Graduates from key UA programs

**MINING OPERATOR**
- 86.8% working in AK within a year of graduating
- YR 1: $50,592
- YR 5: $50,592

**POWER TECHNOLOGY**
- 89.6% working in AK within a year of graduating
- YR 1: $45,183
- YR 5: $72,584

**GEOLOGICAL SCIENCES**
- 63.4% working in AK within a year of graduating
- YR 1: $44,516
- YR 5: $68,848

60.6% wage growth

The industries where first-year graduates work

- Mining: 6.2%
- Public admin: 6.6%
- Prof/sci/tech: 7.3%
- Transport/warehousing: 7.6%
- Education: 12.6%
- Construction: 12.6%
- Oil and gas extraction: 22.1%
- Other: 29.4%

Program grads’ average wages

- UA grads YEAR 1: $59,511
- UA grads YEAR 5: $104,401

Note: Graduates of all 44 key UA programs

The University of Alaska has identified 44 programs whose graduates are important to the mining industry in Alaska. Detailed below are their employment and wage outcomes, plus other information that can be used to assess UA programs and their usefulness to one of the state’s key industries.

Note: Employment and wage data not limited to graduates who work in mining.
Do these programs boost the Alaska hire rate?

92.7% of working graduates are Alaska residents

For comparison, residency is...
- 79.3% for all Alaska workers
- 65.3% for all mining workers

Over the last three years, the mining industry hired...

- **135** Mining/Geological Engineers
- **87** Geoscientists
- **81** Geological Technicians
- **77** Heavy/Tractor Truck Drivers
- **39** Chemical Technicians
- **29** Environmental Eng Techs

Notes: These occupations have had the most hires in the past three years among occupations that require postsecondary education. Hires include all hires, not just UA grads, to identify where demand is greatest.

Where do UA’s mining program grads work?

- **Northern** 21.9%
- **Interior** 29.5%
- **Anchorage/Mat-Su** 21.9%
- **Southwest** 3.0%
- **Gulf Coast** 13.3%
- **Southeast** 5.4%
The economic value of training and education is abundantly clear in the relevant data. Median earnings, for example, jump from $35,328 for high school graduates to $44,619 for Alaskans with an associate degree, $57,708 for those with a bachelor’s degree, and $77,402 for those with graduate or professional degrees. More education and training also correlate strongly with lower unemployment rates.

The University of Alaska prepared data on the 44 programs that are important to the mining industry, including 21 that result in a certificate or licensure, 10 that result in an associate degree, and 13 that result in a bachelor’s degree or above.

Over the last 10 years, 2,319 people have graduated from those programs, with the following outcomes by degree type:

- **Certificates:** 756 graduates, 650 employed in Alaska within a year of graduating, with average first-year wages of $47,411 and average fifth-year wages of $79,517
- **Associate Degrees:** 1,101 graduates, 972 employed in Alaska within a year of graduating, with average first-year wages of $68,449 and average fifth-year wages of $119,504
- **Bachelor’s Degrees and Above:** 597 graduates, 415 employed in Alaska within a year of graduating, with average first-year wages of $55,340 and average fifth-year wages of $78,366

Three types of programs account for 25 percent of graduates and warrant special mention:

- **Mining Operator** (six certificates at UAF): 68 graduates, 59 employed in Alaska within a year of graduating, with average first-year wages of $50,592
- **Power Technology** (one certificate and one associate at UAS, three certificates at UAF, and two certificates and two associates at UAA): 336 graduates, 301 employed in Alaska within a year of graduating, with average first-year wages of $45,183 and average fifth-year wages of $72,584
- **Geological Sciences** (two bachelors, two masters, and two Ph.D. programs at UAF, and one bachelor at UAA): 325 graduates, 206 employed in Alaska within a year of graduating, with average first-year wages of $44,516 and average fifth-year wages of $68,848

The relationship between UA programs and mining hiring

Graduates from the mining programs don’t necessarily go to the mining industry, as many learn crossover skills. Engineers, for example, work for mining companies but also for consulting firms and the state and federal governments. Their specific occupations vary widely, but their engineering credentials are clearly relevant to most of them.

The connection between a university program such as construction management and the occupations into which those graduates are hired is even more complicated. Although the data show strong demand for those graduates (86 percent find work within a year of graduating) and impressively high earnings (about $62,000 to start and $78,000 by their fifth year), they are hired into a variety of occupations and by a number of industries including mining, construction, and professional services.

