

THE MINING INDUSTRY AND UA GRADUATES FAST FACTS



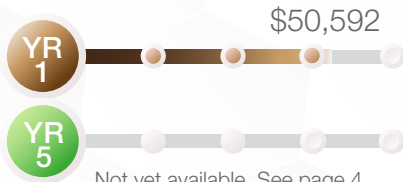
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The University of Alaska has identified 44 programs whose graduates are important to the mining industry in Alaska. Detailed below are their employment and wage outcomes, plus other information that can be used to assess UA programs and their usefulness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

Graduates from key UA programs

MINING OPERATOR

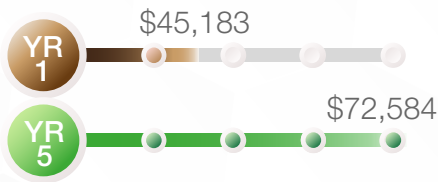
86.8% working in AK
within a year
of graduating



Not yet available. See page 4 for more information.

POWER TECHNOLOGY

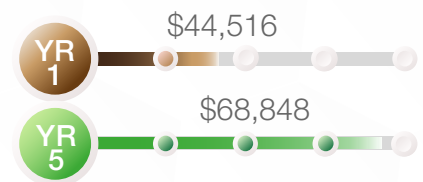
89.6% working in AK
within a year
of graduating



60.6% wage growth

GEOLOGICAL SCIENCES

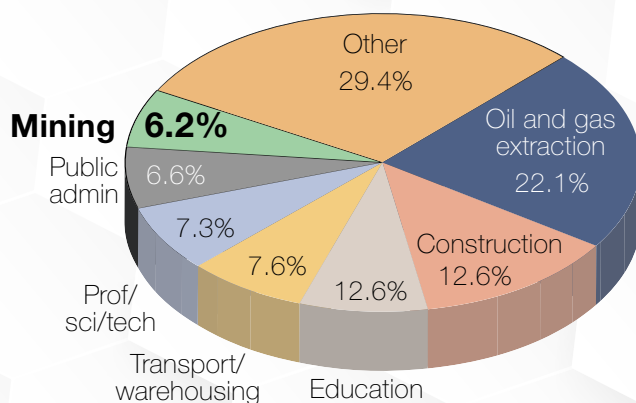
63.4% working in AK
within a year
of graduating



54.7% wage growth

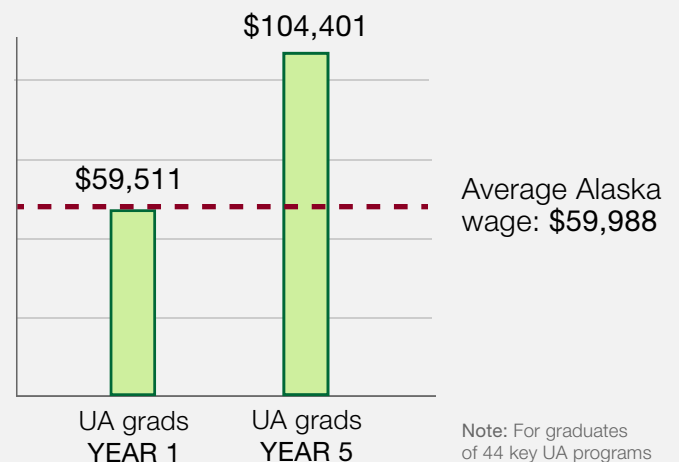
Note: Employment and wage data not limited to graduates who work in mining

The industries where first-year graduates work



Note: Graduates of all 44 key UA programs

Program grads' average wages



Note: For graduates of 44 key UA programs

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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

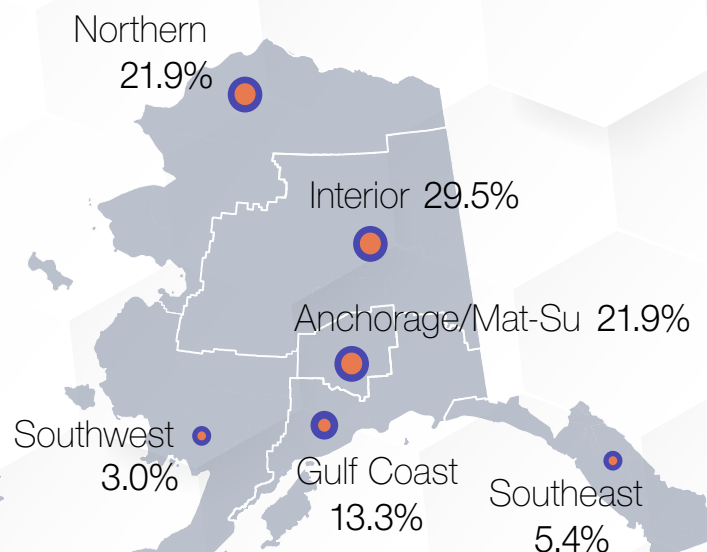
81 Geological Technicians

77 Heavy/Tractor Truck Drivers

39 Chemical Technicians

29 Environmental Eng Techs

Where do UA's mining program grads work?



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.

