

ELECTROMECHANICAL/MECHATRONICS

Electromechanical/Mechatronics youth apprentices gain skills related to operating, testing, maintaining, or adjusting unmanned, automated, servomechanical, or electromechanical equipment. Apprentices must adhere to industry safety and security standards.

Length of Apprenticeship: One year

COMPETENCIES

Youth Apprentices must complete **a total of 15** competencies. **Thirteen** of the 15 competencies listed below must be complete. Employers can substitute up to **2** competencies with other occupationally appropriate skills. Substitutions must be added to the competency list for assessment. Note that where necessary, skills can be simulated.

***Students who completed one year of Electromechanical/Mechatronics or a previous Manufacturing YA program do *not* need to repeat the Manufacturing Fundamentals Competencies.

Manufacturing Fundamentals Competencies	Electromechanical/Mechatronics Competencies
1. Focus on customer needs 2. Use various instruments 3. Operate tools and equipment safely 4. Practice quality assurance principles 5. Follow personal safety requirements 6. Maintain a safe work environment 7. Demonstrate professional role to be used in an emergency	1. Use test instruments 2. Read blueprints and schematics 3. Install electrical and electronic parts 4. Use hand tools 5. Install mechanical equipment 6. Troubleshoot electronic systems 7. Use precision measuring instruments 8. Procure parts

REGISTERED APPRENTICESHIP BRIDGING OPPORTUNITIES

Some of the related instruction courses can bridge into the following registered apprenticeship:

- Mechatronics

POST-SECONDARY PATHWAY OPPORTUNITIES

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

- Mechatronics Basics Technical Diploma
- Electromechanical Maintenance Technician Technical Diploma



ELECTROMECHANICAL/MECHATRONICS

Youth Apprenticeship

ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

(TO BE COMPLETED BY YA CONSORTIUM)

YOUTH APPRENTICE INFORMATION

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

REQUIREMENTS

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

- ☐ Competency checklist
- ☐ Employability Skills checklist (in this job book) 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

RELATED INSTRUCTION

YEAR 1: Indicate which related instruction courses the youth apprentice completed.

Dual Credit	Course Number and Title	Credits	Instruction Provider
☐			
☐			
☐			
☐			

SIGNATURES

The On-the-Job Learning 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 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 (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

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	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this behavior
1	Working to Meet Expectations: 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> • 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		☐	☐	☐
2. Communicates effectively with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • 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		☐	☐	☐

Employability Skills		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating			
	1	2	3	
3. Collaborates with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • 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	☐	☐	☐	
4. Maintains composure under pressure <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • 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	☐	☐	☐	
5. Demonstrates integrity <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • 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	☐	☐	☐	
6. Performs quality work <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • 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	☐	☐	☐	

Employability Skills		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH			Check Rating
	1	2	3	
7. Provides quality goods or services (internal and external) <i>Examples of qualities and habits that the employee might exhibit include . . .</i> - 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	☐	☐	☐	
8. Shows initiative and self-direction <i>Examples of qualities and habits that the employee might exhibit include . . .</i> - 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	☐	☐	☐	
9. Adapts to change <i>Examples of qualities and habits that the employee might exhibit include . . .</i> - 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	☐	☐	☐	
10. Demonstrates safety and security regulations and practices <i>Examples of qualities and habits that the employee might exhibit include . . .</i> - Follows personal safety requirements - Maintains a safe work environment - Demonstrates professional role in an emergency - Follows security procedures - Maintains confidentiality	☐	☐	☐	

Employability Skills		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating			
	1	2	3	
11. Applies job-related technology, information, and media <i>Examples of qualities and habits that the employee might exhibit include . . .</i> • Applies technology effectively in the workplace • Assesses and evaluates information on the job • Assesses training manuals, website, and other media related to the job	☐	☐	☐	
12. Fulfills training or certification requirements for employment <i>Examples of this requirement may include . . .</i> • 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	☐	☐	☐	
13. Sets personal goals for improvement <i>Examples of this requirement may include . . .</i> • 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	☐	☐	☐	

COMPETENCIES (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Youth Apprentices must complete a **total of 15** competencies. **Thirteen** of the 15 competencies listed below must be complete. Employers can substitute up to **2** competencies with another occupationally appropriate skills. Substitutions must be added to the competency list for assessment. Note that where necessary, skills can be simulated.

