,967	25,827	28,794
39,638	9.2%	3,341	34,632	37,973
26,633	13.7%	3,213	19,652	22,865
58,979	12.8%	6,677	83,729	90,406
26,800	3.0%	778	36,478	37,256
37,751	1.7%	632	43,732	44,364
15,401	6.0%	875	24,266	25,141
18,948	12.2%	2,054	19,479	21,533
10,985	8.3%	842	10,324	11,166
19,613	4.1%	774	22,434	23,208
22,050	10.0%	2,003	26,620	28,623
560	7.7%	40	881	921

		2019
	Standard Occupational Classification Title	Employment
1.	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	9,304
	Combined Food Preparation and Serving Workers, Including	
2.	Fast Food	7,731
3	Retail Salespersons	7,524
4.	Cashiers	5,150
5.	Personal Care and Service Workers, All Other	4,856
6	Personal Care Aides	4,509
7.	Laborers and Freight, Stock, and Material Movers, Hand	4,745
8.	Office Clerks, General	5,670
9.	Waiters and Waitresses	3,090
	Janitors and Cleaners, Except Maids and Housekeeping	
10.	Cleaners	3,255

Occupations With the Most Job Openings in the Mid-Valley, 2019-2029

- 1. Farmworkers and Laborers, Crop, Nursery, and Greenhouse
- 2. Combined Food Preparation and Serving Workers, Including Fast Food
- 3 Retail Salespersons
- 4. Cashiers
- 5. Personal Care and Service Workers, All Other
- 6 Personal Care Aides
- 7. Laborers and Freight, Stock, and Material Movers, Hand
- 8. Office Clerks, General
- 9. Waiters and Waitresses
- 10. Janitors and Cleaners, Except Maids and Housekeeping Cleaners

2029	Percent	Employment	Replacement	Total
Employment	Change	Change	Openings	Openings
10,005	7.5%	701	15,763	16,464
8,902	15.2%	1,171	14,809	15,980
7,648	1.7%	124	11,081	11,205
5,007	-2.8%	-143	9,581	9,438
5,683	17.0%	827	7,704	8,531
5,567	23.5%	1,058	7,022	8,080
5,423	14.3%	678	7,061	7,739
5,647	-0.4%	-23	6,773	6,750
3,234	4.7%	144	6,069	6,213
3,614	11.0%	359	4,523	4,882

	2019	2029	Percent
Standard Occupational Classification Title	Employment	Employment	Change
Computer Numerically Controlled Machine To	77	105	36.4%
Statisticians	169	220	30.2%
Physical Therapist Assistants	111	144	29.7%
Animal Trainers	71	92	29.6%
Information Security Analysts	63	81	28.6%
Physician Assistants	113	145	28.3%
Management Analysts	2,721	3,471	27.6%
Dental Laboratory Technicians	15	19	26.7%
Speech-Language Pathologists	273	343	25.6%
Operations Research Analysts	36	45	25.0%
Education Administrators, Preschool and Chil	81	101	24.7%
Nurse Practitioners	171	213	24.6%

Fastest Growing Occupations in the Mid-Valley, 2019-2029

- Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic
- 2. Statisticians
- 3 Physical Therapist Assistants
- 4. Animal Trainers
- 5. Information Security Analysts
- 6 Physician Assistants
- 7. Management Analysts
- 8. Speech-Language Pathologists
- Education Administrators, Preschool and Childcare Center/Program
- 10. Nurse Practitioners

Employment	Replacement	Total
Change	Openings	Openings
28	93	121
51	149	200
33	158	191
21	119	140
18	51	69
32	74	106
750	2,916	3,666
4	21	25
70	165	235
9	26	35
20	70	90
42	103	145

