

## Small Engine & Equipment Repair - PROGRAM CURRICULUM

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<u>COURSE #</u>	<u>COURSE TITLE</u>	<u>LEC</u>	<u>LAB</u>	<u>SWE</u>	<u>SCH</u>
1 <sup>st</sup> Year	1 <sup>ST</sup> Semester				
<b>EDU/RSV 1312</b>	<b>Freshman Orientation</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>TEM 1114</b>	<b>Turf Equipment Mechanics I</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>3</b>
<b>TEM 1123</b>	<b>Turf Equipment Shop Management</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>4</b>
<b>TEM 1134</b>	<b>Cutting System Maintenance</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>
<b>TEM 1144</b>	<b>Turf Equipment Diagnostics I</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b><u>4</u></b>
	<b>TOTAL</b>				<b>17</b>

1st Year	2 <sup>nd</sup> Semester				
<b>TEM 1214</b>	<b>D/C Electrical Systems</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>
<b>TEM 1224</b>	<b>Turf Equipment Mechanics II</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>
<b>TEM 1234</b>	<b>Turf Equipment Diagnostics II</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>4</b>
<b>TEM 1243</b>	<b>Chasis Repair and Maintenance</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>3</b>
<b>CPT 1324</b>	<b>Survey of Microcomputer Applications</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>4</b>
	<b>OR</b>				
<b>BAD 2533</b>	<b>Microcomputer Applications\</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b><u>3</u></b>
	<b>TOTAL</b>				<b>19</b>

SUMMER SEMESTER

<b>EM 2923</b>	<b>Turf Equipment Management Supervised Work</b>	<b>0</b>	<b>0</b>	<b>400</b>	<b><u>3</u></b>
	<b>TOTAL</b>				<b>3</b>

COMPLETION AWARD: Technical Certificate (One Year) TOTAL HOURS **39**

2 <sup>nd</sup> Year	1 <sup>st</sup> Semester				
<b>ENG 1113</b>	<b>English Composition I</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	<b>Math/Science Elective</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	<b>Social/Behavioral Science Elective</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	<b>Fine Arts/Humanities Elective</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b><u>3</u></b>
	<b>TOTAL</b>				<b>12</b>

2 <sup>nd</sup> Year	2 <sup>nd</sup> Semester				
<b>SPT 1113</b>	<b>Oral Communications</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>
	<b>*Electives</b>				<b><u>12</u></b>
	<b>TOTAL</b>				<b>15</b>

**Electives**

**Student will select electives with Advisor's approval.**

COMPLETION AWARD: Associate in Applied Science Degree TOTAL HOURS **66**

ADDITIONAL LANDSCAPE RELATED COURSES

**HLT 2123      Green Industry Cost Estimating**

**HLT 2913      Special Problem in Landscape Management Technology**

**HLT 2933      Internship II in Landscape Management**

**Additional Graduation Requirement: Any student (first-time, transfer, and part-time) who begins at Hinds Fall 2007 and later will be required to take EDU/RSV 1312 Orientation Course in order to graduate from the College. Exception: Orientation credit (1 -3 hrs) transferred to Hinds from another college will satisfy our orientation requirement.**

# SMALL ENGINE & EQUIPMENT REPAIR COURSE DESCRIPTIONS

<b>TEM 1114</b>	<b>Turf Equipment Mechanics I</b>	<b>4 SH</b>
Basic study of principals of mechanic and preventive maintenance as applied to turf equipment, emphasizing small engine systems such as fuel, ignition and lubrication.		
<b>TEM 1123</b>	<b>Turf Equipment Shop Management</b>	<b>3 SH</b>
Elements of turf equipment shop management including shop safety and OSHA regulations, shop tools and equipment, design, overall shop maintenance and inventory control.		
<b>TEM 1134</b>	<b>Cutting System Maintenance</b>	<b>4 SH</b>
Classroom and laboratory instruction in the correct procedures used for proper cutting system performance. Instruction will be given in the areas of drive systems, sharpening grinding, adjustment, and replacement of rotary blades and mower reels.		
<b>TEM 1144</b>	<b>Turf Equipment Diagnostics I</b>	<b>4 SH</b>
A study of tools, fasteners, measuring devices, and fluids used in the diagnosis and repair of turf equipment systems.		
<b>TEM 1214</b>	<b>D/C Electrical Systems</b>	<b>4 SH</b>
Study and repair of D/C electrical systems used in the turf equipment industry, emphasis is placed on wire size demands, safety systems, charging systems, starting systems and lightening systems.		
<b>TEM 1224</b>	<b>Turf Equipment Mechanics II</b>	<b>4 SH</b>
(Prerequisite: TEM1114 & TEM1134) Continuation of study of basic mechanics as applied to turf equipment, emphasizing preventative maintenance and repair of multi-cylinder gasoline and diesel engine systems such as fuel, cooling and emissions. An additional unit will be taught on career opportunities.		
<b>TEM 1234</b>	<b>Turf Equipment Diagnostics II</b>	<b>4 SH</b>
(Prerequisite: TEM1134) The advanced study of the diagnosis of turf equipment problems with emphasis on bearings, seals, hydraulic brake and steering systems.		
<b>TEM 1243</b>	<b>Chassis Repair and Maintenance</b>	<b>3 SH</b>
Instruction in the proper use and safe operation of various types of chassis repair equipment used in the Turf Equipment Management Industry. This equipment includes oxy-acetylene cutting and welding, arc welding, painting, and grinding.		
<b>TEM 2923</b>	<b>Turf Equipment Management Supervised Work Experience</b>	<b>3 SH</b>
(Prerequisite: Minimum 12 CSH Turf Equipment Management Courses or consent of instructor) Supervised training in equipment and shop management at selected gold courses, equipment management shops, landscape maintenance companies, or equipment dealers' facilities. ( 400 hours minimum on the job work hours)		

# Small Engine & Equipment Repair Student Supplies List

## Safety Items

All the following items are to be used by all students every time you are in the shop area.

