

## **Technical Studies (Associate of Applied Science), Millwright Concentration**

This program is designed to prepare students to work efficiently as a Millwright. Since its humble beginnings in the construction of wood mills, the Millwright trade has expanded to include work in metal and machinery of ever-increasing technology and precision. Millwrights install, align, and troubleshoot machinery in factories, power plants (particularly the precision machinery required in nuclear power plants), and other industrial sites. They install conveyor systems, connect machinery to power supplies and piping, direct hoisting and setting of machines, and adjust the moving and stationary parts of machines to certain specifications. Millwrights must be extremely skilled at mathematics and interpreting blueprints and specifications to set machines at perfect measurements, sometimes working with clearances no bigger than thousandths of an inch. This program covers five levels of training based on curriculum developed by the National Center for Construction Education and Research (NCCER). NCCER's curriculum covers topics such as Millwright Hand Tools and Fabricating Shims. Students who successfully complete the program will be nationally certified by NCCER.

Source: <http://www.nccer.org/millwright>  
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To receive any credential in this program, the student must:

- Complete the program of study below.
- Earn a "C" or better in all courses that are to be used towards the credential.

### **Program Outcomes. Upon successful completion of the program, the graduate will be able to:**

1. Demonstrate the ability to install, repair, and maintain industrial machinery and equipment.
2. Perform preventive and predictive maintenance tasks identified through examination of industrial machinery and equipment.
3. Safely operate rigging and hoisting equipment.
4. Utilize various hand and precision measuring tools to perform layouts.

### **Program of Study**

<b>First Semester</b>		<b>Credit Hours</b>
CORE 1003	Introduction to Craft Skills	<b>3</b>
MILL 1113	Basic Millwright Principles	<b>3</b>
MILL 1123	Layout, Sealing, and Oxyfuel Cutting	<b>3</b>
ENGL 1013	English Composition I	<b>3</b>
GenEd MATH	Any department-approved General Education Course in Mathematics	<b>3</b>
<b>Semester Total:</b>		<b>15</b>
<b>Second Semester</b>		<b>Credit Hours</b>
MILL 1213	Trade Math I, Sketching, and Blueprints I	<b>3</b>
MILL 1223	Specialty Tools and Rigging	<b>3</b>
MILL 1233	Plates, Lubrication, and Bearings	<b>3</b>
MILL 1313	Trade Math II, Measuring, and Packing	<b>3</b>
GenEd Humanities	Any department-approved, SASCOC-accepted General Education course in Humanities	<b>3</b>

		<b>Semester Total:</b>	<b>15</b>
<b>Third Semester</b>			<b>Credit Hours</b>
MILL 1323	Seals, Bearings, and Couplings		<b>3</b>
MILL 1333	Shims, Jigs, Drives, Fans, and Blowers		<b>3</b>
MILL 2413	Conveyors and Conventional Alignment		<b>3</b>
MILL 2423	Pumps and Compressor Systems		<b>3</b>
GedEd Phys Sci	Any department-approved General Education Course in Physical Sciences		<b>3</b>
		<b>Semester Total:</b>	<b>15</b>
<b>Fourth Semester</b>			<b>Credit Hours</b>
MILL 2433	Hydraulic Systems and Gearboxes		<b>3</b>
MILL 2513	Reverse and Laser Alignment		<b>3</b>
MILL 2523	Blueprints II and Optical Alignment		<b>3</b>
MILL 2533	Motors, Preventive Maintenance Inspection, and Vibration Analysis		<b>3</b>
GenEd Soc Sci	Any department-approved General Education course in the Social Sciences		<b>3</b>
		<b>Semester Total:</b>	<b>15</b>
<b>Total Program Credit Hours, Technical Studies AAS, Millwright Concentration</b>			<b>60</b>

### Millwright Credentials Available

<b>NCCER Millwright Level 1 courses (9 credit hours):</b>		<b>Credit Hours</b>
CORE 1003	Introduction to Craft Skills	<b>3</b>
MILL 1113	Basic Millwright Principles	<b>3</b>
MILL 1123	Layout, Sealing, and Oxyfuel Cutting	<b>3</b>
		<b>9</b>
<b>NCCER Millwright Level 2 courses (9 credit hours):</b>		<b>Credit Hours</b>
MILL 1213	Trade Math I, Sketching, and Blueprints I	<b>3</b>
MILL 1223	Specialty Tools and Rigging	<b>3</b>
MILL 1233	Plates, Lubrication, and Bearings	<b>3</b>
<b>NCCER Millwright Level 2 (Level 1 and Level 2 courses)</b>		<b>18</b>
<b>NCCER Millwright Level 3 courses (9 credit hours):</b>		<b>Credit Hours</b>
MILL 1313	Trade Math II, Measuring, and Packing	<b>3</b>
MILL 1323	Seals, Bearings, and Couplings	<b>3</b>
MILL 1333	Shims, Jigs, Drives, Fans, and Blowers	<b>3</b>
<b>CTS, NCCER Millwright Level 3 (Level 1, Level 2, and Level 3 courses)</b>		<b>27</b>
<b>NCCER Millwright Level 4 courses (9 credit hours):</b>		<b>Credit Hours</b>
MILL 2413	Conveyors and Conventional Alignment	<b>3</b>
MILL 2423	Pumps and Compressor Systems	<b>3</b>

MILL 2433	Hydraulic Systems and Gearboxes	<b>3</b>
<b>NCCER Millwright Level 4 (Level 1, Level 2, Level 3, and Level 4 courses)</b>		<b>36</b>
<b>NCCER Millwright Level 5 courses (9 credit hours):</b>		<b>Credit Hours</b>
MILL 2513	Reverse and Laser Alignment	<b>3</b>
MILL 2523	Blueprints II and Optical Alignment	<b>3</b>
MILL 2533	Motors, Preventive Maintenance Inspection, and Vibration Analysis	<b>3</b>
<b>TD, NCCER Millwright Level 5 (Level 1, Level 2, Level 3, Level 4, and Level 5 courses)</b>		<b>45</b>

For more information, contact the Division of Technical Education at 225-216-8367.