



Heavy Equipment Operator & Operating Engineer

Youth Apprenticeship

HEAVY EQUIPMENT OPERATOR & OPERATING ENGINEER

Heavy Equipment Operators and Operating Engineer youth apprentices learn fundamental construction skills for commercial and residential developments, dams, roadways, etc. They learn blueprint reading, site layout, working safely, and the operation of tools and equipment.

Length of Apprenticeship: One year

COMPETENCIES

Youth apprentices work with a job site mentor to demonstrate the following competencies.

Youth apprentices must complete a total of **14** competencies. **Thirteen** must be from the list below. If necessary, employers can substitute **1** competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment.

Note the following pieces of equipment are prohibited for use by Youth Apprentices under the age of 18: aerial lift, skid steer, compactor, and forklift.

| Competencies |
|---|
| <ol style="list-style-type: none">1. Read blueprints, site plans and specifications2. Define site specific layout needs3. Identify equipment related safety hazards4. Describe uses for each piece of heavy equipment5. Operate generators and compressors6. Perform daily maintenance on equipment (Note: YAs cannot turn on prohibited equipment during daily maintenance)7. Apply math skills to heavy equipment operation8. Follow worksite health and safety practices9. Maintain an organized and safe work area10. Use hand and voice signals (Note: YAs cannot use hoisting equipment)11. Assist with repair and maintenance of equipment (Note: YAs cannot turn on prohibited equipment during repair and maintenance)12. Assist with establishing grade13. Assist with clearing and manual excavation of site (Note: For trenches, piers, foundations, and holes excavation is limited to 4 feet in depth or less)14. Operate tools and equipment safely (i.e., drill, torch welder) |

REGISTERED APPRENTICESHIP BRIDGING OPPORTUNITIES

The following Registered Apprenticeship is available in this area:

- Heavy Equipment Operator and Operating Engineer

POST-SECONDARY PATHWAY OPPORTUNITIES

There are several post-secondary pathway opportunities in this area. Following is partial list.

- Construction Management Technology
- Construction Safety Technology



Heavy Equipment Operator & Operating Engineer

Youth Apprenticeship
ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

YOUTH APPRENTICE INFORMATION

| | |
|-----------------------|-----------------------------|
| Youth Apprentice Name | |
| YA Coordinator | YA Consortium |
| School District | High School Graduation Date |

REQUIREMENTS

Level One Requirements

Youth apprentices must complete ALL the items listed below. Check completed areas.

- ☐ Competency checklist
- ☐ Employability Skills checklist (in this OJL Guide) or the DPI Employability Skills Certificate
- ☐ Related instruction equal to 1 high school credit or at least 3 college credits
- ☐ Minimum of 450 work hours

HOURS

Record the hours the youth apprentice worked.

| Total Hours Employed | Company Name | Telephone Number |
|----------------------|--------------|------------------|
| | | |
| | | |
| | | |
| | | |

CAREER PREPARATION

Youth apprentices must complete **one** of the following during Youth Apprenticeship participation:

- ☐ 1. Student is participating in a local or regional career pathway*.

Identify the pathway below:

For more information contact the [Wisconsin Department of Public Instruction](#). Additional help may be found on the WI DPI [Wisconsin Pathways – Regional Career Pathways](#) and [DPI Career Clusters and Pathways](#) web pages.

***Local and Regional career pathways** as defined by the WI DPI means that a student is participating in or has completed at least one CTE class in a cluster pathway sequence and has completed at least one of the other career pathway components: instructional related course, work-based learning, dual college credit, and/or career and technical student organization.

- ☐ 2. Student has completed one of the following certificates during their YA program or possess current certification earned previously.

A copy of the certificate must be uploaded with the completed checklist. Select the certificate from the list below.

- ☐ First Aid
☐ OSHA 10

Optional Additional Certifications

- ☐ Occupational Safety and Health Administration (OSHA) 30 Training
☐ WI Flagger Training Certificate
☐ OSHA-Compliant Aerial Lift Certification Training (at least 18 years of age)
☐ OSHA-Complaint Skid Steer Training (at least 18 years of age)
☐ Commercial Driver's License (CDL) Permit (at least 18 years of age)
☐ Other certificates identified by the Career Technical Education (CTE) Approved Certifications List related to this occupational field (or related to this occupation)
dwd.wisconsin.gov/det/cte incentive/ (YA certificates excluded)

Title of Certification:

- ☐ 3. Student is participating in a [Dual Enrollment Course](#) connected to any postsecondary education provider including UW System, Wisconsin Association of Independent Colleges and Universities (WAICU), and any of the 16 Wisconsin Technical Colleges (WTCS).

