

# AUTOMOTIVE SERVICE TECHNOLOGY BASIC TOOL LIST

All automotive students are required to provide their own hand tool set. The following list of tools will serve as a guide for Automotive Service Technology students. These tools may be purchased from any vendor and substantial discounts are available to students. Ferris State University does not sell tools. The complete tool list is shown first (p1-p3). Because not all beginning students take the same automotive classes when starting the program, the second list indicates tool requirements by the individual course (p4-p7). Tools may be purchased over a period of time to match the course requirements. All tools including toolboxes and safety equipment must be purchased by third semester.

**NOTE: FIRST YEAR STUDENTS SHOULD FOLLOW INDIVIDUAL CLASS REQUIREMENTS. STUDENTS IN AUTO 114 (ENGINES) AND AUTO 115 (SUSPENSION-STEERING-ALIGNMENT SERVICES) SHOULD BRING ONLY THEIR TOP BOX. LARGE (BOTTOM) TOOLBOXES ARE NOT PERMITTED UNTIL THE STUDENT IS IN AUTO 200 OR 250 (SERVICE FLOOR).**

## Safety Equipment & Uniforms

- 1 Pair leather work shoes
- 4 Work uniforms (shirts – light blue / dark blue or dealership type) – Not required until third semester
- 2 Fender covers
- 1 Seat cover (can substitute with large beach towels)
- 1 Pair welding goggles
- 1 Pair welding gloves
- 1 Pair soft frame safety goggles
- 1 Pair safety glasses

## Complete Tool List

- 1 Pliers -wire stripper/crimper
- 1 Pocket Screw Driver
- 1 3/8" drive metric socket set 8mm-19mm (deep & shallow)
- 2 3/8" drive spark plug sockets-1-13/16" & 1-5/8" (Flex)
- 1 17 piece ½" drive socket set 12mm-24mm (deep & shallow)
- 1 ¼ drive socket set metric
- 1 Combination wrench set 5/16" to 1"
- 1 Metric combination wrench set 7mm to 21mm
- 1 Torque wrench 0 to 150 ft/lb capacity (prefer dial type)
- 1 Metric flare nut wrench set - 6 pieces -9mm to 21mm
- 1 Screwdriver set including 4 standard, 4 Phillips #1, 2, 3, 4
- 1 Metric Allen wrench set
- 1 Allen Wrench set (standard)

- 1 Jumper Wires (Assortment)
- 1 Package of Tee Pins
- 1 Golf Tees (Assortment)
- 1 Pliers- slip joint
- 1 Pliers- needle nose
- 1 Pliers- diagonal wire cutters
- 1 Pliers-9" channel lock type
- 1 flat feeler gauge set (must have .0015 gauge)
- 1 Pliers-6" vise grip
- 1 Pliers-10" vise grip
- 3 Ball peen hammers- 8 oz, 20 oz and 24 oz
- 1 Plastic tip hammer
- 1 Medium size dead blow
- 1 16" pry bar (Lady Slipper Type)
- 1 Brass drift-6"
- 1 Scratch awl
- 1 Gasket scraper
- 1 6" steel rule (1/32 & mm scale)
- 1 Tire gauge
- 1 Steel tape 12 ft. long
- 1 Small flash light
- 1 Hand operated vacuum pump with gauge
- 1 Battery terminal cleaner (top post)
- 1 Battery terminal puller
- 1 HEI sparkplug tester
- 1 Test light- circuit powered
- 1 DVOM (Fluke Series 87 Multimeter, Fluke Series 88 Multimeter or equivalent, minimum standard- should have frequency capabilities)
- 1 Brake spring hold down tool
- 2 Brake adjusting tools
- 1 Brake return spring removing and installing tool
- 1 Brake bleeder hose, (3/16" dia. clear plastic tubing)
- 1 set torx bits- 3/8" or 1/4" drive set (T27, 30,40,45,55 & GM 50) Torx sockets (E8, 10, 12, 14, &16)
- 1 Professional top tool chest-5 to 10 drawer
- 1 Professional roll away tool cabinet 3 to 7 drawer with lock

