

# INDUST EQUIPMENT MECHANIC (462)

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## **462-100. Mechanical Repair. (3 Credits)**

Gain the basic knowledge and skills required of technicians in industrial settings. Explore safety techniques, and learn the properties and use of hand and power tools, fasteners, drives (gear, chain and belt), ball screws, couplings, pump and valve packings and seals, lubrication, and bearings. Discuss basic machine installation, alignment, and leveling.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=100>)

## **462-104. Industrial Safety. (2 Credits)**

Learn about industrial safety concepts and ensuring safe work practices. Topics include OSHA, Lock out/Tag out, Personal Protective Equipment, Hazardous Communication, Electrical Safety, Industrial Hygiene, Machine Guarding, Fall Protection and Permit-Required Confined Spaces. Upon successful completion of the course, the student will be issued the OSHA 30-hour for General Industry card.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=104>)

## **462-120. Power Systems. (2 Credits)**

Gain an overview of how power systems are involved with various manufacturing applications. Subjects to be covered include electricity, hydraulics, mechanical power systems, and pneumatics.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=120>)

## **462-121. Power Systems. (3 Credits)**

Gain an overview of how power systems are involved with various manufacturing applications. Explore electricity, hydraulics, mechanical power systems and pneumatics.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=121>)

## **462-151. Mechanical Power Trans 1. (3 Credits)**

Learn the basic methods of mechanical power transmission. Explore belts, chain drives, clutches, brakes, bearings, couplings and shaft alignment.

Prerequisites: 462-314 (may be taken concurrently) with a minimum grade of C or 664-165 (may be taken concurrently) with a minimum grade of C or 663-107 (may be taken concurrently) with a minimum grade of C and (804-310 (may be taken concurrently) with a minimum grade of C- or 804-107 (may be taken concurrently) with a minimum grade of C- or 804-115 (may be taken concurrently) with a minimum grade of C- or 804-116 (may be taken concurrently) with a minimum grade of C- or 804-118 (may be taken concurrently) with a minimum grade of C- or 804-195 (may be taken concurrently) with a minimum grade of C- or 804-198 (may be taken concurrently) with a minimum grade of C- or 804-305 (may be taken concurrently) with a minimum grade of C-)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=151>)

## **462-167. IMT System Troubleshooting. (4 Credits)**

Develop troubleshooting techniques and the ability to diagnose and isolate malfunctions that commonly occur in equipment such as CNC machines and Servo systems.

Prerequisites: (605-129 with a minimum grade of C or 414-389 with a minimum grade of C) and 605-188 with a minimum grade of C and (612-110 with a minimum grade of C or 612-115 with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=167>)

## **462-304. Industrial Safety. (2 Credits)**

Learn about industrial safety concepts and ensuring safe work practices. Topics include OSHA, Lock out/Tag out, Personal Protective Equipment, Hazardous Communication, Electrical safety, Industrial Hygiene, Machine Guarding, Fall Protection and Permit-Required Confined Spaces. Upon successful completion of the course, the student will be issued the OSHA 30-hour for General Industry card.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=304>)

## **462-314. Basic Maintenance Tools. (1 Credit)**

Learn the basic mechanical knowledge and skills needed to work in an industrial setting. Explore safety, hand and power tools, fasteners, piping and measuring tools.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=314>)

## **462-316. Trends in Mechanical Fields. (1 Credit)**

Explore current trends and recent developments in mechanical industries. Focus on new technologies, equipment and techniques within mechanical fields. Apply what you learn through hands-on activities and on-site experiences at local employers.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=316>)

## **462-326. Machine Tool Alignment. (4 Credits)**

Become familiar with the operation and alignment of the machine tools used in the maintenance field. Complete maintenance projects used in the maintenance field that meet dimensional and aesthetic requirements. See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=326>)

## **462-330. Machine Tool Assessment. (4 Credits)**

Learn about and use alignment tools and techniques through discussion and lab. This course builds on skills developed in Machine Tool Alignment and Operation. Machine wear assessment is stressed using industry standards.

Prerequisites: (462-326 with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=330>)

## **462-350. Maintenance Fundamentals. (4 Credits)**

Discuss topics such as the installation of motors and the fundamentals of mechanical power transmission systems such as shaft alignment, belt drives, and chain drives. Apply learned skills and basic tool usage to actual applications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=350>)

**462-351. Mechanical Power Transmission. (4 Credits)**

Expand your knowledge of mechanical power transmission systems by working with a variety of shaft coupling devices commonly seen in industry including the precision alignment of shafts using dial indicators. Explore the operation of laser shaft alignment systems and apply the knowledge to simulated applications. Gain familiarity with the different types of gears seen in industry and obtain hands on experience working with speed reducers, brakes and clutches.

