## CAREER PATHWAYS FOR ADULT EDUCATION

# **ABOUT CAREER PATHWAYS**

Career Pathways combine education, work readiness and job training to attain necessary skills and credentials for specific in-demand occupations or industries. Career Pathway maps illustrate how students can move along a career path in a specific occupational area from adult education through post-secondary or advanced job-training programs and into employment. To advance along a career pathway more quickly, explore opportunities to participate in education and training concurrently. It is suggested that this map be used in conjunction with information on specific education and training programs in Wyoming or in your local area.

Natural Resources Extraction & Processing

(Including Oil & Gas)

Industrial & Engineering Technology Career Cluster

**Sector Description:**

This sector falls under the Industrial & Engineering Technology career cluster and includes the extraction of ores,

fossil fuels, minerals, stone, clay, gravel and similar commodities. It comprises the coal mining industry, metal

mining industry, nonmetallic mineral mining industry and oil & gas extraction industry. Mining in Wyoming is a

growth industry offering many employment opportunities. Positions vary, ranging from unskilled laborer and **Name**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

apprentice jobs to skilled mining experts that require extensive training and education.

**Sample Entry or Certificate Options**

Helpers-Extraction Workers

**Sample Associates & Bachelor (or higher) Degree Options**

Geological Technician

Service Unit Operators (Oil & Gas)

**Sequential -or- Concurrent**

#### Adult Education

-Core Skills: Reading, Writing, Math, Science

-English Language Skills

-Career Exploration & Planning

-High School Equivalency Preparation

-Employability Skills & Digital Literacy

-Integrated Education and Training

-Work Experience Trainings

Petroleum Engineer

Excavating & Loading Machine & Dragline Operators: Surface Mining

Oil Monitoring Analyst

Biofuels Technology & Product Development Manager

Industrial Machinery Mechanics

Mine Supervisor

Welders, Cutters, Solderers & Blazers

##### Additional Occupational Options

* Computer technician
* Earth drillers **Customized Pathway-Jobs/Courses**
* Petroleum pump operators
* Wellhead pumpers
* Rotary drill operators
* Roustabouts & Rig Hands

## CAREER PATHWAYS FOR ADULT EDUCATION- Natural Resources Extraction & Processing

**ADULT EDUCATION-High School Equivalency (HSE)**

**Median Wages: $10.49 Hourly / $21,818 Annual**

Many jobs require a high school diploma/equivalent. The official HSE tests (GED or HiSET)

require that students demonstrate proficiency in English, reading, writing, math, science

and social studies.

**SKILLS**

* read for comprehension
* understand math and its practical applications to the career
* using scientific rules & methods to solve problems
* effective oral and written communication skills
* strong critical thinking abilities: use of logic and reasoning to identify strengths and

weaknesses of alternative solutions, conclusions or approaches to problems.

* Digitally literate: proficient in Word, Excel and Powerpoint

HELPERS-EXTRACTION WORKERS

Median Wages: $20.73 Hourly / $43,100 Annual

**Description**: Help extraction craft workers, such as earth drillers, blasters and explosives workers, derrick operators, and mining machine operators, by performing duties requiring less skill. Duties include supplying equipment or cleaning work area.

**Job Duties**

* Observe & monitor equipment operation during extraction process to detect problems.
* Repair & maintain automotive and drilling, extracting & boring equipment, using hand tools
* Load materials, dig trenches and move equipment to excavation sites
* Collect & examine geological matter, using hand tools and testing devices
* Provide assistance, as needed, to extraction craft workers

**SERVICE UNIT OPERATORS: OIL & GAS**

**Median Wages: $24.11 Hourly / $ $50,140 Annual**

**Description:**  Operate equipment to increase oil flow from producing wells or to remove stuck pipe, casing, tools, or other obstructions from drilling wells. Includes fishing-tool technicians. Sample Job titles include: Pulling unit operator, Reverse unit operator, Rig operator, Service operator, Tool pusher, well servicing rig operator, & wireline operator.

**Job Duties**

* Maintain & perform safety inspections on equipment and tools
* Operate pumps & controls that raise derricks or level rigs
* Perforate well casings or sidewalls of boreholes with explosive charges
* Interpret instrument readings to ascertain the depth of obstruction
* Thread cables through derrick pulleys, using hand tools
* Apply green technologies/techniques, such as the use of coiled tubing, slim-hole drilling, horizontal drilling, hydraulic fracturing or gas lift systems.

**EXCAVATING & LOADING MACHINE & DRAGLIE OPERATORS-SURFACE MINING**

**Median Wages: $23.24 Hourly / $48,350 Annual**

**Description:** Operate or tend machinery at surface mining sites, equipped with scoops, shovels, or buckets to excavate and load loose materials.

**Job Duties**

* Operate machinery for backfilling excavations, vibrating or breaking rock/concrete
* Move materials over short distances / handle slides, mud or pit cleanings or maintenance
* Direct workers engaged in placing blocks/outriggers to prevent capsizing of machines when lifting heavy loads
* Set up, maintain, and inspect equipment

**MINE SUPERVISOR**

**Median Wages: $39.18 Hourly / $81,494 Annual**

**Description:** Knowledge of MSHA rules and regulations; team development & crew training, work notification planning, act as Fire Boss for the mine, cost savings and efficient improvement projects, conflict resolution.

**Job Duties**

* Coordinate manpower requirements in the area to develop work assignments
* Conduct safety & housekeeping audits/behavior audits
* Maintain knowledge of MITS
* Ensure warehouse is stocked appropriately
* Serve as a technical resources for mine crews
* Human resource duties, approval of payroll, respond to grievances and administer appropriate discipline when necessary

**PETROLEUM ENGINEER**

**Median Wages: $63.37 Hourly / $131,800 Annual**

**Description:** Devise methods to improve oil and gas extraction and production and determine the need for new or modified tool designs.

**Job Duties**

* Monitor production rates & plan rework processes to improve production
* Direct & monitor the completion n& evaluation of wells, well testing, or well surveys
* Assess costs & estimate the production capabilities & economic value of oil and gas wells, to evaluate the economic viability of potential drilling sites
* Write technical reports for engineering & management personnel

**OTHER OCCUPATION**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Median Wages:**

**Description**:

**Job Duties**