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More information on programs and the industry connection

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.

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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.

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The 44 programs linked to mining

Target occupations	University	Major	Degree	Graduates	Employed in AK within a year	1st-year avg wage	5th-year avg wage
Mining Mach Operators, Operating Engrs, Extraction Wkrs, Continuous Mining Machine Operators, Setters, Svc Unit & Plant Operators (47-5049, 47-2073, 47-5099, 47-5041, 51-9012, 47-5013, 51-8099)	UAF	Underground Mine Training	Noncredit Certification	14*	12	64,309	-
	UAF	Roustabout	Noncredit Certification	10*	10	47,402	-
	UAF	Pipeline Construction Support	Noncredit Certification	10*	9	-	-
	UAF	Surface Mine Training	Noncredit Certification	7*	6	-	-
	UAF	Mining Mill Operations	Noncredit Certification	27*	22	\$ 44,364	-
	UAF	Mining Mill Operations	Occupational Endorsement Cert	27*	22	\$44,364	-
Maintenance/Repair Workers, Industrial Machinery Mechanics, Machinery Maintenance, Mobile Heavy Equipment & Diesel Mechanics (49-9071, 49-9041, 49-9043, 49-3042, 49-3031)	UAF	CTT: Facilities Maintenance	Occupational Endorsement Cert	77*	71	\$33,094	-
	UAS	Power Technology	Occupational Endorsement Cert	17*	15	\$55,839	-
	UAA	Heavy Duty Trans & Equip	Certificate	28	22	\$47,447	\$55,523
	UAA	Mech & Electrical Technology	Certificate	2*	2	-	-
	UAF	Diesel/Heavy Equipment	Certificate	132	121	\$46,525	\$81,060
	UAF	Power Generation	Certificate	13	10	-	\$88,139
	UAA	Diesel Power Technology	Associate of Applied Science	3*	3	-	-
	UAA	Heavy Duty Trans & Equip	Associate of Applied Science	25	23	\$48,642	\$76,193
1st-Line Supervisors of Const Trades & Extraction; Mechanics, Installers, & Repairers; Production Wkrs (47-1011, 49-1011, 51-1011)	UAS	Power Technology	Associate of Applied Science	39	34	\$50,475	\$64,727
	UAA	Construction Management	Associate of Applied Science	31	27	\$50,682	\$72,956
	UAF	Construction Management	Associate of Applied Science	55	48	\$57,178	\$65,284
	UAA	Construction Management	Bachelor of Science	149	128	\$66,258	\$85,526
Welders, Cutters, Solderers, & Brazers (51-4121)	UAA	Advanced Welding	Occupational Endorsement Cert	27*	21	\$42,597	-
	UAA	Nondestructive Testing Tech	Occupational Endorsement Cert	52*	47	\$52,773	-
	UAA	Welding	Occupational Endorsement Cert	52*	44	\$42,540	-
	UAF	Entry Level Welder	Occupational Endorsement Cert	87	70	\$39,551	\$64,225
	UAS	Welding	Occupational Endorsement Cert	62*	49	\$35,868	-
	UAA	Welding Technology	Certificate	30	22	\$47,878	-
	UAA	Weld & Nondestruct Test Tech	Associate of Applied Science	77	67	\$46,429	\$74,149
Geoscientists, except Hydrologists/Geographers (21-1012)	UAF	Earth Science	Bachelor of Arts	19	15	\$22,914	\$53,197
	UAF	Geoscience	Bachelor of Science	44*	33	\$47,737	-
	UAA	Geological Sciences	Bachelor of Science	135	100	\$38,280	\$55,624
	UAF	Geology	Master of Science	42	22	\$65,955	\$114,784
	UAF	Geophysics	Master of Science	32	17	\$57,117	-
	UAF	Geology	Doctor of Philosophy	20	6	\$52,356	-
	UAF	Geophysics	Doctor of Philosophy	33	13	\$46,842	-
Geological & Petroleum and Chemical Technicians (19-4041, 19-4031)	UAA	Petroleum Technology	Certificate	38	34	\$65,803	\$119,160
	UAF	Instrumentation Technology	Certificate	68	61	\$57,255	\$97,735
	UAA	Industrial Proc Instrum	Associate of Applied Science	80	69	\$70,255	\$123,388
	UAA	Industrial Technology	Associate of Applied Science	18	15	\$68,488	\$72,092
	UAA	Process Technology	Associate of Applied Science	546	494	\$77,768	\$140,711
	UAF	Process Technology	Associate of Applied Science	227	192	\$63,347	\$107,795
Millwrights (49-9004)	UAA	Millwright	Occupational Endorsement Cert	3*	2	-	-
Mining & Geological Engineers, Including Mining Safety (17-2151)	UAF	Geological Engineering	Bachelor of Science	59	43	\$56,010	\$86,910
	UAF	Mining Engineering	Bachelor of Science	38	25	\$72,508	-
	UAF	Environmental Engineering	Master of Science	13	10	\$58,516	-
	UAF	Mining Engineering	Master of Science	9	1	-	-
	UAF	Mineral Preparation Engineer	Master of Science	4	2	-	-

*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.