Attempts to precisely match the supply of graduates with the demand for certain workers by industry would be misguided, but the data shown here are appropriate for general conclusions about the benefits of certain UA programs. More importantly, this information can help facilitate conversations with key industries about how programs could be expanded, changed, or developed to provide them with more and better-trained workers.
Related questions and answers

Q: Where do the employment numbers come from?

The University of Alaska and the Alaska Department of Labor and Workforce Development's Research and Analysis Section have worked together for years to identify where university graduates are working in the state.

The detailed employment and wage information comes from quarterly reports that nearly all Alaska employers are required to file under state employment insurance law. Those records do not include federal workers or the self-employed, so university program graduates in those categories are not shown here.

Q: Why is the percentage of geological science graduates who find work in Alaska lower than for other graduates?

The main reason is that UA geological science graduates are more likely to find work outside Alaska or even outside the United States than welding or process tech graduates. Keep in mind the data shown here for employment and wages are solely for the graduates who show up in Alaska employment and wage data.

Q: Why are fifth-year average wages unavailable for mining operators?

These students come from the UAF Mining and Petroleum Training Service (MAPTS), which provides noncredit training. Data collection for these students that would allow matching to employment outcomes only became available in 2017.

Q: Can this information be used for program evaluation?

It can inform those types of decisions, as well as decisions about which programs to expand, but there's far more to consider than which programs have the highest earnings or best employment outcomes. Other data such as short-term and long-term industry and occupational projections, enrollment numbers, and tuition and program costs are important, and so are informal insights and information gathered from industry and other key stakeholders. When making key decisions about university programs, it will also be important to consider the most recent developments in the economy that can’t yet be measured.
# The Mining Industry and UA Graduates

## FAST FACTS

The 44 programs linked to mining

<table>
<thead>
<tr>
<th>Target Occupations</th>
<th>University</th>
<th>Major</th>
<th>Degree</th>
<th>Graduates</th>
<th>Employed in AK within a year</th>
<th>1st-year avg wage</th>
<th>5th-year avg wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mining Mach Operators, Operating Engrs, Extraction Wkrs, Continuous Mining Machine Operators, Setters, Svc Unit &amp; Plant Operators</td>
<td>UAF</td>
<td>Underground Mine Training</td>
<td>Noncredit Certification</td>
<td>14*</td>
<td>12</td>
<td>$64,309</td>
<td>-</td>
</tr>
<tr>
<td>Maintenance/Repair Workers, Industrial Machinery Mechanics, Machinery Maintenance, Mobile Heavy Equipment &amp; Diesel Mechanics</td>
<td>UAF</td>
<td>CTT: Facilities Maintenance</td>
<td>Occupational Endorsement Cert</td>
<td>77*</td>
<td>71</td>
<td>$33,094</td>
<td>-</td>
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<tr>
<td>1st-Line Supervisors of Const Trades &amp; Extraction; Mechanics, Installers, &amp; Repairers; Production Wkrs</td>
<td>UAF</td>
<td>Construction Management</td>
<td>Associate of Applied Science</td>
<td>31</td>
<td>27</td>
<td>$50,682</td>
<td>$72,956</td>
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<tr>
<td>Welders, Cutters, Solderers, &amp; Brazers</td>
<td>UAF</td>
<td>Advanced Welding</td>
<td>Occupational Endorsement Cert</td>
<td>27*</td>
<td>21</td>
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<td>Geoscientists, except Hydrologists/Geographers</td>
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<td>Earth Science</td>
<td>Bachelor of Arts</td>
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<td>15</td>
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<td>Geological &amp; Petroleum and Chemical Technicians</td>
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<td>Petroleum Technology</td>
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<td>$119,160</td>
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<td>Millwrights</td>
<td>UAF</td>
<td>Millwright</td>
<td>Occupational Endorsement Cert</td>
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<tr>
<td>Mining &amp; Geological Engineers, Including Mining Safety</td>
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<td>Geoscience</td>
<td>Bachelor of Science</td>
<td>14*</td>
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<td>546</td>
<td>494</td>
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<td>Associate of Applied Science</td>
<td>227</td>
<td>182</td>
<td>$63,347</td>
<td>$107,795</td>
</tr>
</tbody>
</table>

*Program had not yet existed for 10 years

Note: Graduate numbers are for 2009 through 2018. When wages aren’t shown for a program, it’s because it had too few graduates.