- 1 Wire wheel brush (to use with drill motor)
- 1 Wire spark plug gap gauge
- 1 Chisel holder
- 1 Punch set (5/16" center punch, ¼" starter punch, 3/16" & 5/16" pin punch)
- 1 Chisel set (3/8", ½" & ¾")
- 1 Anti freeze tester
- 1 3/8" drive in/lb torque wrench (0 to 50 in/lb)
- 1 External snap ring pliers
- 1 Internal snap ring pliers
- 1 Spark plug boot-removing pliers
- 1 Tire air chuck with aero fittings
- 1 Valve core removing tool
- 1 Hack saw
- 1 Air blow gun with rubber tip and aero fittings
- 4 Files, 2 flat, 1 - 3/8" x 10" round, 1 - 3 cornered 10"
- 2 File handles
- 1 Pump oil can
- 1 Wire brush
- 1 25' tape measure

#### **Optional Tool List**

- 1 Set 3/8" drive flex sockets (10mm to 17mm)
- 1 Pliers - 16" channellock type
- 1 Set 1/2" drive shallow six-point impact metric socket set (15mm to 22mm)
- 1 Wire terminal tool kit (TT 600 Snap-On or similar)
- 1 3/8" Air ratchet
- 1 ½" Impact wrench
- 1 Telescoping magnetic pick-up tool
- 1 O2 Sensor socket
- 1 3/4", 13/16", 19mm lug nut deepwell sockets
- 1 32 or 48 oz Hammer
- 1 Pipe wrench

## TOOL REQUIREMENTS BY COURSES

NOTE: SOME TOOLS ARE REQUIRED IN MORE THAN ONE COURSE

### AUTO 111 Manual Transmissions & Drivelines

Tools in lab - no student tools required

### AUTO 112 Automotive Brake Systems

Tools in lab - no student tools required

### AUTO 113 Automotive Electricity and Electronics

- 1 Screwdriver set including 4 standard, 4 Phillips, 4 Posi Drive #1, 2, 3, 4
- 1 Torx driver set
- 1 Pliers -wire stripper-crimper
- 1 Pair safety glasses
- 1 Test light - circuit powered
- 1 DVOM (Fluke Series 87 Multimeter or equivalent, minimum standard - should have frequency capabilities)
- 1 Pocket Screwdriver
- 1 Small Flash Light

### AUTO 114 Automotive Engines

NOTE: AUTO 114 students must have the complete list of tools before lab #4 or points will be deducted from their lab score. Students please do not bring your bottom box, only the top with a secure lock is required. Top boxes should have adequate amount of space to hold all of your tools.

- 1 Flat feeler gauge set (must include a .0015 gauge)
- 1 3/8" drive metric socket set 8mm - 19mm (deep & shallow)
- 2 3/8" drive spark plug Flex sockets - 5/8"
- 1 17 piece 1/2" drive socket set 12mm - 24mm (deep)
- 1 Metric combination wrench set 7mm to 22mm
- 1 Torque wrench 0 to 150 ft/lb capacity
- 1 Metric flare nut wrench set - 6 pieces - 9mm to 21mm
- 1 Screwdriver set including 4 standard, 4 Phillips #1, 2, 3, 4
- 1 Metric Allen wrench set
- 1 Pliers - slip joint
- 1 Pliers -needle nose
- 1 Pliers -diagonal
- 1 Pliers - 9" channel lock type
- 1 Pliers - 6" vise grip

- 1 Pliers - 10" vise grip
- 2 Ball peen hammers - 8 oz and 20 oz
- 1 Plastic tip hammer
- 1 Pair safety glasses
- 1 Gasket scraper
- 1 6" steel rule (1/32 & mm scale)
- 1 Piston ring compressor
- 1 16" Pry Bar (Lady Slipper Type)
- 1 Small flash light
- 1 Set torx bits - 3/8" drive set (T27, 30, 40, 45, 55 & GM50) Torx sockets (E8, 10, 12, 14, & 16)
- 1 Professional top tool chest - 5 to 10 drawer
- 1 1/4 drive socket set - metric
- 1 Pair leather work shoes
- 1 Torque Angle Gauge (Snap-On TA-360 Equivalent)