College Name:

College Course Title:

Course Number:

For more information on Dual Enrollment opportunities, please click on one of the below resources:

- [WTCS](#)
- [WAICU](#)
- UW System – connect with the college of choice.

SIGNATURES

The On-the-Job Learning (OJL) Performance Standards Guide includes a list of competencies youth apprentices learn through mentoring and training at the worksite.

Instructions for the Worksite Employers/Mentors and School-Based or YA coordinators.

This document should be reviewed with the employer / mentor, school-based or YA coordinator on a regular basis with the youth apprentice to record progress and plan future steps to ensure completion of the required competencies. Mentors, school-based / YA coordinator, and the apprentice sign below.

| | |
|--|------------------------------------|
| Employer/Mentor Signature | Employer/Mentor Signature |
| Employer/Mentor | Employer/Mentor |
| Business/Company | Business/Company |
| Date Signed | Date Signed |
| | |
| School-Based and/or YA Coordinator Signature | |
| School-Based and/or YA Coordinator | School-Based and/or YA Coordinator |
| School District or Organization | School District or Organization |
| Date Signed | Date Signed |
| | |
| Youth Apprentice Signature | Youth Apprentice Signature |
| Youth Apprentice | Youth Apprentice |
| School District / High School | School District / High School |
| Date Signed | Date Signed |

EMPLOYABILITY SKILLS

Youth apprentices must demonstrate key employability skills.

The DWD YA program employability skills requirement may be attained and demonstrated through two processes. (See options listed below.) Employability skills must be completed for every year a student is in the program. The DPI Employability Skills Certificate may be counted as meeting one of those two years, provided the certificate is earned in the same year the student is enrolled in youth apprenticeship or they can complete the YA Employability Skills in the OJL. The Employability Skills Certificate must be obtained through the DPI.

1. If a student has successfully completed a Wisconsin Department of Public Instruction (DPI) State-Certified Cooperative Education, [Co-Op Employability Skill certification](#) then they have met the YA Employability Skills requirement for that year. A copy of the student's DPI Co-Op Employability Skill Certificate must be maintained on file with their YA regional consortium.

☐ Earned Wisconsin Employability Skills Certificate (checked if applicable) or,

2. Completed and rated "Employability Skills" through this YA OJL guide as described below.

| | |
|----------|--|
| 3 | <i>Exceeds Expectations:</i> Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior |
| 2 | <i>Meets Expectations:</i> Meets entry-level criteria; requires some supervision; often displays this behavior |
| 1 | <i>Working to Meet Expectations:</i> Needs improvement; requires much assistance and supervision; rarely displays this behavior |

The following skills are required of all youth apprentices.