	2015	2016	2017	2018	2019	2020
AAS enrollment	0					
Agriculture, Food, and Natural Resources	83					
Horticulture Program	23	82	83	61	62	48
Vineyard Management	41	28	18	19	21	15
Winemaking		50	56	48	38	45
Arts, Information, and Communication	43					
Graphic Design	4	46	49	57	51	55
Interactive Media / Multimedia Arts		12	2	3	27	36
Business and Management	232					
Accounting Programs	262	225	220	211	193	193
Management	16	275	237	268	251	217
Procurement and Supply Chain Management	18	17	26	24	22	21
Accounting Administrative Assistant	111	17	16	13	11	7
Administrative Office Professional	0	96	73	64	58	44
Legal Administrative Assistant	29	0	0	0	0	2
Medical Administrative Assistant	5	22	14	10	13	19
Virtual Office Assistant	76	0	2	6	6	4
Hospitality and Tourism Management	70	62	57	50	49	48
Health Services	0	02	37	30	45	40
Anesthesia Technology Program	109	0	0	5	24	30
Emergency Medical Technology	42	50	19	8	4	1
Paramedicine Program	4	49	52	62	63	60
Health Information Management Programs	78	3	4	1	1	0
Health Information Management	66	47	32	25	24	10
Nursing	18	60	45	47	52	37
Pharmacy Management		13	9	9	10	3
Human Resources	17					
Corrections	127	23	19	14	13	10
Criminal Justice		123	108	91	91	80
Juvenile Justice	60	43	26	22	23	15
Law Enforcement	68	83	76	74	95	76
Early Childhood Education Programs	154	126	129	140	128	120
Fire Prevention	30	18	18	11	11	6
Fire Suppression	97	124	138	118	108	94
Addiction Studies	62	58	47	47	43	41
Direct Service Professional	0	0	0	0	0	1
Social Services	79	68	48	39	42	33
Programs	80	78	93	97	94	107
Industrial and Engineering Systems						
(Specializations in HVAC/R, Plumbing, and	38	45	45	67	64	52
Inside Electrician	43	54	83	113	122	122
Diesel Technology	0	0	0	0	0	9
Automotive Technology	106	90	91	84	85	62

Building Inspection	1	12	25	30	39	35
Technology	188	164	162	173	151	107
Cybersecurity	0	0	0	3	26	49
Drafting Technology–CAD Programs	77	76	68	61	66	47
Computer-Assisted Drafting (CAD)						
Electronic Engineering Technician	63	58	44	52	59	55
Industrial Electronics	14	9	8	7	8	3
Renewable Energy Management	7	5	5	4	4	8
Machining Technology Programs	19	6	2	0	0	0
Manufacturing (CAD/CAM)	41	45	47	39	34	22
Robotics Program	0	13	8	5	1	2
Welding Programs	53	51	47	53	40	40
Pre-Program Majors						
Pre-Accounting	43	24	6	2		1
Pre-Automotive Technology	8	3	2	1		
Pre-Business Management	86	33	10	4	2	1
Pre-Civil Survey			1			
Pre-Computer Info Systems	36	9	2	2		
Pre-Criminal Justice	22	19	6	2	2	1
Pre-Drafting Technology	15	7	5	2	1	
Pre-Early Childhood Education	48	19	8	4	3	4
Pre-Electronic Engineering	15					
Pre-EMT	4					
Pre-GeomatricsEngineeringTech		1				
Pre-Health Informatics	3					
Pre-Horticulture	8					
Pre-Hospitality Management	12	1	2			
Pre-Human Services	36	15	5	3	1	1
Pre-Juvenile Justice	21	9	4	1		
Pre-Law Enforcement	4	1				
Pre-Machining Technology	3	3				
Pre-Network Technology	1					
Pre-Nursing	196	103	47	23	12	11
Pre-Professional Teacher Prep		1	1	1		
Pre-Social Services	3	1				
Pre-SpeechLangPathAsist-AAS	2					
Pre-Tourism&Travel Management	4	1				
Pre-Vineyard Management	4	3	1			
Pre-Visual Communications	31	9	6	4	2	2
Pre-Welding	3					
Pre-Winemaking (2 year)	22	7				

CHEMEKETA COMMUNITY COLLEGE Career and Technology Education

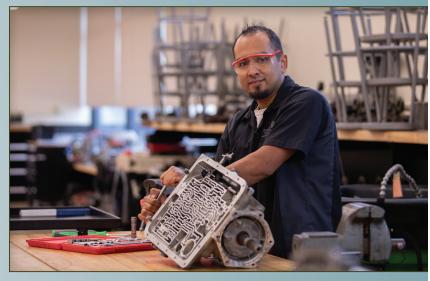












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Chemeketa Career Technical Education (CTE) Certificates and Degrees

