BACKGROUND:
In January of 2014 the Tulsa Regional Chamber worked with a consulting team from the Council for Adult and Experiential Learning (CAEL) and Avalanche Consulting to conduct a 24-week Workforce Analysis and Workforce Alignment Strategy for the greater Tulsa region. This expanded on Tulsa’s Future II economic development plan, which identified 7 Regional Power Sectors—industries expecting high regional growth—and outlined a number of strategies for workforce and education alignment to strengthen the regional talent development system.

These Career Pathways provide a tool for addressing one of these strategies: better career awareness for all area residents. The Pathways provide area residents with accessible information around in-demand industry sectors and occupations in the region, including the skills and credentials required to enter and advance in an industry; a high-level view of the paths individuals can follow to develop a career that best fits their interests, skills, and needs; and an idea of the credentials and education they’ll need to move along that path and make informed decisions in planning out their future.

METHODOLOGY:
CAEL began by working with the Tulsa Regional Chamber and its industry stakeholders to identify the most common and in-demand occupations within each of the seven regional power sectors, as well as in two additional sectors (Construction and Hospitality) identified specifically for this project as areas of high need for traditionally hard-to-serve populations. After collecting national, regional, and local information around the basic tasks, education, credentials, and knowledges/skills required for each occupation, regional industry employers were asked to validate this information based on their own hiring experience. They were also asked to provide an average salary range for employees in these positions and indicate any positions—both within the same industry and in others—that employees can transfer into.

Using this information, the occupations for each sector were grouped into three levels based on the credentials/experience they required, and their potential pay:

1. **Entry Level:** These positions are the best entry points into a sector for an individual with little experience or education as they typically require only a HS diploma (occasionally a certification or minimal vocational training) and little to no prior related work experience.
2. **Mid-Level:** While these positions pay more than those at the entry level, they also involve more skilled work, requiring greater education—anywhere from vocational training (or certifications) to a 4-year bachelor’s degree—and some level of related work experience.
3. **Senior Level:** These positions are typically high-level management positions and require significant education (typically a 4-year bachelor’s or graduate degree) and extensive experience in the industry.

This information was also used to map out connections and paths between individual occupations within and across industry sectors. For each occupation, any paths to other occupations are either one of two types:

1. **Lateral** (→) meaning an individual can transfer into that occupation without significant extra education or experience. Often the average salaries are similar.
2. **Promotional** (↑) meaning an individual will need additional education or industry-related work experience to move up. This typically involves an increase in average salary.
WHAT'S INSIDE:
The information in the Pathways is broken down into three parts:

1. **Condensed Cross-Sector Overview:** shows a few selected career paths that individuals can follow within and across Tulsa's nine power sectors. Information for each sector is broken down into:

2. **Sector Pathway Map:** shows the connections and pathways between occupations within a sector (as well as where certain occupations connect to similar occupations in other sectors) and provides basic information on each occupation.

3. **Sector Occupation Detail:** shows detailed information for each occupation in the sector. This information is laid out like the example below:

USING THE PATHWAYS:
The information in these pathways is not intended to provide an exhaustive or highly detailed picture of each industry, or a comprehensive list of every occupation an industry employer might hire. Rather, it is intended to provide the job-seeker or transitioning worker with a high-level view of common positions within each sector, as well as potential opportunities for movement within and across sectors. Our hope is that they can then use this information as a starting point for further exploring specific industries and occupations of interest in order to make more informed decisions around their future career.

FOR MORE INFORMATION, CONTACT:
Denise Reid
Executive Director of Mosaic & Workforce
Tulsa Regional Chamber
denisereid@tulsachamber.com

Developed by the Council for Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
WAREHOUSE WORKER [ENTRY-LEVEL]

- **Education**: HS
- **Work Experience**: NONE
- **Salary**: $30,000-40,000

Warehouse workers service orders from warehouse inventory, receive and process incoming stock and materials, and manage/organize stock in the warehouse by counting and adjusting inventory.

**Skills & Knowledge**:
1. Manual dexterity
2. Picking and sorting
3. Heavy lifting

**Sector Pathways**:
- General Laborer
- Shipping & Receiving Clerk
- Material Handlers

**Cross-Sector Pathways**:
- Warehouse Worker (Manufacturing)
- General Laborers (Energy, TDL)

GENERAL LABORER [ENTRY-LEVEL]

- **Education**: HS
- **Work Experience**: NONE
- **Salary**: $40,000-45,000

General laborers manually move freight, stock, or other materials or perform other general labor.

**Skills & Knowledge**:
1. Manual dexterity
2. Heavy lifting
3. Picking & sorting

**Sector Pathways**:
- Warehouse Worker
- Shipping & Receiving Clerk
- Material Handlers

**Cross-Sector Pathways**:
- Warehouse Worker (Manufacturing, TDL)
- General Laborers (Energy, TDL)
- Helper/Finisher (Construction)

ASSEMBLY [ENTRY-LEVEL]

- **Education**: HS
- **Work Experience**: OJT
- **Salary**: $40,000-50,000

Assembly workers use power tools and some precision instruments to assemble an entire product or part of a product based on blueprints or technical drawings. They may also perform preventative and reparative maintenance on airframe components.

**Skills & Knowledge**:
1. Teamwork
2. Mechanical skills
3. Blueprints/technical drawings
4. Quality control
5. Verbal communication

**Sector Pathways**:
- Fabricator
- Team Assembler

**Cross-Sector Pathways**:
- Assembly (Energy, Manufacturing)

SHIPPING & RECEIVING CLERK [ENTRY-LEVEL]

- **Education**: HS
- **Work Experience**: 0-1
- **Salary**: $45,000-50,000

Shipping & receiving clerks verify and maintain records on incoming and outgoing shipments and prepare items for shipment. Their duties can include assembling and shipping equipment or material; receiving, unpacking, verifying and recording incoming equipment or material; and arranging for the transportation of products.

**Skills & Knowledge**:
1. Inventory control
2. Attention to detail
3. Data entry
4. Customer service
5. Multi-tasking

**Sector Pathways**:
- Material Handlers
- Quality Control

**Cross-Sector Pathways**:
- Shipping & Receiving Clerk (Manufacturing, TDL)
- Scheduler/Production Planner (Manufacturing)
- General Laborers/Material Handlers/Truck Loaders (TDL)
### MATERIAL HANDLERS [ENTRY-LEVEL]

Material handlers support shipping & receiving clerks by executing materials movement activities in the warehouse, and on the shop floor including loading and unloading trucks. They will pick and put away materials (including raw materials, work in process, and finished parts) as well as deliver them to the necessary locations to facilitate the manufacturing.

- **Education:** HS
- **Work Experience:** 0-2
- **Other Credentials:** Forklift training
- **Salary:** $40,000-45,000

Skills & Knowledge:
1. Physical dexterity
2. Inventory control
3. Attention to detail
4. Teamwork
5. Hand-eye coordination

Sector Pathways:
- Shipping & Receiving Clerk
- Front Line Supervisor:
  - HS
  - Associate Degree

Cross-Sector Pathways:
- Shipping & Receiving Clerk (Manufacturing, TDL)
- Scheduler/Production Planner (Manufacturing)
- General Laborers/Material Handlers/Truck Loaders (TDL)
- Forklift Operator (Manufacturing)

### FABRICATOR [ENTRY-LEVEL]

Fabricators join metal pieces together to create a product or to use as pieces in other products. They must maintain the quality of the material or product, as well as workplace safety by following standard processes and procedures.

- **Education:** HS
- **Work Experience:** 0-2 + OJT
- **Salary:** $45,000-50,000

Skills & Knowledge:
1. Machine operation
2. Blueprints/technical drawings
3. Mathematics knowledge
4. Computer skills

Sector Pathways:
- Welder, Cutter, Brazer, Solderer:
  - HS
  - CV

Cross-Sector Pathways:
- CNC Machine Operator (Manufacturing)

### WELDER, CUTTER, BRAZER, SOLDERER [ENTRY-LEVEL]

Welders, cutters, brazers, and solderers use hand-held or remotely controlled equipment to join or cut metal parts. They also fill holes, indentations, or seams of metal products.

- **Education:** CV (Welding certificate)
- **Work Experience:** 0-2
- **Salary:** $55,000-60,000

Skills & Knowledge:
1. Welding ability
2. Precise hand-eye coordination
3. Physical dexterity
4. Process & diagnostic skills
5. Troubleshooting

Sector Pathways:
- Production Supervisor:
  - HS
  - Associate Degree

Cross-Sector Pathways:
- Welder, Cutter, Brazer, Solderer (Energy)
- Welder (Manufacturing)

### QUALITY CONTROL [ENTRY-LEVEL]

Quality control workers assure consistent quality of production by developing and enforcing good automated manufacturing practice (GAMP) systems; validating processes; and identifying, analyzing, and correcting quality defects.

- **Education:** A
- **Work Experience:** +2
- **Salary:** $50,000-60,000

Skills & Knowledge:
1. Measurement systems
2. Attention to detail
3. Problem solving
4. Verbal & written communication
5. Mathematics/statistics

Sector Pathways:
- Front Line Supervisor:
  - HS
  - Associate Degree

Cross-Sector Pathways:
- Quality Assurance (Manufacturing)
### TEAM ASSEMBLER [ENTRY-LEVEL]

- **Education:** HS
- **Work Experience:** 1-2
- **Salary:** $50,000-55,000

Team assemblers work as part of a team with responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them. They may also perform preventative and reparative maintenance on airframe components.

**Skills & Knowledge:**
1. Quality control
2. Mechanical skills
3. Teamwork
4. Manual dexterity
5. Verbal communication

**Sector Pathways:**
- Quality Control
- Front Line Supervisor
- Airframe/Aerostructure & Powerplant Mechanic

**Cross-Sector Pathways:**
- Quality Assurance (Manufacturing)
- Team Assembler (Energy)

------

### AIRFRAME/AEROSTRUCTURE & POWERPLANT MECHANIC [ENTRY-LEVEL]

- **Education:** CV-A (Aviation Maintenance or related)
- **Work Experience:** 2+
- **Salary:** $45,000-55,000

Airframe/Aerospace & Powerplant (AAP) mechanics are certified to perform almost all manufacturing, maintenance, and repair work on airplanes and aerostructures, and are responsible for inspecting, maintaining, and repairing planes as needed.

**Skills & Knowledge:**
1. Mechanical systems
2. Troubleshooting & repair
3. Analytical problem solving
4. Blueprints/technical drawings
5. Manual dexterity/heavy lifting

**Sector Pathways:**
- Front Line Supervisor
- Production Supervisor
- Operations Supervisor

**Cross-Sector Pathways:**
- Production Supervisor
- Operations Supervisor

**Other Credentials:** AAP License

------

### FRONT LINE SUPERVISOR [MID-LEVEL]

- **Education:** A
- **Work Experience:** 2-5
- **Salary:** $50,000-55,000

Front line supervisors provide technical direction in a particular department according to company policies. They are responsible for utilizing their technical competence to select and train staff, ensure a safe work place, and implement and maintain compliance status within their department. They also improve processes and operations by tracking business metrics and interfacing with support positions.