Prerequisites: 462-350 with a minimum grade of C- and (804-305 (may be taken concurrently) with a minimum grade of C- or 804-107 (may be taken concurrently) with a minimum grade of C-)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=351>)

**462-353. Mechanical Power Trans 2. (4 Credits)**

Gain the basic knowledge and skills required for technicians in industrial settings. Explore safety techniques and learn the properties and use of hand and power tools, fasteners, drives (gear, chain and belt), ball screws, couplings, lubrication, bearings, pumps, valve packings and seals. Discuss basic machine installation, alignment and leveling.

Prerequisites: 462-151 with a minimum grade of C

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=353>)

**462-365. IMT Equip Install & Align. (4 Credits)**

Use latest technology to safely rig, hoist and set in place equipment as well as learn the fundamentals of alignment, bearing failure and installation.

Prerequisites: 804-310 with a minimum grade of C- or 804-107 with a minimum grade of C- or 804-115 with a minimum grade of C- or 804-116 with a minimum grade of C- or 804-118 with a minimum grade of C- or 804-195 with a minimum grade of C- or 804-198 with a minimum grade of C- or 804-305 with a minimum grade of C-

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=365>)

**462-366. IMT Pump and Piping Systems. (4 Credits)**

Gain hands on experience to safely install repair and maintain centrifugal pumps, piping systems as well as current lubrication procedures and technology.

Prerequisites: 804-310 with a minimum grade of C- or 804-107 with a minimum grade of C- or 804-115 with a minimum grade of C- or 804-116 with a minimum grade of C- or 804-118 with a minimum grade of C- or 804-195 with a minimum grade of C- or 804-198 with a minimum grade of C- or 804-305 with a minimum grade of C-

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=366>)

**462-367. IMT System Troubleshooting. (4 Credits)**

Develop troubleshooting techniques and the ability to diagnose and isolate malfunctions that commonly occur in equipment such as CNC machines and Servo systems.

Prerequisites: (605-129 with a minimum grade of C- or 414-389 with a minimum grade of C-) and 605-188 with a minimum grade of C- and (612-110 with a minimum grade of C- or 612-115 with a minimum grade of C-)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=367>)

**462-368. IMT Predictive Maintenance. (4 Credits)**

Become familiar with predictive and preventive maintenance technologies including oil analysis, thermography, vibration analysis and airborne ultrasonics.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=368>)

**462-369. Predictive Maint Technologies. (3 Credits)**

Learn to evaluate and diagnose predictive maintenance technologies such as IR thermography, vibration analysis, oil analysis and airborne ultrasonic monitoring.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=369>)

**462-370. Fluid Power Systems. (3 Credits)**

Learn to use the tools, equipment, controls (hydraulic, pneumatic and electric) and systems used in industrial fluid power plant operations. Work with the lab volt trainers to perform a variety of lab assignments. Complete activities using electro-pneumatic/hydraulic equipment, including troubleshooting trainers and component rebuild labs.

Prerequisites: (612-110 with a minimum grade of C or 612-115 with a minimum grade of C)

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=370>)

**462-390. IMT Computer Applications. (1 Credit)**

Study computer concepts and use computers for testing and other industrial maintenance applications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=390>)

**462-402. Rigging. (3.2 Credits)**

This course is designed to provide the student with the basic skills and knowledge in the area of maintenance rigging. Instruction includes; safety, evaluating machinery, moving, and the rigging projects.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=402>)

**462-404. Machine Mechanics. (0.25 Credits)**

Learn about gears, levers, beam load, kinetic/potential energy, static/dynamic loads, basic calculations and applications.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=404>)

**462-421. Basic Training for Mach. Techs. (4 Credits)**

Explore basic tools and troubleshooting methods for mechanical systems, pneumatics, controls and robotics.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=421>)

**462-501. Rigging for Apprentices. (1 Credit)**

This course is designed to provide apprentices with the basic skills and knowledge in the area of maintenance rigging. Instruction includes; safety, evaluating machinery, moving, and the rigging projects.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=501>)

**462-506. Schematics-Inj Mold Setup. (1 Credit)**

Explore the basics of schematic print reading for the injection mold set up apprentice, and study topics including hydraulics, pneumatics, and electrical schematics.

See sections of this course (<http://www.wctc.edu/academics/programs-courses/course-search/course-search-listing.php?code=462&num=506>)