#### **AUTO 115 Suspension-Steering-Alignment Services**

- 1 3/8" drive metric socket set 8mm-19mm (deep & shallow)
- 1 17 piece 1/2" drive socket set 12mm-24mm (deep & shallow)
- 1 1/4 drive socket set metric
- 1 Combination wrench set 5/16" to 1"
- 1 Metric combination wrench set 7mm to 21mm
- 1 Torque wrench 0 to 150 ft/lb capacity (prefer dial type)
- 1 Screwdriver set including 4 standard, 4 Phillips #1, 2, 3, 4
- 1 Metric Allen wrench set
- 1 Allen Wrench set (standard)
- 1 Pliers- slip joint
- 1 Pliers- needle nose
- 1 Pliers- diagonal wire cutters
- 1 Pliers-9" channel lock type
- 1 Pliers-6" vise grip
- 1 Pliers-10" vise grip
- 3 Ball peen hammers- 8 oz, 20 oz and 24 oz
- 1 Plastic tip hammer
- 1 16" pry bar (Lady Slipper Type)
- 1 Brass drift-6"

- 1 Scratch awl
- 1 6" steel rule (1/32 & mm scale)
- 1 Tire gauge
- 1 Steel tape 12 ft. long
- 1 Professional top tool chest-5 to 10 drawer
- 1 Chisel holder
- 1 Punch set (5/16" center punch, ¼" starter punch, 3/16" & 5/16" pin punch)
- 1 Chisel set (3/8", ½" & ¾")
- 1 External snap ring pliers
- 1 Internal snap ring pliers
- 1 Tire air chuck with aero fittings
- 1 Valve core removing tool
- 1 Hack saw
- 1 Air blow gun with rubber tip and aero fittings
- 4 Files, 2 flat, 1 - 3/8" x 10" round, 1 - 3 cornered 10"
- 2 File handles
- 1 Wire brush
- 1 Set 3/8" drive flex sockets (10mm to 17mm)
- 1 Pliers - 16" channellock type
- 1 Set 1/2" drive shallow six-point impact metric socket set (15mm to 22mm)
- 1 3/8" Air ratchet
- 1 ½" Impact wrench
- 1 3/4", 13/16", 19mm lug nut deepwell sockets
- 1 25' tape measure

#### **AUTO 117 Electronic Fuel Management Systems**

- 1 1/4 drive socket set - regular and metric
- 1 Combination wrench set 3/8 " to 1"
- 1 Metric combination wrench set 4mm to 22mm
- 1 Screwdriver set including 4 standard, 4 Phillips, 4 Posi Drive #1, 2, 3, 4
- 1 Pliers -needle nose
- 1 Pair safety glasses
- 1 Small flash light
- 1 Hand operated vacuum pump with gauge
- 1 HEI sparkplug tester

- 1 Test light - circuit powered (high impedance)
- 1 DVOM (Fluke Series 87 Multimeter or equivalent, minimum standard - should have frequency capabilities)
- 1 18 piece 3/8" drive socket set (US deep-six point)
- 1 3/8" drive metric socket set 8mm - 19mm (deep & shallow)
- 2 3/8" drive spark plug sockets – 1-13/16" & 1-5/8"
- 1 Combination wrench set 3/8" to 1"
- 1 Metric combination wrench set 4mm to 22mm
- 1 Metric flare nut wrench set - 6 pieces - 9mm to 21 mm
- 1 Screwdriver set including 4 standard, 4 Phillips, 4 Posi Drive#1, 2, 3, 4
- 1 Metric Allen wrench set
- 1 Torx driver set
- 1 Pliers -needle nose
- 1 Pliers -diagonal
- 1 Pliers -wire stripper-crimper
- 1 Scratch awl
- 1 Pair safety glasses
- 1 Small flash light
- 1 Pocket Screw Driver
- 1 Hand operated vacuum pump with gauge
- 1 HEI sparkplug tester
- 1 Test light - circuit powered (high impedance)
- 1 DVOM (Fluke Series 87 Multimeter, Fluke Series 88 Multimeter or equivalent, minimum standard – should have frequency capabilities)
- 1 Set torx bits - 3/8" or 1/4" drive set (T27, 30,40,45,55 & GM50) Torx sockets (E8, 10, 12, 14, &16)