**Skills & Knowledge:**
1. Management/leadership
2. Interpersonal skills
3. Computer skills
4. Analytical problem solving
5. Verbal & written communication

**Sector Pathways:**
- Production Supervisor
- Operations Supervisor
- Operations Manager
- Production Manager

**Cross-Sector Pathways:**
- Production Supervisor (Manufacturing)
- Planning Supervisor (Manufacturing)
- Front Line Supervisor (TDL, Energy)

------

### PRODUCTION SUPERVISOR [MID-LEVEL]

- **Education:** A
- **Work Experience:** 2-5
- **Salary:** $70,000-75,000

Production supervisors are responsible for supervising the timely and cost-effective production of company products or repair of parts to ensure that reliability and quality standards conform to customer, government and company requirements.

**Skills & Knowledge:**
1. Management/leadership
2. Verbal & written communication
3. Analytical problem solving
4. Computer skills
5. Six Sigma/Lean

**Sector Pathways:**
- Front Line Supervisor
- Operations Supervisor
- Production Manager

**Cross-Sector Pathways:**
- Production Supervisor (Manufacturing)
OPERATIONS SUPERVISOR  [MID-LEVEL]

Operations supervisors are responsible for seeing that materials and supplies are stocked and that all the equipment is up to date, safe, and in proper working order for a particular operation area. They also ensure that area’s deadlines are met, that employees are functioning at peak performance, and that processes and procedures for operation are maintained and improved on.

**Education:**
- Bachelor’s Degree

**Work Experience:** 5+

**Skills & Knowledge:**
1. Management/leadership
2. Verbal & written communication
3. Teamwork
4. Analytical problem solving
5. Computer skills

**Sector Pathways:**
- Production Supervisor
- Front Line Supervisor
- Operations Manager:
  - Aerospace
  - Engineering

**Cross-Sector Pathways:**
- Planning Supervisor (Manufacturing)

**Salary:** $75,000-80,000

---

ENGINEERING LAB TECHNICIAN  [MID-LEVEL]

Engineering lab technicians perform laboratory tests to lay out, fabricate, assemble, test and troubleshoot mechanical, electromechanical, structural, hydraulic, and pneumatic aircraft parts, assemblies, mechanisms and test equipment to assist engineers in determining faulty design or fabrication procedures.

**Education:**
- Laboratory Testing or related

**Work Experience:** 5+

**Other Credentials:** AAP License

**Skills & Knowledge:**
1. Mechanical systems & processes
2. Analytical problem solving
3. Computer skills
4. Blueprints/technical drawings
5. Testing & troubleshooting

**Sector Pathways:**
- Mechanical Engineer:
- Industrial/Liaison Engineer:
- Aerospace Engineer:
- Engineering Lab Technician:
- Quality Engineering Specialist:

**Cross-Sector Pathways:**
- Planning Supervisor (Manufacturing)

**Salary:** $65,000-70,000

---

NON-DESTRUCTIVE INSPECTOR  [MID-LEVEL]

Non-destructive inspectors (NDIs) conduct thermal imaging, radiographic, penetrant, ultrasonic, magnetic particle or other nondestructive tests of nonmetallic or metallic aircraft structural parts and components that are used in operational aircraft applications. They ensure that new or repaired products meet company, customer and FAA specifications and standards.

**Education:**
- High School Diploma/GED

**Work Experience:** 4+

**Other Credentials:** Non-Destructive Inspection certification

**Skills & Knowledge:**
1. Testing & troubleshooting
2. Quality control
3. Analytical problem solving
4. Computer skills
5. Mechanical systems/processes

**Sector Pathways:**
- Engineering Lab Technician:
- Quality Engineering Specialist:

**Cross-Sector Pathways:**
- Planning Supervisor (Manufacturing)

**Salary:** $55,000-60,000

---

QUALITY ENGINEERING SPECIALIST  [MID-LEVEL]

Quality engineering specialists apply expert and specialized knowledge in planning and directing activities concerned with development, application, and maintenance of quality standards for industrial processes, materials, and products.

**Education:**
- Engineering or related

**Work Experience:** 2-5

**Skills & Knowledge:**
1. Quality assurance
2. Testing & troubleshooting
3. Analytical problem solving
4. Project management
5. Detail oriented

**Sector Pathways:**
- Project Engineer
- Mechanical/Manufacturing Engineer
- Industrial/Liaison Engineer
- Engineering Supervisor:

**Salary:** $65,000-75,000

---

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
**MECHANICAL/MANUFACTURING ENGINEER** [MID-LEVEL]

Mechanical or manufacturing engineers manage the design, construction and testing of any manufacturing product or machines used in the production and assembly of aircraft and other aerostructures. Mechanical engineers decide which machines are the most efficient for a specific production system, and determine the sequence of the machines based on factors like budget, efficiency, energy, time, and quality.

**Skills & Knowledge:**
1. Mechanical systems/processes
2. Production & processing
3. Computer aided design software
4. Blueprints/technical drawings

**Education:** B (Aerospace/Mechanical Engineering or related)

**Work Experience:** 2+

**Salary:** $75,000-80,000

**Cross-Sector Pathways:**
- Quality Engineering Specialist
- Aerospace Engineer
- Engineering Supervisor:

**Sector Pathways:**
- Quality Engineering Specialist
- Aerospace Engineer
- Engineering Supervisor:

**AEROSPACE ENGINEER** [MID-LEVEL]

Aerospace engineers design, construct, and test aircraft, missiles, and spacecraft. They may conduct basic and applied research to evaluate the adaptability of materials and equipment to aircraft design and manufacture. They will also recommend improvements in testing, manufacturing, and assembly equipment and techniques.

**Skills & Knowledge:**
1. Mechanical systems & processes
2. Production & processing
3. Blueprints/technical drawings
4. Computer aided design software
5. Complex problem solving

**Education:** B (Aerospace Engineering)

**Work Experience:** 5-7

**Salary:** $80,000-85,000

**Cross-Sector Pathways:**
- Mechanical Engineer
- Project Engineer
- Operations Manager
- Engineering Supervisor:

**INDUSTRIAL/LIAISON ENGINEER** [MID-LEVEL]

Industrial engineers find ways to eliminate wastefulness in production processes. They devise efficient systems that integrate workers, machines, materials, information, and energy, and develop ways to increase productivity, maximize efficiency, and manage human capital more effectively.

**Skills & Knowledge:**
1. Analytic thinking
2. Complex problem solving
3. Organization/prioritization
4. Strategic thinking/planning
5. Verbal & written communication

**Education:** B (Industrial Engineering or related)

**Work Experience:** 2+

**Salary:** $85,000-90,000

**Cross-Sector Pathways:**
- Quality Engineering Specialist
- Operations Manager
- Production Manager
- Engineering Supervisor:

**PROJECT ENGINEER** [MID-LEVEL]

Project engineers support the General Manager with planning, organization, implementation, integration, and completion of assigned engineering projects. They perform project and system engineering tasks including internal analyses and reviewing trade studies, then create proper documentation and records to support ongoing engineering activities. They may also negotiate with third part contractors/vendors and are responsible for establishing and managing based on a detailed budget.

**Skills & Knowledge:**
1. Technical project management
2. Lean manufacturing
3. Leadership
4. Strategic thinking/problem solving
5. Verbal & written communication

**Education:** B (Engineering or related)

**Work Experience:** 2-5

**Salary:** $70,000-75,000

**Cross-Sector Pathways:**
- Quality Engineering Specialist
- Production Manager:

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
**AEROSPACE & AVIATION**

<table>
<thead>
<tr>
<th>Role</th>
<th>Education</th>
<th>Work Experience</th>
<th>Salary</th>
<th>Sector Pathways</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPERATIONS MANAGER</strong></td>
<td>B (Business, Engineering, Operations, or related)</td>
<td>7+</td>
<td>$80,000-90,000</td>
<td>Production Manager, General Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cross-Sector Pathways: Production Manager (Manufacturing), Operations Manager (TDL)</td>
</tr>
<tr>
<td><strong>PRODUCTION MANAGER</strong></td>
<td>B (Business, Operations, or related)</td>
<td>7+</td>
<td>$75,000-85,000</td>
<td>Production Manager, General Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cross-Sector Pathways: Production Manager (Manufacturing), Operations Manager (TDL)</td>
</tr>
<tr>
<td><strong>ENGINEERING SUPERVISOR</strong></td>
<td>M (Engineering or related)</td>
<td>7+</td>
<td>$80,000-90,000</td>
<td>General Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cross-Sector Pathways: Engineering Manager (Manufacturing)</td>
</tr>
<tr>
<td><strong>GENERAL MANAGER</strong></td>
<td>B-M</td>
<td>10+</td>
<td>$90,000-100,000</td>
<td>General Manager (Manufacturing, TDL, Energy)</td>
</tr>
</tbody>
</table>

**Skills & Knowledge:**
1. Management/leadership
2. Lean manufacturing
3. Problem solving
4. Verbal & writing communication

**Sector Pathways:**
- Production Manager
- General Manager
- Operations Manager

**Cross-Sector Pathways:**
- Production Manager (Manufacturing)
- Operations Manager (TDL)
- Engineering Manager (Manufacturing)

**Additional Education**
- Certificate/Vocational Training
- Bachelor’s Degree
- Master’s Degree

**On-The-Job Training**
- Years of Experience

**Occupation may exist in other sectors/industries**

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
### HELPER/FINISHER [ENTRY-LEVEL]

These workers help journeyman and skilled construction workers by performing duties that require less skill. These can include using, supplying or holding materials or tools, and cleaning work areas and equipment.

**Education:** HS  
**Work Experience:** OJT  
**Salary:** $30,000–35,000

**Skills & Knowledge:**
1. Basic construction knowledge  
2. Manual dexterity  
3. Heavy lifting  
4. Attention to detail

**Sector Pathways:**
- Apprentice Tile/Marble Setter: + HS, CV
- Apprentice Bricklayer: + HS, CV
- Apprentice Stonemason: + HS, CV

**Cross-Sector Pathways:**
- Warehouse Worker (Manufacturing, Aerospace, TDL)  
- General Laborer (Aerospace, Energy, TDL)

### APPRENTICE TILE/MARBLE SETTER [ENTRY-LEVEL]

These skilled workers help tile and marble setters by performing duties requiring less skill. These duties include using, supplying and holding materials or tools, and cleaning work areas and equipment.