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

If any competencies are rated "1" on the final performance review checklist that is submitted to WI DWD it is considered a failed checklist.

Manufacturing Fundamentals Occupational Competencies		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating			
	1	2	3	
1. Focus on customer needs - identify internal and external customers impacted by the production process - satisfy internal and external customer's expectations - collaborate with team - assist work site professional to keep internal and/or external customers informed of project progress and decisions that may affect them - define the impact of the Voice of the Customer - determine the impact of your work to the internal and external customer	☐	☐	☐	
2. Use various instruments - consider the degree of precision required by the part feature - choose correct measuring instrument for task - verify equipment is available for use and in working order - verify equipment preventative maintenance and/or calibration - inspect tools and work area for safety considerations - clean and adjust measuring instrument prior to use - use gauges, calipers, and micrometer instruments - use semi-precision and precision layout tools - use digital gauges, checking fixtures - use digital scales, thermometers - confirm measurement accuracy - record measurement correctly including unit of measurement at proper interval - calibrate, clean, and store measuring instruments properly - convert standard to metric – metric to standard measurement units	☐	☐	☐	

Manufacturing Fundamentals Occupational Competencies		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating			
	1	2	3	
3. Operate tools and equipment safely - operate only tool/equipment that he/she is trained on - choose correct tool/equipment for the task - follow tool check list - verify tool/equipment is available for use and in working order - verify tool/equipment is current for preventative maintenance and/or calibration - wear appropriate personal protective equipment (PPE) - inspect tool/equipment and work area for safety considerations - prepare tool/equipment for safe operation - operate tool/equipment safely with guarding devices - monitor tool/equipment for safe operation while operating - compare tool/equipment performance regularly to optimal equipment operations - follow facility procedures for clean-up and shut down after use - perform required preventative maintenance procedures - report abnormal tool/equipment conditions - properly shuts down and labels any tool/equipment that is not operating as expected - follow Lock Out/Tag Out procedures as applicable - document use and maintenance	☐	☐	☐	
4. Practice quality assurance principles - inspect materials/piece/product at all stages of production - identify quality or condition of materials/piece/product - monitor materials, processes, equipment, tools, and products throughout the production process - inspect final product/piece to ensure it meets specifications - identify and segregate materials and/or product that do not meet specification - communicate with work site professional if materials/product do not meet requirements - document all quality checks - participate in root-cause analysis of process/product - take ownership of work - collaborate with work site professional on corrective action	☐	☐	☐	

Manufacturing Fundamentals Occupational Competencies		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating			
	1	2	3	
5. Follow personal safety requirements (safety) • participate in required safety training • follow all worksite guidelines for personal safety • apply principles of proper body mechanics • report exposures, injuries, near misses, or accidents, personal or to others immediately • locate key information on material safety data sheets (MSDS) • handle and dispose of any hazardous materials appropriately • operate equipment that he/she is trained on • adhere to equipment safety standards • visually inspect equipment before operation • wear required personal protective equipment (PPE) at all times • follow company emergency action plan • identify hazardous conditions and restricted areas in the workplace • avoid pinch points • be aware of surroundings	☐	☐	☐	
6. Maintain a safe work environment (safety) • comply with posted safety warnings and symbols • identify unsafe conditions and/or work habits • report unsafe conditions and/or work habits • help maintain a clean and safe working environment free of debris and obstacles • maintain clean, organized work area • use hazardous materials according to company procedure • report any indications of insects or pests, if necessary • follow appropriate Lock out – tag out procedures • adhere to Occupational Safety and Health Administration (OSHA) Safety guidelines • follow rules for operating equipment (Powered Industrial Vehicle PIV) • identify applicable Emergency Stops	☐	☐	☐	