Career	Average Annual Salary*	Employment Forecast	Chemeketa Programs	More Information
AGRICULTURE SCIE	NCES			
Nursery, Vineyard or Winery Manager	\$65,000	1%	Horticulture, Vineyard Management Vineyard Operations, Winemaking	go.chemeketa.edu/horticulture go.chemeketa.edu/winestudies
BUSINESS				
Accountant	\$70,500	6%	Accounting, Payroll, Tax Preparation	go.chemeketa.edu/accounting
Business Manager	\$96,000	7%	Business Management, Procurement, Management, Retail Management	go.chemeketa.edu/management
Event Manager	\$49,310	7%	Hospitality & Tourism Management	go.chemeketa.edu/tourism
Food Service Manager	\$54,000	119%	Hospitality & Tourism Management	
Lodging Manager	\$63,000	1%	Hospitality & Tourism Management	
Office Administrator	\$58,000	8%	Business Technology	go.chemeketa.edu/businesstech
Tasting Room Manager	\$46,000	6%	Wine Hospitality	go.chemeketa.edu/winestudies
EMERGENCY SERVI	CES			
Corrections Officer	\$55,000	3%	Corrections, Juvenile Corrections	go.chemeketa.edu/corrections
EMT/Paramedic	\$35,000	7%	Emergency Medical Technology, Paramedic	go.chemeketa.edu/emt
Firefighter	\$66,000	5%	Fire Protection, Fire Prevention, Fire Service Management, Fire Suppression	go.chemeketa.edu/fire go.chemeketa. edu/fireprevention
Law Enforcement Officer	\$72,000	5%	Criminal Justice, Law Enforcement	go.chemeketa.edu/criminaljustice go.chemeketa.edu/lawenforcement
HEALTHCARE				
Anesthesia Technician	\$72,000	15%	Anesthesia Technology	go.chemeketa.edu/anesthesia
Dental Assistant	\$40,000	11%	Dental Assisting	go.chemeketa.edu/dental
Health Information Technician	\$42,000	11%	Health Information Management	go.chemeketa.edu/informatics
Hemodialysis Technician	\$48,000	11%	Hemodialysis Technician	go.chemeketa.edu/hemodialysis
Medical Assistant	\$38,000	23%	Medical Assisting	go.chemeketa.edu/medassistant
Nurse	\$84,000	12%	Nursing	go.chemeketa.edu/nursing
Pharmacy Technician	\$42,000	7%	Pharmacy Technician	go.chemeketa.edu/pharmacology
Speech Language Pathology Assistant	\$42,000	5%	Speech Language Pathology Assistant	go.chemeketa.edu/speechpathology

	Average Annual Salary*	Employment Forecast	Chemeketa Programs	More Information
HUMAN SERVICES				
ddiction Studies Counselor	\$53,000	22%	Addiction Studies, Human Services	go.chemeketa.edu/humanservices
arly Childhood Educator	\$30,000	7%	Early Childhood Education	go.chemeketa.edu/ece
ocial Worker	\$51,000	11%	Human Services	go.chemeketa.edu/humanservices
TECHNOLOGY				
omputer Aided Ianufacturing Technician	\$47,000	3%	Machining Technology, CAD/CAM, CNC Operator	go.chemeketa.edu/machining
oftware Programmer	\$100,000	21%	Computer Information Systems	go.chemeketa.edu/cis
omputer Systems dministrator	\$82,000	5%	Computer Information Systems	go.chemeketa.edu/cis
ybersecurity	\$100,000	37%	Computer Information Sciences	go.chemeketa.edu/cis
rafting Technician	\$55,000	1%	Drafting Technology-CAD	go.chemeketa.edu/drafting
lectronics Technician	\$65,000	1%	Electronics, Robotics, Renewable Energy Management	go.chemeketa.edu/electronics
Iultimedia Arts	\$70,530	6%	Visual Communications	go.chemeketa.edu/viscom
rocess Control Technician	\$62,000	1%	Electronics	go.chemeketa.edu/electronics
obotics Technician utomation	\$58,000	1%	Robotics	go.chemeketa.edu/robotics
/eb Developer	\$69,000	13%	Computer Information Systems	go.chemeketa.edu/cis
TRADES				
uto Mechanic	\$41,000	3%	Automotive Technology	go.chemeketa.edu/automotive
uilding Inspector	\$60,000	7%	Building Inspection	go.chemeketa.edu/building-inspection
iesel Technology	\$45,000	12%	Diesel Technology	go.chemeketa.edu/diesel
raphic Designer	\$53,000	3%	Visual Communications	go.chemeketa.edu/viscom
VAC/R Technician	\$47,000	13%	Apprenticeship	go.chemeketa.edu/apprenticeship
side Electrician	\$65,000	10%	Apprenticeship	go.chemeketa.edu/apprenticeship
lumber	\$67,000	14%	Apprenticeship	go.chemeketa.edu/apprenticeship
heet Metal Technician	\$53,000	8%	Apprenticeship	go.chemeketa.edu/apprenticeship
ruck Driving	\$35,000	10.7%	Truck Driving	go.chemeketa.edu/truckdriving
		3%	Welding	go.chemeketa.edu/welding