**Education:** HS  
**Work Experience:** 0–1 OJT  
**Salary:** $35,000–40,000

**Skills & Knowledge:**
1. Specialized construction knowledge  
2. Manual dexterity  
3. Heavy lifting  
4. Machinery operation  
5. Attention to detail

**Sector Pathways:**
- Tile & Marble Setter: + HS, CV

### APPRENTICE BRICKLAYER [ENTRY-LEVEL]

These skilled workers help bricklayers by performing duties requiring less skill. These include using, supplying or holding necessary materials and tools, and cleaning work areas and equipment.

**Education:** HS  
**Work Experience:** 0–1 OJT  
**Salary:** $35,000–40,000

**Skills & Knowledge:**
1. Specialized construction knowledge  
2. Manual dexterity  
3. Heavy lifting  
4. Machinery operation  
5. Attention to detail

**Sector Pathways:**
- Bricklayer: + HS, CV

### APPRENTICE STONEMASON [ENTRY-LEVEL]

These skilled workers help stonemasons by performing duties requiring less skill. These include using, supplying or holding materials or tools, and cleaning work areas and equipment.

**Education:** HS  
**Work Experience:** 0–1 OJT  
**Salary:** $35,000–40,000

**Skills & Knowledge:**
1. Specialized construction knowledge  
2. Manual dexterity  
3. Heavy lifting  
4. Machinery operation  
5. Attention to detail

**Sector Pathways:**
- Stonemason: + HS, CV

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
### TILE & MARBLE SETTER [MID-LEVEL]
- **Education:** CV (Apprenticeship training)
- **Work Experience:** 3-5
- **Salary:** $40,000-45,000

These journeyman workers apply hard tile, marble, and wood tile to walls, floors, ceilings, and roof decks.

**Skills & Knowledge:**
1. Specialized construction knowledge
2. Blueprint/technical drawings
3. Manual dexterity
4. Machinery operation
5. Problem solving

**Sector Pathways:**
- Construction Foreman: 

### BRICK LAYER [MID-LEVEL]
- **Education:** CV (Apprenticeship training)
- **Work Experience:** 3-5
- **Salary:** $40,000-45,000

These journeyman workers lay and bind building materials, such as brick, structural tile, concrete block, cinder block, glass block, and terra-cotta block, with mortar and other substances to construct or repair walls, partitions, arches, sewers, and other structures.

**Skills & Knowledge:**
1. Specialized construction knowledge
2. Blueprint/technical drawings
3. Manual dexterity
4. Machinery operation
5. Problem solving

**Sector Pathways:**
- Construction Foreman: 

### STONEMASON [MID-LEVEL]
- **Education:** CV (Apprenticeship training)
- **Work Experience:** 3-5
- **Salary:** $40,000-45,000

These journeyman workers build stone structures, such as piers, walls, and abutments. They may also lay sidewalks, curbstones, or special types of masonry for vats, tanks, and floors.

**Skills & Knowledge:**
1. Specialized construction knowledge
2. Blueprint/technical drawings
3. Manual dexterity
4. Machinery operation
5. Problem solving

**Sector Pathways:**
- Construction Foreman: 

### CONSTRUCTION FOREMAN [SENIOR-LEVEL]
- **Education:** A (Construction Management or related)
- **Work Experience:** 5-10
- **Salary:** $50,000-60,000

Foremen on construction projects plan, direct, or coordinate activities concerned with the construction and maintenance of structures, facilities, and systems. They participate in the conceptual development of a construction project and oversee its organization, scheduling, budgeting, and implementation. This occupation includes managers in specialized construction fields, such as carpentry or plumbing.

**Skills & Knowledge:**
1. Advanced construction knowledge
2. Management/leadership
3. Blueprint/technical drawing
4. Problem solving/critical thinking
5. Verbal & written communication
<table>
<thead>
<tr>
<th>Job Title</th>
<th>Entry-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENERAL LABORER</td>
<td></td>
</tr>
<tr>
<td>Education: HS</td>
<td>Work Experience: NONE</td>
</tr>
<tr>
<td>Salary: $30,000-35,000</td>
<td></td>
</tr>
<tr>
<td>Description: General laborers manually move freight, stock, or other materials or perform other general labor.</td>
<td></td>
</tr>
<tr>
<td>Skills &amp; Knowledge:</td>
<td></td>
</tr>
<tr>
<td>1. Manual dexterity</td>
<td></td>
</tr>
<tr>
<td>2. Heavy lifting &amp; moving</td>
<td></td>
</tr>
<tr>
<td>3. Verbal communication</td>
<td></td>
</tr>
<tr>
<td>4. Sorting</td>
<td></td>
</tr>
<tr>
<td>5. Responsibility</td>
<td></td>
</tr>
<tr>
<td>Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Assembly</td>
<td></td>
</tr>
<tr>
<td>Welder, Cutter, Brazer, Solderer:</td>
<td></td>
</tr>
<tr>
<td>Cross-Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Machine Operator (Manufacturing)</td>
<td></td>
</tr>
<tr>
<td>Helper/Finisher (Construction)</td>
<td></td>
</tr>
<tr>
<td>General Laborer/Material Handlers/Truck Loaders (TDL)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Entry-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSEMBLY</td>
<td></td>
</tr>
<tr>
<td>Education: HS</td>
<td>Work Experience: OJT</td>
</tr>
<tr>
<td>Salary: $30,000-40,000</td>
<td></td>
</tr>
<tr>
<td>Description: Assemblers are responsible for assembling an entire product or part of a product. They may also perform preventative and reparative maintenance.</td>
<td></td>
</tr>
<tr>
<td>Skills &amp; Knowledge:</td>
<td></td>
</tr>
<tr>
<td>1. Verbal communication</td>
<td></td>
</tr>
<tr>
<td>2. Monitoring</td>
<td></td>
</tr>
<tr>
<td>3. Team work</td>
<td></td>
</tr>
<tr>
<td>4. Quality control</td>
<td></td>
</tr>
<tr>
<td>Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>General Laborer</td>
<td></td>
</tr>
<tr>
<td>Welder, Cutter, Brazer, Solderer:</td>
<td></td>
</tr>
<tr>
<td>Team Assembler:</td>
<td></td>
</tr>
<tr>
<td>Cross-Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Machine Operator (Manufacturing)</td>
<td></td>
</tr>
<tr>
<td>Assembly Operators (Manufacturing)</td>
<td></td>
</tr>
<tr>
<td>Assembly (Aerospace)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Entry-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELDER, CUTTER, BRAZER, SOLDERER</td>
<td></td>
</tr>
<tr>
<td>Education: CV (Welding certification)</td>
<td>Work Experience: 0-2</td>
</tr>
<tr>
<td>Salary: $45,000-50,000</td>
<td></td>
</tr>
<tr>
<td>Description: Welders, cutters, brazers, or solderers use hand-held or remotely controlled equipment to join or cut metal parts. They also fill holes, indentations, or seams of metal products.</td>
<td></td>
</tr>
<tr>
<td>Skills &amp; Knowledge:</td>
<td></td>
</tr>
<tr>
<td>1. Welding, cutting, soldering</td>
<td></td>
</tr>
<tr>
<td>2. Physical dexterity</td>
<td></td>
</tr>
<tr>
<td>3. Hand-eye coordination</td>
<td></td>
</tr>
<tr>
<td>4. Process &amp; diagnostic skills</td>
<td></td>
</tr>
<tr>
<td>5. Troubleshooting</td>
<td></td>
</tr>
<tr>
<td>Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Front Line Supervisor:</td>
<td></td>
</tr>
<tr>
<td>Cross-Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Welder, Cutter, Brazer, Solderer (Aerospace)</td>
<td></td>
</tr>
<tr>
<td>Welder (Manufacturing)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Job Title</th>
<th>Entry-Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEAM ASSEMBLER</td>
<td></td>
</tr>
<tr>
<td>Education: HS-CV</td>
<td>Work Experience: 1-2</td>
</tr>
<tr>
<td>Salary: $45,000-55,000</td>
<td></td>
</tr>
<tr>
<td>Description: Team assemblers work as part of a team having responsibility for assembling an entire product or component of a product. Team assemblers can perform all tasks conducted by the team in the assembly process and rotate through all or most of them rather than being assigned to a specific task on a permanent basis.</td>
<td></td>
</tr>
<tr>
<td>Skills &amp; Knowledge:</td>
<td></td>
</tr>
<tr>
<td>1. Quality control</td>
<td></td>
</tr>
<tr>
<td>2. Teamwork</td>
<td></td>
</tr>
<tr>
<td>3. Verbal communication</td>
<td></td>
</tr>
<tr>
<td>4. Manual dexterity</td>
<td></td>
</tr>
<tr>
<td>5. Responsible</td>
<td></td>
</tr>
<tr>
<td>Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Front Line Supervisor:</td>
<td></td>
</tr>
<tr>
<td>Cross-Sector Pathways:</td>
<td></td>
</tr>
<tr>
<td>Team Assembler (Aerospace)</td>
<td></td>
</tr>
<tr>
<td>Production Supervisor (Manufacturing)</td>
<td></td>
</tr>
</tbody>
</table>
FRONT LINE SUPERVISOR  [MID-LEVEL]

Education: A  Work Experience: 2-5  Salary: $55,000-65,000

Frontline supervisors provide technical direction in a department according to company policies and corporate business plans, and provide technical competence through proper selection and training of staff and the work force. They also ensure a safe workplace and implement strategies to reduce the cost of goods and improve existing processes.

Skills & Knowledge:
1. Supervision & leadership
2. Verbal & written communication
3. Analytical problem solving
4. Computer skills
5. Responsible

Sector Pathways:
1. General Manager
2. Business Analyst

Cross-Sector Pathways:
Planning Supervisor (Manufacturing)
Production Supervisor (Aerospace, Manufacturing)
Operations Supervisor (Aerospace)
Front Line Supervisor (Aerospace, TDL)

BUSINESS ANALYST  [MID-LEVEL]

Education: B  Work Experience: 5+  Salary: $55,000-60,000

Business analysts gather documentation for energy technology projects in order to understand technical and non-technical challenges, and work with subject matter experts to develop plans to overcome them. They also develop business and technical process models and workflows, and facilitate activities such as planning, communication, testing, training development and delivery.

Skills & Knowledge:
1. Data analysis
2. Analytical & critical thinking
3. Strategic thinking & planning
4. Verbal & written communication
5. Computer skills

Sector Pathways:
1. General Manager

Cross-Sector Pathways:
Manager (Manufacturing)
Supply Chain Manager (TDL)
Analyst (TDL)
Staff Accountant/Auditor (Prof. Svcs.)

GENERAL MANAGER  [SENIOR-LEVEL]

Education: B  Work Experience: 7-10  Salary: $70,000-75,000

General managers are responsible for managing a single unit, different sectors, or multiple units of an energy company or plant. They also hire and train employees, prepare reports, and set budgets.