Item Name and Description

- Ear plugs
- Safety Glasses
- Work Shoes
- Mechanics Gloves
- Clothes suitable for the TEM shop environment

## Required Books (HCC Bookstore)

- Small Gas Engines
- Workbook for Small Gas Engines
- Other Books and Study Guides
- EETC Two Stroke Engine Study Guide
- EETC Four Stroke Engine Study Guide
- EETC Compact Diesel Engine Study Guide
- EETC Drivelines/Hydraulics/Hydrostatics Study Guide

These books can be ordered by visiting [www.eetc.org](http://www.eetc.org)

I will assist you in this if needed.

Due to technology changing on an almost daily basis other textbooks may be required at a later date. I will try to limit this as much as possible!!!!

## Tools Needed

In order to enter the workforce as a Small Engine and Equipment Technician you will be expected by potential employers to have a Tool Box and General Hand Tools. The below list is a starter set. Keep in mind that as your knowledge and finances grow this box will also need to grow. This set has been designed to assist you in purchasing a quality set of tools that can easily be added too... Matco Tool Co. has an excellent program for assisting students with purchases while enrolled in class. I have the information you need to receive a 52% discount from them. Snap On Tools also has a student program. Any brand high quality tool is welcome in the TEM Shop. However, All Tools must be inspected and approved by the Instructor prior to use. You would be advised to consult with the TEM instructor BEFORE making any tool purchase. Examples of other High Quality Tool companies are Mac Tool, Cornwall, Craftsman, and Husky. Many Auto Parts and Hardware stores (Home Depot, Lowes, Ace, etc...) also have quality tools. All these companies make quality tools and I will not endorse one above the other. The price depends on where and when tools are purchased. Some of the major tool companies offer discounts to students enrolled in Post Secondary mechanical programs. These prices vary according to the taste of the buyer.

The Matco Tools website is [www.matcotools.com/votech](http://www.matcotools.com/votech)

- ¼ dr. sockets 6 point std. and deep, metric 5 to 15 mm
- ¼ dr. sockets 6 point std. and deep, Sae 3/16 – 9/16
- ¼ dr. ratchet roughly 8 in. long
- ¼ dr. universal
- ¼ dr. extensions, 2, 4, 6, and 10 in. long
- Small box to hold them
- Most sets will include separate boxes for the SAE and Metric tools
- 3/8 dr. sockets SAE 5/16 – 7/8 in. std. and deep
- 3/8 dr. sockets Metric 10 – 19 mm std. and deep
- 3/8 ratchet 1 each 8in.regular and 12 in. flex
- Spark plug socket 1 each 5 /8, ¾ and 13/16
- 3/8 universal
- 3/8 extensions 1, 3, 6, and 10 in. long
- Small Box to hold them
- Most sets will include separate boxes for the SAE and Metric
- *I would also recommend universal sockets in SAE and metric*
- *And a 3/8 female to ¼ male adapter for sockets.*
- ½ dr. sockets 6 point std. and deep 7/16 – 1 ¼
- ½ dr. sockets 6 point STD and deep 10-24 mm
- Impact sockets just like above
- ½ dr. ratchet 1 ea. 10in.regular and 17 in. flex
- ½ dr. universal
- ½ dr. pull handle flex 24 in. long
- ½ dr. extensions 1 each 3, 5, and 10 in. long

- 1/4 in drive torque wrench, adjustable range 5 to 50 in. lbs. “click type”
- 3/8 dr. Torque wrench adjustable range 50 to 250 in. lbs “click type”
- ½ dr. Torque wrench adjustable range 25 to 250 ft. lbs “click type”
- Boxes or rails to hold them
- Combination wrenches ¼ to 1 1/2 in.
- Combination wrenches 5 to 24 MM
- Punch and chisel set (roughly 9 pieces)
- Pliers, 1 ea, tongue and groove, regular, needle nose and cutting.
- Adjustable wrenches 2 different sizes (crescent)
- Allen Wrenches 1.5 – 10 mm
- Allen Wrenches .028 – 3/8 in.
- Screwdrivers: 4 different sizes Slotted and 4 different size Phillips
- Torx drivers: Socket drivers, short arm and/or screwdriver style, your choice all have different advantages.
- Gasket scrapers
- 16oz. minimum Ball Pien Hammer
- 1.5 minimum Brass hammer
- Soft face hammer
- ½ dr. air impact minimum of 600 lbs. torque (can’t never have enough, get the best you can afford)
- 3/8 cordless impact wrench 14.4 volt minimum
- 14.4 volt minimum 3/8 cordless drill
- Be smart, get a drill and impact by the same manufacture.
- Convertible snap ring pliers 4 sizes (inside and outside)
- Digital Volt Ohm Meter
- Drill bit set I like the Dewalt Brand myself.
- Tool Cabinet, Get 1 large enough to hold all items above and more as you add to it.
- Flashlight
- Gloves 2 pair mechanics style
- Safety glasses 2 pair wraparound
- Work shoes, no sandals, etc...
- Work clothes, no shorts, etc...
- Hearing protection (Plugs or Muffs)
- 3/8 air ratchet (no junk)
- .Hacksaw with extra blades
- Feeler gauge .0015 to .035 ( the type that looks like a pocket knife will do)
- Wire Brush
- Extendable magnet
- 0 to 4 in. outside micrometers
- 0 to 6 in. digital caliper
- Inline Spark tester
- Valve spring compressors