Chemeketa Community College Program Review Six-Year Schedule

Orange: Process Complete

Gray: Report Done

Yellow: In progress Blue: not oriented

Updated 5/5/21

ACADEMIC AREAS

Year 5	Year 6	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25
ESOL	ABE/GED	Reading & Study Skills	Pharmacy Tech	Wine Studies	Occupational Skills Training	ESOL	ABE/GED/HEP
Automotive	Dental Assisting	Building Inspection	Agribusiness	Apprenticeship	Horticulture	Automotive	Dental Assisting
CWE	Economics	Fire	Electronics	EMT	Drafting	CWE	Social Science
Anthropology	Hemodialysis	Speech Language Pathology	Life Science	Medical Assisting	Engineering	Criminal Justice	Hemodialysis
Criminal Justice	Health Information Management	Computer Science	Health, Human Performance and PE	Math	Visual Communications	Languages/ASL	Health Information Management
Languages/ASL	Education	Welding	Computer Information Systems	Nursing	Philosophy/Religion	Physical Science	Education
History		Early Childhood Education	English	Management	Human Services	Health Information Management	
Physical Science		Visual and Performing Arts	Office Administration & Technology	Accounting	Communication		
		Machining	Hospitality & Tourism	Anesthesiology Tech	Developmental Writing		

Program Review Six-Year Schedule

(Subject to revision)

SERVICE: OUTREACH/COLLEGE/STUDENT SERVICE AREAS

Outreach YR 3/Service YR2	Outreach YR4/Service YR3	Outreach YR5/Service YR4	Outreach YR6/Service YR5	Outreach YR1/Service YR6	Outreach YR2/Service YR1	Outreach YR3/Service YR2
2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Teaching and Learning	Brooks Center		College Access Programs	Polk Center	Library Services	Academic and Organizational Effectiveness
Student Retention and College Life	High School Partnerships	Student Recruitment, Enrollment, and Graduation Services	Diversity & Equity and Title IX	Woodburn Center	Yamhill Valley Campus	Student Retention & College Life
Auxiliary and Contracted Services	Projects, Facilities & Maintenance	Financial Management	MWEC/Perkins	Information Technology	Institutional Advancement	ССВІ
eLearning and Academic Technology	International Programs	Student Accessibility Services	Counseling and Career Services	Advising & First Year Programs	Public Safety	Academic Innovation
	Grants	Organizational Effectiveness	Corrections Education	Legal Services	Tutoring	Institutional Research Liband Reporting
Financial Aid and Veterans' Services	Public Safety (Preliminary Review)	Chemeketa Press	Human Resources		Library Reference & Instructional Services	Bookstore/Auxiliary Services
					Emergency, Risk, and Environmental Health Management Occupational Health Standards	
			College Credit Now			

Service Areas Master List (as of July 2019)	Finance	Marketing, Public Relations
(If you do not see your area on this list, please contact	Budget & Finance	
Academic Effectiveness: 503-399-6032)	Business Services	Polk Center
	Cashiering	
Academic and Organizational Effectiveness	Grant Accounting & Accounts Payable	Student Accessibility Services
	Procurement Services	
Advising and First Year Programs		Student Recruitment, Enrollment, and
Placement Testing	Financial Aid & Veterans Services	Graduation Services
Auxiliary and Contracted Services	Grants	Student Retention & College Life
Brooks Center	НЕР	Tutoring Services
Center for Academic Innovation	High School Partnerships	Woodburn Center
	High School Programs	
Chemeketa Center for Business & Industry (CCBI)	Accelerated Learning	Yamhill Valley Campus
Small Business Development		, .
Contracted Training	College Credit Now	(7/25/19) Possibly to add:
		Professional Development
Chemeketa Press	Human Resources	Truck Driving
- II	Information Technology	
College Access Programs (TRiO, CCP, STEP, STEPS,		
CAMP)	Institutional Research and Reporting	
College Credit Now		
College Credit Now	International Programs	
Counseling and Career Services		
	Legal Resources	
Diversity & Equity and Title IX	Library & Learning Resources	
	Chemeketa Cooperative Regional Library Service (CCRLS)	
Emergency, Risk, and Environmental Health	Library	
Management	Computer Center	
Occupational Health Standards	Compared Center	
Facilities & Capital Projects	Mid-Willamette Education Consortium (MWEC)	
	Public Safety	