Skills & Knowledge:
1. Management & leadership
2. Strategic thinking & planning
3. Analytical problem solving
4. Verbal & written communication

Cross-Sector Pathways:
General Manager (Aerospace, TDL)
PATIENT REPRESENTATIVE/CLERK/RECEPTIONIST

ENTRY-LEVEL

Responsible for a variety of activities related to patient intake and care. They work in medical offices and serve as the first point of contact for patients entering the facility. They greet and check-in patients, verify information and enter it into the system, collect payments for services, answer the phone, schedule appointments, and file paperwork.

Skills & Knowledge:
1. Customer service
2. Clerical skills
3. Verbal & written communication
4. Organization & prioritization
5. Interpersonal skills

Sector Pathways:
- Housekeeping/Food Service
  - Patient Care Technician
  - Advanced Unlicensed Assistant
  - Certified/Registered Medical Assistant
  - Certified Nursing Assistant/Aid
  - Certified Pharmacy Technician
  - Certified Phlebotomist

Cross-Sector Pathways:
- Customer Service
  (Professional Services, IT, Hospitality)

Education: HS
Work Experience: OJT
Salary: <$30,000

HOUSEKEEPING/FOOD SERVICE

ENTRY-LEVEL

Provides hospitality support to patients according to hospital or clinic policy. These tasks can include: preparing and delivering food; processing food orders and hospitality requests; cleaning patient rooms, nursing units, surgical areas, and administrative offices; restocking supplies; and cleaning and providing sanitary linens.

Skills & Knowledge:
1. Food preparation
2. Hospital-grade cleaning
3. Manual dexterity
4. Customer service
5. Attention to detail

Sector Pathways:
- Patient Representative/Clerk/Receptionist
  - Advanced Unlicensed Assistant
  - Certified Phlebotomist

Cross-Sector Pathways:
- Patient Care Technician

Education: HS
Work Experience: OJT
Salary: <$30,000

PATIENT CARE TECHNICIAN

ENTRY-LEVEL

Work closely with patients, and in conjunction with nurses, provide basic care. Their duties include taking vital signs, collecting specimens, performing catheterization and assisting patients with eating, personal hygiene and grooming. They also take notes and make assessments on their care.

Skills & Knowledge:
1. Basic diagnostic skills
2. Manual dexterity
3. Customer service
4. Verbal & written skills
5. Computer skills

Sector Pathways:
- Certified/Registered Medical Assistant
  - Advanced Unlicensed Assistant
  - Certified Nursing Assistant/Aid
  - Certified Pharmacy Technician
  - Certified Phlebotomist
  - Emergency Medical Technician
  - Licensed Practical Nurse
  - Medical Billing/Coding
  - Registered Nurse (RN)

Education: CV (Certified Patient Care Technician)
Work Experience: 0-2
Other Credentials: CPR
Salary: $25,000-30,000

CERTIFIED/REGISTERED MEDICAL ASSISTANT

ENTRY-LEVEL

Perform administrative and certain clinical duties under the direction of a physician. Administrative duties may include scheduling appointments, maintaining medical records; billing, and coding information for insurance purposes. Clinical duties may include taking and recording vital signs and medical histories, preparing patients for examination, drawing blood, and administering medications as directed by physician.

Skills & Knowledge:
1. Diagnostic skills
2. Customer service
3. Clerical skills
4. Computer skills
5. Verbal & written communication

Sector Pathways:
- Patient Care Technician
  - Advanced Unlicensed Assistant
  - Certified Nursing Assistant/Aid
  - Certified Pharmacy Technician
  - Certified Phlebotomist
  - Emergency Medical Technician
  - Licensed Practical Nurse
  - Medical Billing/Coding

Education: CV (Medical Assistant certification)
Work Experience: 0-2
Other Credentials: CPR
Salary: $30,000-40,000

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
### Advanced Unlicensed Assistant

- **Education:** CV (AUA certification)
- **Work Experience:** 0-2
- **Other Credentials:** As necessary
- **Salary:** $25,000-35,000

An Advanced Unlicensed Assistant (AUA) builds upon job skills traditionally performed by nursing assistants. The AUA is trained to perform additional technical skills and works in acute care settings under the supervision of a Registered Nurse or Licensed Practical Nurse.

**Skills & Knowledge:**
1. Diagnostic Skills
2. Verbal & written communication
3. Customer service
4. Computer skills
5. Manual dexterity/physical endurance

**Sector Pathways:**
- Certified/Registered Medical Assistant: +
- Patient Care Technician: +
- Certified Nursing Assistant/Aid: +
- Certified Pharmacy Technician: +
- Certified Phlebotomist: +

### Certified Nursing Assistant/Aid

- **Education:** CV (CNA credential)
- **Work Experience:** 0-2
- **Other Credentials:** As necessary
- **Salary:** <$30,000

Helps patients or clients with healthcare needs under the supervision of a Registered Nurse (RN) or a Licensed Practical Nurse (LPN). Takes vital signs and gathers other patient data, administers basic care, and tends to the hygiene needs of patients. Has more authority in patient treatment than a Medical Assistant.

**Skills & Knowledge:**
1. Diagnostic Skills
2. Verbal & written communication
3. Customer service
4. Computer skills
5. Manual dexterity/physical endurance

**Sector Pathways:**
- Certified/Registered Medical Assistant: +
- Advanced Unlicensed Assistant: +
- Patien Care Technician: +
- Certified Nursing Assistant/Aid: +
- Certified Pharmacy Technician: +
- Certified Phlebotomist: +
- Emergency Medical Technician: +
- Licensed Practical Nurse: +
- Medical Billing/Coding: +
- Registered Nurse (RN): +

### Certified Pharmacy Technician

- **Education:** CV (Certified Pharmacy Technician [CPhT])
- **Work Experience:** 0-2
- **Salary:** $30,000-35,000

Dispensary agent who acts as an assistant to licensed pharmacists to ensure processes occur as needed. Duties include compiling, double-checking, and labeling medications. They are also responsible for answering customer questions about medications and dosage, as well as performing clerical duties such as handling cash registers and keeping the work area tidy.

**Skills & Knowledge:**
1. Verbal & written communication
2. Customer service
3. Computer skills
4. Attention to detail
5. Clerical & organizational skills

**Sector Pathways:**
- Certified/Registered Medical Assistant: +
- Advanced Unlicensed Assistant: +
- Patient Care Technician: +
- Certified Nursing Assistant/Aid: +
- Certified Pharmacy Technician: +
- Certified Phlebotomist: +
- Emergency Medical Technician: +
- Licensed Practical Nurse: +
- Medical Billing/Coding: +
- Registered Nurse (RN): +
- Medical Billing/Coding: +

### Certified Phlebotomist

- **Education:** CV (Certified Phlebotomy Technician [CPT])
- **Work Experience:** 0-2
- **Salary:** $25,000-35,000

Medical professionals who work in a variety of settings collecting blood. Other duties of the CPT depend upon where he or she works. CPTs may be responsible for conducting patient interviews, checking vital signs and transporting the blood samples to a laboratory for testing purposes.

**Skills & Knowledge:**
1. Verbal & written communication
2. Customer service
3. Manual dexterity
4. Computers & technical machinery
5. Attention to detail

**Sector Pathways:**
- Certified/Registered Medical Assistant: +
- Advanced Unlicensed Assistant: +
- Patient Care Technician: +
- Certified Nursing Assistant/Aid: +
- Certified Pharmacy Technician: +
- Patient Care Technician: +
- Emergency Medical Technician: +
- Licensed Practical Nurse: +
- Medical Billing/Coding: +
- Registered Nurse (RN): +
- Medical Billing/Coding: +
- Registered Nurse (RN): +
EMERGENCY MEDICAL TECHNICIAN (EMT) [MID-LEVEL]

Education: CV ( Proper EMT certification)  Work Experience: 1+  Other Credentials: CPR  Salary: $30,000-35,000

Health care professionals working under the supervision of registered nurses and doctors. The main duties of LPNs are to assess, plan, implement, and evaluate care for patients. They provide care to patients at a very personal level and have direct contact with patients on a daily basis. Specific duties vary according to employment setting (hospital, clinic, and home health, etc.).

1. High pressure work
2. Attention to detail
3. Verbal and written communication
4. Customer service
5. Manual dexterity/physical endurance

Sector Pathways:
- Licensed Practical Nurse (LPN)
- Medical Billing/Coding
- Registered Nurse (RN)

LICENSED PRACTICAL NURSE (LPN) [MID-LEVEL]

Education: CV (LPN license)  Work Experience: 1+  Other Credentials: CPR  Salary: $30,000-35,000

1. Diagnostic/medical terminology
2. Attention to detail
3. Manual dexterity/physical endurance
4. Verbal and written communication
5. Customer service

Sector Pathways:
- Emergency Medical Technician
- Medical Billing/Coding
- Registered Nurse (RN)

MEDICAL BILLING/CODING [MID-LEVEL]

Education: CV (Registered Health Information Technician)  Work Experience: 1-3  Other Credentials: Certified Professional Coder  Salary: $35,000-45,000

1. Computers and billing/coding software
2. Medical terminology
3. Attention to detail/organization
4. Verbal and written communication
5. Customer service

Sector Pathways:
- Emergency Medical Technician
- Licensed Practical Nurse (LPN)

REGISTERED NURSE [MID-LEVEL]

Education: A (Associate in Nursing)  Work Experience: 1+  Other Credentials: RN (NCLEX) license  Salary: $40,000-45,000

1. Diagnostics/medical terminology
2. Patient care
3. Attention to detail
4. Problem solving
5. Verbal and written communication

Sector Pathways:
- Bachelor of Science in Nursing
- Charge Nurse

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber  |  December 2016
Assess patient health problems and needs, develop and implement nursing care plans, and maintain medical records. Administer nursing care to ill, injured, convalescent, or disabled patients. May advise patients on health maintenance and disease prevention or provide case management. Greater variety of job options and settings than RN with Associate degree.

**Skills & Knowledge:**
1. Diagnostics/medical terminology
2. Patient care
3. Attention to detail
4. Problem solving
5. Verbal & written communication

**Sector Pathways:**
- Charge Nurse: 
- B-M

---

Responsible for overseeing a specific nursing department within a healthcare facility for their assigned shift. Individuals in this role perform such duties as delegating nursing assignments, preparing schedules, overseeing admissions and discharges, and monitoring and ordering medicines and supplies. In addition to these managerial tasks, charge nurses also may carry a patient load depending on where they work and their shift.

**Skills & Knowledge:**
1. Diagnostics/medical terminology
2. Managerial & leadership skills
3. Patient care
4. Verbal & written communication
5. Problem solving
Front desk and customer service staff accommodate hotel, motel, and resort patrons by registering and assigning rooms to guests, issuing room keys or cards, transmitting and receiving messages, keeping records of occupied rooms and guests' accounts, making and confirming reservations, and presenting statements to and collecting payments from departing guests.