| Employability Skills | | Rating | | |
|---|--|---|--------------------------|--------------------------|
| Competency and Rating Criteria | | Minimum Rating of 2 for EACH Check Rating | | |
| | | 1 | 2 | 3 |
| 1. Develops positive work relationships with others. <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Interacts with others with respect and in a non-judgmental manner • Responds to others in an appropriate and non-offensive manner • Helps co-workers and peers accomplish tasks or goals • Applies problem-solving strategies to improve relations with others • When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Employability Skills | | Rating | | |
|---|--|---|--------------------------|--------------------------|
| Competency and Rating Criteria | | Minimum Rating of 2 for EACH Check Rating | | |
| | | 1 | 2 | 3 |
| 2. Communicates effectively with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Adjust the communication approach for the target audience, purpose, and situation to maximize impact • Organizes messages/information in a logical and helpful manner • Speaks clearly and writes legibly • Models behaviors to show active listening • Applies what was read to actual practice • Asks appropriate questions for clarity | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Collaborates with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities • Shares responsibility for collaborative work and decision making • Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise • Avoids contributing to an unproductive group conflict • Shares information and carries out responsibilities in a timely manner | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Maintains composure under pressure <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Uses critical thinking to determine the best options or outcomes when faced with a challenging situation • Carries out assigned duties while under pressure • Acts in a respectful, professional, and non-offensive manner while under pressure • Applies stress management techniques to cope under pressure | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Demonstrates integrity <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Carries out responsibilities in an ethical, legal and confidential manner • Responds to situations in a timely manner • Takes personal responsibility to correct problems • Models behaviors that demonstrate self-discipline, reliability, and dependability | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Employability Skills | | Rating | | |
|---|--|---|--------------------------|--------------------------|
| Competency and Rating Criteria | | Minimum Rating of 2 for EACH Check Rating | | |
| | | 1 | 2 | 3 |
| 6. Performs quality work <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Carries out written and verbal directions accurately • Completes work efficiently and effectively • Performs calculations accurately • Conserves resources, supplies, and materials to minimize costs and environmental impact • Uses equipment, technology, and work strategies to improve workflow • Applies problem-solving strategies to improve productivity • Adheres to worksite regulations and practices • Maintains an organized work area | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Provides quality goods or services (internal and external) <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Shows support for the organizational goals and principles by own personal actions • Displays a respectful and professional image to customers • Displays an enthusiastic attitude and desire to take care of customer needs • Seeks out ways to increase customer satisfaction • Produces goods to workplace specifications | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Shows initiative and self-direction <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Prioritizes and carries out responsibilities without being told • Responds with enthusiasm and flexibility to handle tasks that need immediate attention • Reflects on any unsatisfactory outcome as an opportunity to learn • Improves personal performance by doing something different or differently • Analyzes how own actions impact the overall organization • Supports own action with sound reasoning and principles • Balances personal activities to minimize interference with work responsibilities | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Adapts to change <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"> • Shows flexibility and willingness to learn new skills for various job roles • Uses problem-solving and critical-thinking skills to cope with changing circumstances • Modifies own work behavior based on feedback, unsatisfactory outcomes, efficiency, and effectiveness • Displays a "can do" attitude | | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Employability Skills | | Rating | | |
|---|--|---|--------------------------|--------------------------|
| Competency and Rating Criteria | | Minimum Rating of 2 for EACH Check Rating | | |
| | | 1 | 2 | 3 |
| 10. Demonstrates safety and security regulations and practices <i>Examples of qualities and habits that the employee might exhibit include . . .</i> | <ul style="list-style-type: none"> Follows personal safety requirements Maintains a safe work environment Demonstrates professional role in an emergency Follows security procedures Maintains confidentiality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Applies job-related technology, information, and media <i>Examples of qualities and habits that the employee might exhibit include . . .</i> | <ul style="list-style-type: none"> Applies technology effectively in the workplace Assesses and evaluates information on the job Assesses training manuals, website, and other media related to the job | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Fulfills training or certification requirements for employment <i>Examples of qualities and habits that the employee might exhibit include . . .</i> | <ul style="list-style-type: none"> Participation in required career-related training and/or educational programs Passing certification tests to qualify for licensure and/or certification Participation in company training or orientation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Sets personal goals for improvement <i>Examples of qualities and habits that the employee might exhibit include . . .</i> | <ul style="list-style-type: none"> Setting goals that are specific and measurable Setting work-related goals that align with the organization's mission Identifying strategies to reach goals Reflecting on goal progress to regularly evaluate and modify goals | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

COMPETENCIES

Youth apprentices must complete a total of **14** competencies. **Thirteen** must be from the list below. If necessary, employers can substitute **1** competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment.

Rating Scale

3: Exceeds entry level criteria | Requires minimal supervision | Consistently displays this behavior

2: Meets entry level criteria | Requires some supervision | Often displays this behavior

1: Needs improvement | Requires much assistance and supervision | Rarely displays this behavior

