

# WESTERN MICHIGAN UNIVERSITY

**TITLE:** Small Engine Mechanic

**GRADE:** ST1

**FUNCTIONS:**

This position maintains and repairs mechanical and power-driven equipment employed in Landscape Services, including walk-behind and riding mowers, weed trimmers and edgers, leaf and snow blowers, air compressors, rototillers, power sprayers, augers, skid loaders, and hydraulic snow plows. The incumbent overhauls and repairs engines and auxiliary components, mechanical and hydraulic systems, transmissions, cooling systems, differentials and braking systems. This position inspects and changes tires; replaces and/or sharpens blades on mowers and trimmers; lubricates mechanical systems; tunes engines; repairs and replaces pulleys and drive belts; repairs and replaces electronic ignition systems and safety switches; and performs additional maintenance as specified in manuals. The incumbent tests equipment to ensure that it is correctly tuned and operating properly.

This position utilizes manual and power wrenches and screwdrivers, channel locks, and other hand and power tools and instruments to tune engines, remove and replace nuts, bolts and screws, and perform other maintenance and repairs. In addition to wrenches and screw drivers, the incumbent may employ hammers, mallets, crowbars, wedges and other devices to dismantle engine housings, disengage mower, trimmer and tiller blades, and to assemble/disassemble equipment.

This position operates a grinder to sharpen mower, trimmer and tiller blades. The incumbent employs a soldering gun and other tools to repair electrical wiring and systems, and employs arc and acetylene welding torches to repair equipment. This position uses manual and hydraulic jacks, chain pulls and blocks, and electrical chain hoists to lift equipment in order to gain access to axles, blades, wheels and other components. The incumbent employs a lug wrench to loosen wheel covers/wheels.

The incumbent operates a trailer and truck to remove non-functioning equipment from field sites and to transport equipment to the repair facility. This position hooks equipment to, and operates, an electric winch to lift and tow equipment. Smaller items of equipment which require repairs which cannot be completed in the field may be transported to the repair facility by pick-up truck.

The incumbent requisitions supplies and replacement parts and informs supervisory personnel of appropriate types and quantities of supplies and parts to maintain in operating inventories. The incumbent maintains records of preventive maintenance work performed and logs equipment operation as required. This position organizes assigned work so as to minimize work-hours and materials required for proper completion of work. The incumbent instructs others in the operation of, and performance of preventive maintenance for, all related equipment.

This position maintains the repair facility, truck and other assigned vehicle(s) in a neat, clean and orderly condition and performs all work in accordance with established safety practices. The incumbent must wear MIOSHA approved safety shoes at all times and must wear a hard hat, gloves

and goggles when using arc and acetylene welding equipment. Safety glasses and gloves may be required when using power tools and grinders, and other protective gear must be worn as required by MIOSHA rules. The incumbent must wear no loose-fitting clothing, which might become entangled in equipment and machinery, posing a hazard to incumbent's safety. This position performs additional duties as requested by supervisory personnel, including, but not limited to, emergency maintenance and repair of heavy equipment, including front-end loaders, dump trucks, back hoes, pick-up trucks and tractors.

## **QUALIFICATIONS:**

The incumbent must be able to read and comprehend written instructions and safety regulations governing the performance of job duties, and must be able to interpret and apply instructions and diagrams contained in the operator's manuals for landscape and grounds equipment. Good writing skills and basic computer skills are required to maintain service records and maintenance logs and to prepare supply orders. Must have the ability to familiarize themselves with electronic communication devices for work orders and other communication. Operating knowledge of air and water cooled small diesel and gasoline engines, of arc and acetylene welding equipment, and small hand power tools used in the trade is required. A valid Michigan commercial driver's license (CDL, class "b" with airbrakes) is required. The incumbent must possess, or be able to obtain within 90 days of hire, certification from one or more small engine manufacturers. A minimum of five (5) years professional experience in small engine maintenance and repair is required.

In order to perform the essential functions of the job, the incumbent must be able to lift 50 lbs. to a height of four feet (48") with or without mechanical assistance and must be able to lift 300 lbs. to a height of two feet (24") with mechanical assistance. The incumbent must be able to maneuver 300 lbs. up to a height of four feet (48") with the use of inclined planes and other devices, in order to load walk-behind mowers onto a trailer for transportation to/from work sites. The incumbent must be able to hold and maneuver two-to-three pounds (2-3 lbs.) at waist height up to forty-five (45) minutes per day in order to sharpen mower blades. In order to change tires, the incumbent must be able to exert 100 lbs. of torque to a lug wrench a minimum of six (6) times per day.

The incumbent must be able to raise, lower, manipulate and maneuver equipment, parts, engines and hand and power tools. The incumbent must be able to test hydraulic couplers on mowing, tilling, seeding and other equipment; to operate and test walk-behind mowers; and to attach towing hooks to disabled equipment. The incumbent must be able to use screwdrivers, wrenches and other tools to dismantle, repair, adjust, reassemble, and otherwise maintain engines and equipment. The incumbent must be able to adjust timing screws and threaded rods to properly tune engines. Removing and replacing mower and tiller blades, repairing and maintaining undercarriages and axles, and other maintenance and repair functions require the incumbent to work at ground or floor level, and/or underneath equipment up to six (6) hours per day. Repairing and maintaining larger engines and mechanical devices require the incumbent to work while reaching down into equipment and engines for as much as six (6) hours per day. The incumbent must be able to descend to/ascend from floor or ground level as often as 200 times per day. The incumbent may be required to work on equipment held overhead by a hoist.

In order to obtain a valid Michigan commercial driver's license, the incumbent must possess 20/40

vision with or without corrective lenses. The incumbent must possess 20/20 vision with or without corrective lenses in order to fine tune engines and properly calibrate and set tolerances. The incumbent must be able to accurately distinguish colors in order to identify and accurately match electrical wires in ignitions, safety switches and other electronic components of equipment. The incumbent must have excellent auditory acuity with or without accommodation in order to identify appropriate and inappropriate engine sounds and the appropriate level of engine noise.

The incumbent must be able to tolerate exposure to gasoline and diesel fuel and fumes, motor oils and other petroleum products, grease, hydraulic and transmission fluids, antifreeze, graphite compounds, alcohol, ether, propane gas, mineral spirits and degreasing compounds. The incumbent must also be able to tolerate exposure to exhaust fumes and the full range of weather conditions, as the incumbent performs repairs both in the shop and at worksites in the field. The incumbent must be able to tolerate with some type of hearing protection, noise levels up to 90 decibels when testing engines indoors and operating grinders, and must be able to tolerate confined spaces in order to repair and maintain controls located in the cabs of skid loaders and heavier equipment.

A physical examination administered by the employer's designated physician is required to determine the incumbent's ability to perform the essential functions of the job with or without accommodation.