**Skills & Knowledge:**
1. Customer service
2. Interpersonal skills
3. Clerical skills
4. Computer skills
5. Conflict resolution

**Sector Pathways:**
- Front Desk Supervisor
- Cross-Sector Pathways: Office Support (Manufacturing), Patient Representative/Clerk/Receptionist (Healthcare), Customer Service (Professional Services, IT)

---

Front desk supervisors ensure efficient desk operations and guest satisfaction by providing supervision and management to front desk staff. The position requires an ability to problem solve and provide resolution to difficult customer service issues, proficient use of the hotel property management system (PMS), and the flexibility to fill desk shifts that become vacant with short notice.

**Skills & Knowledge:**
1. Customer service
2. Supervision/management
3. Interpersonal & professionalism
4. Organization & prioritization
5. Problem solving/conflict resolution

**Sector Pathways:**
- Front Office Manager
- Sales Manager

---

Front office managers directly supervise all front office personnel, including front desk and support personnel, and ensure proper completion of all front office duties. They direct and coordinate the activities of the front desk, reservations, and guest services. They also prepare monthly reports and budgets.

**Skills & Knowledge:**
1. Supervision/management
2. Problem solving/conflict resolution
3. Organization & prioritization
4. Customer service
5. Computer skills

**Sector Pathways:**
- Sales Manager
- General Manager

---

Sales managers are responsible for bringing in guests and making the hotel or resort money. They may work with general managers or owners to plan sales promotions, set sales goals, and train staff. These professionals not only seek out business with individual guests but also typically meet with larger groups. They also sell other services and amenities provided by the hotel or resort.

**Skills & Knowledge:**
1. Sales & recruitment
2. Interpersonal skills
3. Supervision/management
4. Customer service
5. Strategic planning/thinking

**Sector Pathways:**
- Front Office Manager
- General Manager

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
**GENERAL MANAGER**  **[SENIOR-LEVEL]**

- **Education:** B-M (Business, Hospitality, or related)
- **Work Experience:** 5-10
- **Salary:** $70,000-80,000

General managers lead, supervise, and direct the operations and financial activities of the hotel or resort. They help create and implement the hotel’s culture and standards for staff and guests. The manager is ultimately responsible for ensuring customer satisfaction through consistent delivery of both quality and service. They must be good at accounting, able to multitask, must be willing work a flexible schedule.

**Skills & Knowledge:**
1. Supervision/management
2. Sales & recruitment
3. Strategic planning & thinking
4. Problem solving/conflict resolution
5. Customer service

**Sector Pathways:**
- Regional Manager:

---

**REGIONAL MANAGER**  **[SENIOR-LEVEL]**

- **Education:** B-M
- **Work Experience:** 10+
- **Salary:** $80,000-90,000

Regional managers supervise operations at multiple hotels within a region, providing guidance and support to General Managers within that region. The regional manager monitors performance at regional hotels, develops regional sales partnerships, and guides overall strategy and direction for a region.

**Skills & Knowledge:**
1. Supervision/management
2. Sales & recruitment
3. Strategic planning & thinking
4. Problem solving/conflict resolution
5. Customer service
CUSTOMER SERVICE – TECHNICAL [ENTRY-LEVEL]

A customer service representative acts as the voice and face of the company when interacting with customers. Their duties include answering customer questions, resolving individual problems, handling complaints, and handling other transactions. They must have an in-depth knowledge of all the company’s products and services; they also must be up to date on changes or updates within the company.

Skills & Knowledge:
1. Customer service
2. Interpersonal Skills
3. Conflict resolution
4. Troubleshooting and repair
5. Problem solving

Sector Pathways:
- Sales Representative: +
- Help Desk Technician: +

Cross-Sector Pathways:
- Customer Service (Professional Services, Hospitality)
- Patient Representative/Clerk/Receptionist (Healthcare)

HELP DESK TECHNICIAN [ENTRY-LEVEL]

Helpdesk technicians assist customers with computer problems. Their duties vary by company, but general responsibilities include providing technical and product support, assisting customers and clients with a variety of setups, diagnosing and solving technical problems, and providing consultations. They respond to telephone calls, email and personnel requests for technical support.

Skills & Knowledge:
1. Customer service
2. Basic tech knowledge
3. Troubleshooting & repair
4. Problem solving
5. Systems analysis

Sector Pathways:
- IT Technician
- Computer Operator
- Computer User Support Specialist:
  +

IT TECHNICIAN [ENTRY-LEVEL]

IT technicians diagnose computer problems, monitor computer processing systems, install software and perform tests on computer equipment and programs. Technicians may also set up computer equipment, schedule maintenance and teach clients to use programs. Other job duties can include minor repairs and computer parts ordering.

Skills & Knowledge:
1. Hardware & software knowledge
2. Programming
3. Troubleshooting & repair
4. Problem solving
5. Customer service

Sector Pathways:
- Help Desk Technician
- Computer Operator
- Computer User Support Specialist:
  +

COMPUTER OPERATOR [ENTRY-LEVEL]

Computer operators monitor and control electronic computer and peripheral electronic data processing equipment to process business, scientific, engineering, and other data according to operating instructions and in response to operating and error messages. They may enter commands at a computer terminal and set controls on computer and peripheral devices.

Skills & Knowledge:
1. Hardware & software knowledge
2. Programming
3. Troubleshooting & repair
4. Problem solving
5. Customer service

Sector Pathways:
- IT Technician
- Computer User Support Specialist:
  +
- Software Developer:
  +
- Database Administrator:
  +
SALES REPRESENTATIVE [ENTRY-LEVEL]

Education: CV-A (IT or related)  Work Experience: 0-2  Salary: $60,000-70,000

Sales representatives sell IT and computer products and services for a company, either directly to consumers or to other businesses. These representatives often have goals which must be reached, and commission may be offered based on sales performance. In some positions, they may either be provided with lists of clients or receive calls from interested customers. Research may also be required in order to discover new clients.

Skills & Knowledge:
1. Interpersonal skills
2. Deadline oriented
3. Balance multiple projects
4. Teamwork
5. Strategic thinking

Sector Pathways:
- Computer User Support Specialist: A-B

Cross-Sector Pathways:
- Sales Associate (TDL)

COMPUTER USER SUPPORT SPECIALIST [MID-LEVEL]

Education: A-B (IT or related)  Work Experience: 0-2  Other Credentials: CompTIA A+/Linux+  Salary: $60,000-70,000

Computer user support specialists provide specialized technical assistance to computer users, answering questions or resolving problems for clients in person, or via telephone or electronically. They may also provide assistance concerning the use of computer hardware and software, including printing, installation, word processing, electronic mail, and operating systems.

Skills & Knowledge:
1. Hardware & software knowledge
2. Programming
3. Customer service
4. Troubleshooting & repair
5. Problem solving

Sector Pathways:
- Software Developer
- Database administrator

DATABASE ADMINISTRATOR [MID-LEVEL]

Education: B (Computer Science or related)  Work Experience: 2-5  Salary: $75,000-85,000

A database administrator (DBA) ensures that the software used to manage a database is properly maintained to allow rapid access when needed. They will typically work to ensure data security, coordinating with an IT security professional or team in larger companies to help maintain the integrity of sensitive business data, and maintain the database server’s efficiency.

Skills & Knowledge:
1. Database systems (SQL, SAP)
2. Problem solving
3. Customer service
4. Organization
5. Design

Sector Pathways:
- Software Developer
- Information Security Analyst
- Network Administrator: A-B

SOFTWARE DEVELOPER [MID-LEVEL]

Education: B (Computer Science or Software Engineering)  Work Experience: 2-5  Salary: $70,000-80,000

Software developers design and modify software applications to adhere to designs supporting internal business requirements or external customers. They standardize the quality assurance procedure for software, oversee testing, and develop fixes.

Skills & Knowledge:
1. Necessary programming languages
2. Problem solving skills
3. Creativity & curiosity
4. Web applications knowledge
5. Teamwork

Sector Pathways:
- Database Administrator
- Computer Programmer: A-B
INFORMATION TECHNOLOGY

NETWORK ADMINISTRATOR [MID-LEVEL]  ➡️

Education: B (Computer Science or Software Engineering)  ➡️ Work Experience: 3-5  ➡️ Salary: $70,000-80,000

Network administrators design, plan and implement the organization’s network. They evaluate and modify hardware, systems software, and application software to improve network functioning. Additionally, network administrators carry out security procedures and document the network systems and back-ups.

Skills & Knowledge:
1. Computer networking
2. Diverse operating systems
3. LAN & WAN
4. TCP/IP
5. Network security

Sector Pathways:
➡️ Information Security Analyst
➡️ Computer & Information Systems Manager:

WEB DEVELOPER [MID-LEVEL]  ➡️

Education: B (Computer Science or related)  ➡️ Work Experience: 3-5  ➡️ Salary: $70,000-80,000

Web developers build the backbone of websites. Their tasks include writing code to generate web pages, access databases and business logic servers; working with designers and content producers; testing and documenting software for websites; and writing modifying and debugging software for websites. Since web developers typically build websites from the ground up, they need to know relevant programming languages and hardware.

Skills & Knowledge:
1. Design
2. Web applications
3. Creativity & curiosity
4. Verbal & written communication
5. Teamwork

Sector Pathways:
➡️ Computer Programmer
➡️ Computer & Information Systems Manager:

COMPUTER PROGRAMMER [MID-LEVEL]  ➡️

Education: B (Computer Science or related)  ➡️ Work Experience: 3-5 (additional certifications)  ➡️ Salary: $70,000-80,000

Programmers review, analyze, and modify programming systems including encoding, testing, debugging and documenting programs. Programmers convert symbolic program specifications into instructions using programming languages, usually tied to specified software.

Skills & Knowledge:
1. Analytical problem solving
2. Math & computer science
3. Teamwork
4. Database technology
5. Verbal & written communication

Sector Pathways:
➡️ Web Developer
➡️ Computer and Information Systems Manager:

INFORMATION SECURITY ANALYST [MID-LEVEL]  ➡️

Education: B (IT or Network Security)  ➡️ Work Experience: 5+  ➡️ Salary: $75,000-85,000

Information security analysts are responsible for providing security solutions for their companies. Their main duties include doing research, collecting data, developing secure strategies and maximizing productivity. They also are in charge of implementing security principles while following strict privacy policies. They conduct assessments of enterprise environments and frequently monitor logs and computer traffic.

Skills & Knowledge:
1. Problem Solving
2. New and emerging tech
3. Computer networking
4. Leadership
5. Customer relations

Sector Pathways:
➡️ Network Administrator
➡️ Computer & Information Systems Manager:

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
Computer and information systems managers—often called information technology (IT) managers or IT project managers—plan, coordinate, and direct computer-related activities in an organization. They help determine the information technology goals of an organization and are responsible for implementing computer systems to meet those goals. They also supervise all user services positions (such as helpdesk technicians).