| Competency and Rating Criteria | Minimum Rating of 2 for EACH Check Rating | | |
|---|---|--------------------------|--------------------------|
| | 1 | 2 | 3 |
| 1. Read blueprints, site plans, and specifications <ul style="list-style-type: none"> relate the project documents to the parties in the project relate drawing to job task interpret elements and symbols locate worksite features on a construction plan convert scaled measurements to full measurements translate specifications to work requirements read a ruler/scale read typical sections, cross sections, and profiles | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Define site specific layout needs <ul style="list-style-type: none"> translate the construction documents to the job site examine the various roles in the development of the project interpret special conditions and needs to the project and site layout the work interpret utility location markings | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Identify equipment related safety hazards <ul style="list-style-type: none"> recognize potentially hazardous locations, conditions, and procedures avoid potential hazards wear appropriate safety gear and personal protective equipment (PPE) pay attention to signs, tags, barricades and lockout/tagout devices report hazards to appropriate personnel take initiative to correct hazards | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Describe uses for each piece of heavy equipment <ul style="list-style-type: none"> explain equipment purposes describe equipment capabilities explain advantages and limitations of using the equipment correlate equipment with attachments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Competency and Rating Criteria | Minimum Rating of 2 for EACH Check Rating | | |
|---|---|--------------------------|--------------------------|
| | 1 | 2 | 3 |
| 5. Operate generators and compressors <ul style="list-style-type: none"> • layout a work plan • don personal protective equipment (PPE) • perform prestart inspection • start up the machine • manipulate controls to operate equipment • follow safety procedures avoiding hazards • work in a timely manner • follow a safe shutdown procedure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Perform daily maintenance on equipment (Note: YAs cannot turn on prohibited equipment during daily maintenance) <ul style="list-style-type: none"> • inspect equipment • perform minor repairs • lubricate equipment • clean equipment • secure equipment • document maintenance | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Apply math skills to heavy equipment operation <ul style="list-style-type: none"> • select and use measuring tools • scale proportions • utilize stationing • convert between engineer scale and architectural scale • calculate and convert area, volume, and tonnages • determine slope and elevations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Follow worksite health and safety practices <ul style="list-style-type: none"> • use appropriate clothing and personal protective equipment (PPE) • comply with job site safety and security rules and regulations • identify and report unsafe job conditions • report injuries and damage to property to supervisor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Maintain an organized and safe work area <ul style="list-style-type: none"> • clean and maintain materials and tools • clean, organize, and put away items in the work area • store materials and tools • follow facility procedures for clean-up and shut down | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Competency and Rating Criteria | Minimum Rating of 2 for EACH Check Rating | | |
|---|---|--------------------------|--------------------------|
| | 1 | 2 | 3 |
| 10. Use hand and voice signals (Note: YAs cannot use hoisting equipment) <ul style="list-style-type: none"> • select appropriate signal • give the signal • confirm receipt of the signal • interpret the meaning of the signal | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Assist with repair and maintenance of equipment (Note: YAs cannot turn on prohibited equipment during repair and maintenance) <ul style="list-style-type: none"> • perform equipment inspections • locate documentation needed • assist to diagnose common concerns • check for and replace worn or damaged parts • maintain fluid levels | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. Assist with establishing grade <ul style="list-style-type: none"> • set up and level the laser • tie in an verify local benchmarks • determine existing elevations • calculate cuts or fills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. Assist with clearing and manual excavation of site (Note: For trenches, piers, foundations, and holes excavation is limited to 4 feet in depth or less) <ul style="list-style-type: none"> • hand clear sites • dig trenches • maintain a level grade • verify existing utilities • follow safety procedures | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. Operate tools and equipment safely (i.e., drill, torch welder) <ul style="list-style-type: none"> • select the right tool for the task • verify tool is in working order • don personal protective equipment (PPE) • use guarding devices if applicable • follow safety procedures avoiding hazards • perform preventative maintenance • follow a safe shutdown procedure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Competency Substitute (if you replaced a competency above, note the competency and rating) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| Competency and Rating Criteria | Minimum Rating of 2 for EACH Check Rating | | |
|--------------------------------|---|---|---|
| | 1 | 2 | 3 |
| Comments: | | | |

RELATED INSTRUCTION

Indicate which related instruction course(s) the youth apprentice completed:

| Course Title | Credits | Location |
|--------------|---------|----------|
| | | |
| | | |
| | | |
| | | |



Post-Program Completion Survey

Youth Apprenticeship

YA POST-PROGRAM COMPLETION SURVEY

The [Post-Program Completion Survey](#) form is to be provided to each student completing the Youth Apprenticeship program to capture information on the student's plans after leaving the program. The form should be filled out during the final meeting between the student, mentor, and Local Youth Apprenticeship Coordinator, when the final checklist is filled out and signed. Information captured on this form must be entered online using the Youth Apprenticeship Online Data Application (YODA) System.

DWD is an equal opportunity employer and service provider. If you have a disability and need assistance with this information, please dial 7-1-1 for Wisconsin Relay Service. Please contact the Division of Employment and Training at 888-258-9966 and press 6 to request information in an alternate format, including translated to another language.