Manufacturing Fundamentals Occupational Competencies		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH			
	1	2	3	
7. Demonstrate professional role to be used in an emergency (safety) • participate in emergency safety simulations and drills • describe company's policy and procedures for work site incidents, accidents, electrical, fire, tornado, bomb threats, robbery, hostage situations, and other emergency situations • identify the closest fire alarms and emergency exits • identify the fire extinguishers • identify appropriate alarms and procedures for using alarms • contact emergency personnel in the event of an emergency • contribute to emergency incident documentation	☐	☐	☐	
Competency Substitute (if you replaced a competency above, note the competency and rating)	☐	☐	☐	
Comments:				

Electromechanical/Mechatronic (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Occupational Competencies		Rating		
Competency and Rating Criteria		Minimum Rating of 2 for EACH Check Rating		
		1	2	3
1. Use test instruments • wear proper personal protective equipment (PPE) • adhere to arc flash safety • operate multimeters • operate micrometers • use rules, tapes, and related measuring devices • determine dimensions and tolerances • measure voltage • measure current • measure resistance • set and use torque wrench		☐	☐	☐
2. Read blueprints and schematics • identify symbols • describe parts and specifications • interpret parts and specifications • describe dimensioning information on industrial parts • identify use of prints in troubleshooting equipment and devices		☐	☐	☐
3. Install electrical and electronic parts • interpret electrical schematics • install electrical field devices • plan control cabinet layout		☐	☐	☐
4. Use hand tools • use measuring devices • operate drilling tools • operate cutting tools • operate fastening tools • use bending and shaping equipment		☐	☐	☐
5. Install mechanical equipment • assemble tools • run wires • terminate wires • label wire • assemble basic panels		☐	☐	☐

Occupational Competencies		Rating		
Competency and Rating Criteria	Minimum Rating of 2 for EACH			
	1	2	3	
6. Troubleshoot electronic systems • wear proper personal protective equipment (PPE) • follow safety procedures • identify common testing procedures • inspect electronic system • document troubleshooting steps and results • troubleshoot ac/dc circuits • troubleshoot with plc logic • research solutions to problems	☐	☐	☐	
7. Use precision measuring instruments • identify job-appropriate measuring instrument • use micrometers • use calipers • use gages • use indicators	☐	☐	☐	
8. Procure parts • identify parts needed • research needed parts • determine part source • document part order	☐	☐	☐	
Competency Substitute (if you replaced a competency above, note the competency and rating)	☐	☐	☐	
Comments:				



Post-Program Completion Survey

Youth Apprenticeship

YA POST-PROGRAM COMPLETION SURVEY: EMPLOYER FEEDBACK

Employers complete the following information. YA Coordinators will enter this into the Post-Program Completion Survey.

YA Employer Post-Program Completion Questions	
Will you offer or have you offered the Youth Apprentice a continuing position with your company?	☐ Yes ☐ No
If continuing position offered to youth apprentice, did they accept?	☐ Yes ☐ No
If yes, please answer the questions below:	
Was the offer for full time or part time work?	☐ Full-time ☐ Part-time
Title of the position offered:	
What is the wage of the continuing employment offer?	
If applicable, will the youth apprentice advance to a Registered Apprenticeship?	

YA POST-PROGRAM COMPLETION SURVEY: COMPLETED BY YA CONSORTIUM

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. This **form should be completed by the Youth Apprenticeship Coordinator** to capture information from all high school seniors and their employers after successful completion of the Youth Apprenticeship Program.

The form should be completed during the final meeting between the student, mentor, and Youth Apprenticeship Coordinator, when the final checklist or On-the-Job Learning (OJL) Guide is filled out and signed. Information captured on this form must be entered online using the Bureau of Apprenticeship Standards Electronic Records System (BASERS).

No part of this document may be altered, duplicated, or extracted without written consent from the Wisconsin Department of Workforce Development (DWD).

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.