**Skills & Knowledge:**
1. Administration & management
2. Verbal and written communication
3. Team work
4. Problem solving
5. Critical thinking
### Warehouse Worker  [Entry-Level]

- **Education:** HS
- **Work Experience:** OJT
- **Salary:** $30,000-35,000

Warehouse workers move materials around, in, and out of a warehouse.

**Skills & Knowledge:**
1. Basic mechanical knowledge
2. Heavy lifting
3. Sorting
4. ERP Systems
5. Safety Training

**Sector Pathways:**
- Shipping & Receiving Clerk
- Forklift Driver

**Cross-Sector Pathways:**
- Warehouse Worker (Aerospace)
- General Laborers (TDL, Energy)

### Forklift Driver  [Entry-Level]

- **Education:** HS
- **Work Experience:** NONE
- **Salary:** $30,000-35,000

Forklift drivers move materials around, in, and out of a warehouse using a forklift.

**Skills & Knowledge:**
1. Manual dexterity
2. Machinery operation
3. Heavy lifting
4. Sorting
5. Computer skills

**Sector Pathways:**
- Multi-Skilled Warehouse Worker

### General Production Worker  [Entry-Level]

- **Education:** HS
- **Work Experience:** OJT
- **Salary:** $35,000-40,000

Production workers start, operate, tend, stop, and clean machines. They also assemble finished product and inspect that product to ensure high quality.

**Skills & Knowledge:**
1. Manual dexterity
2. Heavy lifting
3. Problem solving
4. Industry knowledge
5. Teamwork

**Sector Pathways:**
- Machine Operator

### Assembly Operators  [Entry-Level]

- **Education:** HS
- **Work Experience:** OJT
- **Salary:** $30,000-35,000

Assembly operators are responsible for assembling an entire product or part of a product. They may also perform preventative and reparative maintenance.

**Skills & Knowledge:**
1. Monitoring
2. Quality Control
3. Verbal Communication
4. Teamwork

**Sector Pathways:**
- General Production Worker
- Machine Operator
- Quality Assurance
- Production Supervisor

**Cross-Sector Pathways:**
- Assembly (Aerospace, Energy)
MACHINE OPERATOR [ENTRY-LEVEL]

Machine operators set-up, start, operate, and tend to more than one type of cutting or forming machine tool or robot. Machine operators work as part of the assembly line in a production facility.

Skills & Knowledge:
1. Manual dexterity
2. Problem solving
3. Operate & repair machinery
4. Blueprints & technical drawings
5. Communication

Education: HS
Work Experience: 1 + OJT
Salary: $40,000-50,000

Cross-Sector Pathways:
- CNC Machine Operator:
- Fabricator (Aerospace)

Sector Pathways:
- Warehouse Worker
- Office/Administrative Support
- Scheduler/Production Planner:
- CV

Shipping & Receiving Clerk [ENTRY-LEVEL]

Shipping & receiving clerks verify and maintain records on incoming and outgoing shipments. They also prepare items for shipment. Their duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.

Skills & Knowledge:
1. Customer service
2. Attention to detail
3. Inventory control
4. Data entry
5. Problem solving

Education: HS
Work Experience: OJT
Salary: $30,000-40,000

Sector Pathways:
- Warehouse Worker
- Office/Administrative Support
- Scheduler/Production Planner:
- CV

Cross-Sector Pathways:
- Accounting Clerk (Professional Services)
- Shipping & Receiving Clerk (TDL, Aerospace)

Welder [ENTRY-LEVEL]

Welders use handheld equipment to join metal parts. They also fill holes, indentation, or seams of metal products.

Skills & Knowledge:
1. Welding in various positions
2. Hand-eye coordination
3. Physical dexterity
4. Blueprints & technical drawings
5. Troubleshooting

Education: CV (Welding credential)
Work Experience: 0-2
Salary: $40,000-45,000

Sector Pathways:
- Quality Assurance:
- CV

Cross-Sector Pathways:
- Welder, Brazer, Cutter, Solderer (Energy, Aerospace)

Office/Administrative Support [ENTRY-LEVEL]

Office and administrative support staff perform general clerical duties in support of manufacturing operations, which may include a combination of answering telephones, bookkeeping, typing or word processing, stenography, office machine operation, and filing.

Skills & Knowledge:
1. Verbal and written communication
2. Time management
3. Customer service
4. Computer skills
5. Clerical skills

Education: HS
Work Experience: NONE
Salary: $35,000-40,000

Sector Pathways:
- Shipping & Receiving Clerk:
- Scheduler/Production Planner:
- CV

Cross-Sector Pathways:
- Customer Service (Professional Services, IT)
- Front Desk/Customer Service (Hospitality)
- Warehouse Worker
- Office/Administrative Support

Shipping & Receiving Clerk [ENTRY-LEVEL]

Shipping & receiving clerks verify and maintain records on incoming and outgoing shipments. They also prepare items for shipment. Their duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.

Skills & Knowledge:
1. Customer service
2. Attention to detail
3. Inventory control
4. Data entry
5. Problem solving

Education: HS
Work Experience: OJT
Salary: $30,000-40,000

Sector Pathways:
- Warehouse Worker
- Office/Administrative Support
- Scheduler/Production Planner:
- CV

Cross-Sector Pathways:
- Accounting Clerk (Professional Services)
- Shipping & Receiving Clerk (TDL, Aerospace)
**PURCHASING DEPARTMENT**  
**ENTRY-LEVEL**

Purchasing department staff manage customer orders from demand through delivery. This requires coordinating and tracking activities associated with customer order fulfillment. These activities involve procuring goods and services such as raw materials, equipment, tools, parts, supplies and services, creating job/work orders, shop floor scheduling and performance tracking.

**Skills & Knowledge:**
1. Contract management & negotiation
2. Verbal & written communication
3. Interpersonal skills
4. Problem solving

**Sector Pathways:**
- Technical Customer Service Representative
- Planning Supervisor

**Cross-Sector Pathways:**
- Fabricator (Aerospace)

---

**FABRICATOR**  
**ENTRY-LEVEL**

Fabricators join metal pieces together to create a product or to use as pieces in other products. They must maintain the quality of the material or product, as well as workplace safety by following standard processes and procedures.

**Skills & Knowledge:**
1. Manual dexterity
2. Problem solving
3. Operate & repair machinery
4. Blueprints & technical drawings
5. Communication

**Sector Pathways:**
- CNC Machine Operator
- Purchasing Department

**Cross-Sector Pathways:**
- Fabricator (Aerospace)

---

**TECHNICAL CUSTOMER SERVICE REPRESENTATIVE**  
**ENTRY-LEVEL**

Technical customer service representatives provide the best possible customer satisfaction to the organization’s customers by addressing and resolving customer inquiries and problems, in accordance with company policies and procedures, and based on a technical knowledge of manufacturing processes and techniques.

**Skills & Knowledge:**
1. Customer service
2. Verbal & written communication
3. Interpersonal skills
4. Problem solving

**Sector Pathways:**
- Technical Customer Service Representative

---

**Purchasing Department**  
**ENTRY-LEVEL**

Purchasing department staff manage customer orders from demand through delivery. This requires coordinating and tracking activities associated with customer order fulfillment. These activities involve procuring goods and services such as raw materials, equipment, tools, parts, supplies and services, creating job/work orders, shop floor scheduling and performance tracking.

**Skills & Knowledge:**
1. Contract management & negotiation
2. Verbal & written communication
3. Interpersonal skills
4. Problem solving
5. Mathematics
6. Computer skills

**Sector Pathways:**
- Technical Customer Service Representative
- Planning Supervisor

---

**CNC MACHINE OPERATOR**  
**MID-LEVEL**

CNC machine operators (or machinists) set-up, operate, and monitor computer-controlled machines or robots to work on metal or plastic work pieces. CNC machinists are responsible for the operation and maintenance of the machine, from starting it to unloading the finished product. CNC machinists are also responsible for troubleshooting and maintenance.

**Skills & Knowledge:**
1. Machinery operation
2. Strong math knowledge
3. Blueprints & technical drawings
4. Precision measuring tools

**Sector Pathways:**
- Production Supervisor
- CNC Machine Programmer

---

**Fabricator**  
**ENTRY-LEVEL**

**Education:** CV  
**Work Experience:** 0-2  
**Salary:** $40,000-45,000

**Technical Customer Service Representative**  
**ENTRY-LEVEL**

**Education:** HS  
**Work Experience:** NONE  
**Salary:** $40,000-45,000

**Purchasing Department**  
**ENTRY-LEVEL**

**Education:** HS  
**Work Experience:** NONE  
**Salary:** $40,000-50,000

**CNC Machine Operator**  
**MID-LEVEL**

**Education:** CV  
**Work Experience:** 0-2  
**Salary:** $50,000-55,000

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber  |  December 2016
PRODUCTION SUPERVISOR [MID-LEVEL]

Production supervisors are responsible for seeing that materials and supplies are stocked and that all the equipment is up to date, safe, and in proper working order. Most of the time, production supervisors will communicate directly with their workers and make sure that all deadlines are being met.

**Education:**
- A (Manufacturing technology or related)

**Work Experience:**
- 2-5

**Salary:**
- $60,000-70,000

**Skills & Knowledge:**
1. Management & leadership
2. Verbal & written communication
3. Analytical problem solving
4. Computer skills
5. Six Sigma/Lean

**Sector Pathways:**
- Manager:
  - Production Supervisor
  - Planning Supervisor

**Cross-Sector Pathways:**
- Production Supervisor (Aerospace)
- Quality Control (Aerospace)
- Non Destructive Inspector (Aerospace)

---

QUALITY ASSURANCE (QA) [MID-LEVEL]

Quality assurance (QA) staff ensures consistent quality of production by developing and enforcing good automated manufacturing practice (GAMP) systems, validating processes, and providing documentation. They also ensure an organization’s management system requirements have been properly defined.

**Education:**
- A (Manufacturing technology or related)

**Work Experience:**
- 2+

**Salary:**
- $60,000-70,000

**Skills & Knowledge:**
1. Attention to detail
2. Measurement systems
3. Verbal & written communication
4. Problem solving
5. Mathematics, statistics

**Sector Pathways:**
- Production Supervisor
  - Manager:
  - Production Supervisor

**Cross-Sector Pathways:**
- Quality Control (Aerospace)
- Non Destructive Inspector (Aerospace)

---

SCHEDULER/PRODUCTION PLANNER [MID-LEVEL]

Schedulers or production planners schedule and revise shipment plans to ensure efficient distribution of products to satisfy customers. They analyze inventory levels, production speed and product demand to determine reorder levels which will ensure product availability and minimize inventory.

**Education:**
- HS-CV

**Work Experience:**
- 1 + OJT

**Salary:**
- $50,000-55,000

**Skills & Knowledge:**
1. Process improvement
2. Computer skills
3. Verbal & written communication
4. Inventory reporting
5. Data analysis

**Sector Pathways:**
- Production Supervisor:
  - Planning Supervisor:

---

CNC MACHINE PROGRAMMER [MID-LEVEL]

CNC machine programmers program the machines that cut, shape, and finish materials such as metals, plastics, or wood into usable components. The CNC programmer must study the drawings and blueprints of the components that need to be manufactured and determine which machines will be required, what they will need to do, and the order in which the work needs to be done.

**Education:**
- CV-A (CNC certification)

**Work Experience:**
- 2 + OJT

**Salary:**
- $55,000-65,000

**Skills & Knowledge:**
1. Machining software (Solid Modelling, CAM)
2. Machinery operation
3. Blueprints & technical drawings
4. Problem solving
5. Mathematics knowledge

**Sector Pathways:**
- Mechanical Engineer

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
### MANUFACTURING

#### MANAGER [MID-LEVEL]
- **Education:** B (Business, Operations, or Engineering)
- **Work Experience:** 5+
- **Salary:** $80,000-90,000

Managers are executives in a manufacturing company that produces consumer or commercial goods. They work in the production plant itself, ensuring goods are efficiently made and meet the company’s standards. Their normal work environment frequently shifts from offices to the manufacturing floor to warehouses. This manager also helps diagnose any customer concerns and implement new products and designs from the company’s development department(s).

#### MECHANICAL ENGINEER [MID-LEVEL]
- **Education:** B (Mechanical Engineering or related)
- **Work Experience:** NONE
- **Salary:** $70,000-75,000

Mechanical engineers manage the design, construction and testing of any manufacturing product or machine that has moving parts. They are experts on the manufacturing process and the individual machines that make it up. Mechanical Engineers decide which machines are the most efficient for a specific production system, and determine the sequence of the machines.

#### PLANNING SUPERVISOR [MID-LEVEL]
- **Education:** A (Supply Chain Management or related)
- **Work Experience:** 5+
- **Salary:** $75,000-80,000

Planning supervisors provide technical direction in the scheduling/planning department according to company policies and corporate business plans, through proper selection and training of staff. They implement strategies to reduce cost of moving goods and improve existing production processes.

#### PRODUCTION MANAGER [SENIOR-LEVEL]
- **Education:** B-M (Business, Operations, or related)
- **Work Experience:** 7+
- **Salary:** $80,000-90,000

Production managers are responsible for managing and directing production activities within an industrial facility or organization. They coordinate the production of goods, ensure all machines are repaired and running smoothly, and manage workers on the production line.
**ENGINEERING MANAGER [SENIOR-LEVEL]**

- **Education:** M (Engineering or related)
- **Work Experience:** 7+
- **Salary:** $85,000-95,000

Engineering managers are responsible for leading and supervising a team of engineers as they develop, test, modify, and create solutions to technical problems.

**Skills & Knowledge:**
1. Analytical problem solving
2. Verbal & written communication
3. Supervision & leadership
4. Technical/engineering capacity

**Sector Pathways:**
- Production Manager
- General Manager

**Cross-Sector Pathways:**
- Production Manager (Aerospace)
- Engineering Supervisor (Aerospace)
- General Manager (Energy)

---

**GENERAL/PLANT MANAGER [SENIOR-LEVEL]**

- **Education:** M (Business, Operations, or related)
- **Work Experience:** 10+
- **Salary:** $90,000-100,000

General or plant managers are responsible for managing a single unit, different sectors, a manufacturing plant, or multiple units of a manufacturing company or organization. They hire employees, prepare reports, set budgets, and ensure the overall effective and efficient running of their plant/units.

**Skills & Knowledge:**
1. Strategic thinking & planning
2. Analytical problem solving
3. Verbal & written communication
4. Management & leadership

**Cross-Sector Pathways:**
- General Manager (Aerospace, TDL, Energy)
CUSTOMER SERVICE – FINANCIAL  [ENTRY-LEVEL]

Education: HS  
Work Experience: NONE  
Salary: $35,000-40,000

Financial customer service employees interact with customers to provide information in response to inquiries about products and services and to handle and resolve complaints.

Skills & Knowledge:
1. Customer service
2. Verbal & written communication
3. Attention to detail
4. Problem solving
5. Clerical skills

Sector Pathways:
- Accounting Clerk
- Collector

Cross-Sector Pathways:
- Customer Service (Healthcare, IT, Hospitality)
- Office/Administrative Support (Manufacturing)

ACCOUNTING CLERK  [ENTRY-LEVEL]

Education: HS  
Work Experience: OJT  
Salary: $35,000-40,000

Accounting clerks compute, classify, and record numerical data to keep financial records complete. They perform any combination of routine calculating, posting, and verifying duties to obtain primary financial data for use in maintaining accounting records. They may also check the accuracy of figures, calculations, and postings pertaining to business transactions recorded by other workers.

Skills & Knowledge:
1. Accounting software
2. Computer skills
3. Attention to detail
4. Organizational skills
5. Teamwork

Sector Pathways:
- Collector
- Bookkeeper

Cross-Sector Pathways:
- Accounting Clerk
- Bookkeeper

COLLECTOR  [ENTRY-LEVEL]

Education: HS  
Work Experience: OJT  
Salary: $30,000-35,000

Collectors are responsible for acquiring reparations for debts owed to a company or individual. They receive and post payments to accounts, monitor overdue accounts, and collect debt. They also maintain files on the financial status of customer accounts.

Skills & Knowledge:
1. Accounting software
2. Computer skills
3. Attention to detail
4. Organizational skills
5. Autonomous work

Sector Pathways:
- Accounting Clerk
- Bookkeeper

Cross-Sector Pathways:
- Shipping & Receiving Clerk

BOOKKEEPER  [MID-LEVEL]

Education: A (Accounting or Business Administration)  
Work Experience: 1-2  
Salary: $45,000-50,000

Bookkeepers record financial transactions and create financial reports from that information. The creation of financial transactions includes posting information to accounting journals or accounting software from source documents such as invoices to customers, cash receipts, and supplier invoices. The bookkeeper also reconciles accounts to ensure their accuracy.

Skills & Knowledge:
1. Accounting practices & software
2. Computer skills
3. Attention to detail
4. Problem solving
5. Autonomous work

Sector Pathways:
- Junior Accountant
- Full Charge Bookkeeper
JUNIOR ACCOUNTANT [MID-LEVEL]

- **Education:** B (Accounting)
- **Work Experience:** 1-2
- **Salary:** $45,000-55,000
- **Skills & Knowledge:**
  1. Accounting principles
  2. Computer skills & accounting software
  3. Advanced math knowledge
  4. Analytical problem solving
  5. Attention to detail
- **Sector Pathways:**
  - Full Charge Bookkeeper
  - Staff Accountant/Auditor

Junior accountants analyze financial information and prepare financial reports to determine or maintain record of assets, liabilities, profit and loss, tax liability, or other financial activities within an organization. They also have greater responsibility over financial records than accounting clerks or bookkeepers.

FULL CHARGE BOOKKEEPER [MID-LEVEL]

- **Education:** B (Accounting)
- **Work Experience:** 2+
- **Salary:** $50,000-55,000
- **Skills & Knowledge:**
  1. Accounting principles
  2. Computer skills & accounting software
  3. Advanced math knowledge
  4. Analytical problem solving
  5. Attention to detail
- **Sector Pathways:**
  - Junior Accountant
  - Staff Accountant/Auditor

Full charge bookkeepers are responsible for full-cycle accounting, which requires an ability to juggle several organizational tasks at once. Their responsibilities include managing all aspects of general ledger, accounts receivable, and accounts payable, as well as handling payroll information, credit card statements, and cash flow.

STAFF ACCOUNTANT/AUDITOR [MID-LEVEL]

- **Education:** B (Accounting)
- **Work Experience:** 3-5
- **Other Credentials:** Certified Public Accountant (CPA)
- **Salary:** $55,000-60,000
- **Skills & Knowledge:**
  1. Accounting principles
  2. Computer skills & accounting software
  3. Advanced math knowledge
  4. Analytical problem solving
  5. Attention to detail
- **Sector Pathways:**
  - Accounting Manager: B-M
  - Audit Manager: M
- **Cross-Sector Pathways:**
  - Business Analyst (Energy)
  - Analyst (TDL)

Staff accountants and auditors examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. They install or advise on systems of recording costs or other financial and budgetary data. They also have greater responsibility over maintaining quality and consistent financial records than junior accountants.

ACCOUNTING MANAGER [SENIOR-LEVEL]

- **Education:** B-M
- **Work Experience:** 5-7
- **Other Credentials:** Certified Public Accountant (CPA)
- **Salary:** $65,000-75,000
- **Skills & Knowledge:**
  1. Accounting principles
  2. Computer skills & accounting software
  3. Supervision/management
  4. Verbal & written communication
  5. Analytical problem solving
- **Sector Pathways:**
  - Audit Manager
  - Controller: M
- **Cross-Sector Pathways:**
  - Purchasing Manager (TDL)

Accounting managers are responsible for managing the accounting department. This role also serves as a consultant for other managers within the organization, advising them of current budgetary information and working with managers to create a fiscal strategy that aligns with the goals of the organization.
Audit managers are responsible for overseeing internal operating controls, processes and practices. They may also recommend changes and enhancements to existing policies and controls to make sure they are current, adequate, functional and utilized in accordance with standards established by the government and the company. Some audit managers will manage a team of junior auditors or accountants.

**Skills & Knowledge:**
1. Accounting principles
2. Computer skills & accounting software
3. Supervision/management
4. Verbal & written communication
5. Analytical problem solving

**Sector Pathways:**
- Accounting Manager
- Controller

**Cross-Sector Pathways:**
- Purchasing Manager (TDL)

---

Controllers are responsible for directing the accounting operations of the company, including the production of periodic financial reports, maintenance of an adequate system of accounting records, and producing a comprehensive set of controls and budgets designed to mitigate risk, enhance the accuracy of the company’s reported financial results, and ensure that reported results comply with generally accepted accounting principles or international financial reporting standards.

**Skills & Knowledge:**
1. Accounting principles
2. Computer skills & accounting software
3. Supervision/management
4. Verbal & written communication
5. Analytical problem solving

**Cross-Sector Pathways:**
- General/Operations Manager (Manufacturing, Aerospace, TDL, Hospitality, Energy)

---

**Education:**
- B-M (Accounting)
- M (Accounting, Business Administration, Finance)

**Work Experience:**
- 5-7 years
- 7-10 years

**Salary:**
- $70,000-75,000
- $80,000-90,000
**GENERAL LABORER/MATERIAL HANDLERS/TRUCK LOADERS**  [ENTRY-LEVEL]

- **Education:** HS
- **Work Experience:** NONE
- **Salary:** $30,000-40,000

General laborers manually move freight, stock, or other materials or perform other general labor in a shipping/receiving warehouse.

**Skills & Knowledge:**
1. Manual dexterity
2. Heavy lifting & moving
3. Sorting
4. Verbal communication

**Sector Pathways:**
- Shipping & Receiving Clerk: ⬆️
- CDL Driver: ⬆️
- Diesel Mechanic: ⬆️

**Cross-Sector Pathways:**
- General Laborer (Manufacturing, Aerospace, Energy)
- Warehouse Worker (Manufacturing, Aerospace)
- Helper/Finisher (Construction)

---

**SHIPPING & RECEIVING CLERK**  [ENTRY-LEVEL]

- **Education:** HS
- **Work Experience:** 0-2
- **Salary:** $35,000-40,000

Shipping & receiving clerks verify and maintain records on incoming and outgoing shipments and prepare items for shipment. Their duties include assembling, addressing, stamping, and shipping merchandise or material; receiving, unpacking, verifying and recording incoming merchandise or material; and arranging for the transportation of products.

**Skills & Knowledge:**
1. Attention to detail
2. Data entry
3. Problem solving
4. Customer service
5. Inventory control

**Sector Pathways:**
- Logistics Coordinator: ⬆️
- Shipping & Receiving Supervisor: ⬆️

**Cross-Sector Pathways:**
- Shipping & Receiving Clerk (Manufacturing, Aerospace)
- Accounting Clerk (Prof. Svcs.)

---

**CDL DRIVER**  [ENTRY-LEVEL]

- **Education:** CV (Commercial Driver's License [CDL])
- **Work Experience:** NONE
- **Salary:** $45,000-55,000

CDL drivers are responsible for transporting different types of goods from distribution centers to customer locations using a truck. They are also required to perform inspections before and after a trip, and unload cased products from the trailer to customer facilities. These drivers also follow appropriate safety procedures to transport dangerous cargo and maintain logs of vehicle repair status and working hours.

**Skills & Knowledge:**
1. Skilled driving & navigation
2. Attention to detail
3. Customer service
4. Heavy lifting & moving

**Sector Pathways:**
- Diesel Mechanic: ⬆️
- Driver Manager: ⬆️

**Cross-Sector Pathways:**
- Forklift Driver (Manufacturing)

---

**DIESEL MECHANIC**  [ENTRY-LEVEL]

- **Education:** CV
- **Work Experience:** NONE
- **Salary:** $40,000-50,000

Diesel mechanics inspect, repair, overhaul, and maintain trucks and other machines with a diesel engine.

**Skills & Knowledge:**
1. Mechanical & repair skills
2. Attention to detail
3. Problem solving
4. Troubleshooting
5. Customer Service

**Sector Pathways:**
- CDL Driver: ⬆️
- Front Line Supervisor: ⬆️

---

Developed by the Council for Adult and Experiential Learning (CAEL) in partnership with the Tulsa Regional Chamber | December 2016
## Logistics Coordinator [Mid-level]

- **Education:** A (Logistics or related)
- **Work Experience:** 1-2
- **Salary:** $40,000-$50,000

Logistics coordinators are responsible for facilitating and coordinating the receiving, storing, moving, and shipping of supplies, stock, and materials in a region, effectively managing the timely flow of order processing.

**Skills & Knowledge:**
1. Systems analysis
2. Organizing & prioritization
3. Problem solving
4. Computer skills
5. Verbal & written communication

**Sector Pathways:**
- Driver Manager:
- Front Line Supervisor:
- Analyst:

**Cross-Sector Pathways:**
Scheduler/Production Planner (Manufacturing)

## Driver Manager [Mid-level]

- **Education:** CV-A (Transportation or related)
- **Work Experience:** 1-2
- **Salaries:** CDL
- **Salary:** $50,000-$60,000

Driver managers are responsible for supervising and managing fleet driver staff performance and satisfaction. This includes achieving maximum fleet productivity and profitability by reaching weekly utilization goals and monitoring operating revenue and cost. They are also accountable for ensuring safe standards of operation are practiced while meeting all customer pickup and delivery requirements.

**Skills & Knowledge:**
1. Management/leadership
2. Driving & navigation knowledge
3. Planning, organizing, & prioritization
4. Verbal & written communication
5. Computer skills

**Sector Pathways:**
- Logistics Coordinator:
- Front Line Supervisor:
- Safety Coordinator:

## Sales Associate [Mid-level]

- **Education:** A-B (Business or related)
- **Work Experience:** 1-2
- **Salary:** $45,000-$55,000

Sales associates sell shipping services and solicit business from new and existing customers according to the existing business plan. They are responsible for networking and building relationships with buyers, as well as maintaining a detailed knowledge of industry standards.

**Skills & Knowledge:**
1. Sales & marketing skills
2. Interpersonal skills
3. Contract management & negotiation
4. Verbal & written communication
5. Computer skills

**Sector Pathways:**
- Logistics Coordinator:
- Front Line Supervisor:
- Analyst:

**Cross-Sector Pathways:**
Sales Representative (IT)

## Front Line Supervisor [Mid-level]

- **Education:** A (Logistics, Business, or related)
- **Work Experience:** 2-5
- **Salary:** $50,000-$60,000

Plans, organizes, coordinates, and supervises the operations of a single facility/warehouse responsible for the maintenance and repair of diesel vehicles, light and heavy trucks, and other heavy equipment. Responsible for all safety, quality, and compliance requirements.

**Skills & Knowledge:**
1. Management/leadership
2. Analytical problem solving skills
3. Verbal & written communication
4. Computer skills

**Sector Pathways:**
- Shipping & Receiving Supervisor
- Supply Chain Manager:
- Warehouse Manager:

**Cross-Sector Pathways:**
Planning Supervisor (Manufacturing)
Production Supervisor (Manufacturing)
Operations Supervisor (Aerospace)
Front Line Supervisor (Aerospace, Energy)
**SHIPPING & RECEIVING SUPERVISOR [MID-LEVEL]**

- **Education:** A (Logistics or related)
- **Work Experience:** 2+
- **Salary:** $50,000-55,000

Shipping & receiving supervisors coordinate activities of employees engaged in shipping and receiving of products by verifying and keeping records on incoming and outgoing shipments and preparing items for shipment. The supervisor oversees incoming and outgoing shipping activities to ensure accuracy, completeness, and condition of shipments.

**Skills & Knowledge:**
1. Supervision/leadership
2. Planning, organizing, and prioritization
3. Verbal & written communication
4. Computer skills
5. Systems analysis

**Sector Pathways:**
- Front Line Supervisor
- Safety Coordinator
- Supply Chain Manager: + A-B
- Warehouse Manager: + A-B

**Cross-Sector Pathways:**
- Planning Supervisor (Manufacturing)
- Operations Supervisor (Aerospace)

---

**SAFETY COORDINATOR [MID-LEVEL]**

- **Education:** A (Logistics or related)
- **Work Experience:** 2-5
- **Salary:** $55,000-65,000

Safety coordinators oversee the company’s adherence to DOT safety regulations and guidelines through regular monitoring and auditing of business activities. They provide leadership, planning and coordination around warehouse and shop safety compliance, as well supervision of driver safety practices.

**Skills & Knowledge:**
1. Safety regulations/compliance
2. Supervision/management
3. Verbal & written communication
4. Attention to detail

**Sector Pathways:**
- Front Line Supervisor
- Warehouse Manager: + B

---

**ANALYST [MID-LEVEL]**

- **Education:** B (Logistics, or related)
- **Work Experience:** 2-5
- **Salary:** $55,000-65,000

Use mathematical modeling to interpret information and help make decisions about future projects. In the field of transportation, analysts work with data pertaining to traffic flow, crash statistics, highway infrastructure, and air quality, among other topics.

**Skills & Knowledge:**
1. Mathematics & statistics
2. Data analysis
3. Analytic problem solving
4. Verbal & written communication
5. Detail-oriented

**Sector Pathways:**
- Shipping & Receiving Supervisor
- Supply Chain Manager: + A-B
- Operations Manager: +
- Purchasing Manager: +

**Cross-Sector Pathways:**
- Business Analyst (Energy)
- Staff Accountant/Auditor (Prof. Svcs.)

---

**WAREHOUSE MANAGER [MID-LEVEL]**

- **Education:** A-B (Logistics, Business, or related)
- **Work Experience:** 5+
- **Salary:** $55,000-65,000

Oversee the safe receipt, storage, retrieval and timely dispatch of goods by managing front line supervisors across all aspects of warehouse operation. They ensure workplace health and safety requirements are met and take responsibility for the security of the building and stock.

**Skills & Knowledge:**
1. Project management
2. Computer skills
3. Supervisory/management
4. Verbal & written communication
5. Planning, organization, & prioritization

**Sector Pathways:**
- Supply Chain Manager
- Operations Manager: +
- General/Distribution Center Manager: + B-M

**Cross-Sector Pathways:**
- Manager (Manufacturing)
Supply chain managers direct or coordinate distribution forecasting services or activities to limit costs and improve accuracy, customer service, and efficiency. They will also examine existing procedures or opportunities and streamline activities in order to meet distribution needs.

**Skills & Knowledge:**
1. Supervision/management
2. Systems analysis
3. Project management
4. Verbal & written communication
5. Computer skills

**Sector Pathways:**
- Warehouse Manager
- Operations Manager
- Purchasing Manager

**Cross-Sector Pathways:**
- Manager (Manufacturing)

---

The operations manager is responsible for managing the day to day operations across all operational areas (shipping & receiving, as well as storage and distribution). Individuals in this position will lead continuous improvement initiatives with a strong emphasis on safety, customer satisfaction, and cost. They also manage the implementation of training methods and benchmark standards for operating personnel.

**Skills & Knowledge:**
1. Supervision/management
2. Project management
3. Strategic planning
4. Verbal & written communication
5. Computer skills

**Sector Pathways:**
- Purchasing Manager
- General/Distribution Center Manager

**Cross-Sector Pathways:**
- Operations Manager (Aerospace)
- Production Manager (Manufacturing, Aerospace)

---

Purchasing managers plan, direct, and coordinate the buying of materials, products, or services for wholesalers, retailers, or organizations. They oversee the work of procurement-related occupations including buyers, sales, and purchasing agents.

**Skills & Knowledge:**
1. Contract negotiation & management
2. Vendor management
3. Management/leadership
4. Strategic planning
5. Verbal & written communication

**Sector Pathways:**
- Operations Manager
- General/Distribution Center Manager

**Cross-Sector Pathways:**
- Operations Manager (Aerospace)
- Accounting Manager (Prof. Svcs.)
- Audit Manager (Prof. Svcs.)

---

The general/distribution center manager is responsible for all aspects related to the receiving, storing, and shipping of goods to and from a distribution center, including all area managers and supervisors. They use reports and feedback from area managers to make strategic decisions regarding the overall operations and business plan of the distribution center, in accordance with corporate/regional plans.

**Skills & Knowledge:**
1. Strategic planning
2. Management/leadership
3. Analytic problem solving
4. Verbal & written communication

**Cross-Sector Pathways:**
- General Manager (Manufacturing, Aerospace, Energy)