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Goodheart-Willcox Publisher Correlation of <i>Small Gas Engines</i> ©2012 to Idaho Professional-Technical Education Course Small Engine Repair, Levels I-III TI 1201 (201101) / TI 1202 (201102) / TI 1203 (201103)		
OBJECTIVE		CORRELATING PAGES
Performance Standards		
1.	Basic workplace safety and first-aid skills: Shop rules; shop safety pledge form; shop safety inspection checklist; safe and orderly shop; fire extinguisher; flammable and toxic substances; heavy objects; class rules, safety, and SMENG101 affective competencies; safety terms; MSDS; fire safety; basic emergency situation first-aid measures; shop and classroom rules; basic work place safety knowledge command	15–21, 27, 31, 32 , 37, 38, 66, 67, 85, 95, 166, 207, 243, 257, 269, 274, 298, 301, 311, 314, 324, 338, 373–375, 377, 380, 382, 386, 390, 394, 397, 404, 410, 412, 423, 435, 439–440, 445, 470, 471, 473, 476
2.	Workplace ethics: Appropriate behavior; attendance; punctuality; honesty	485–487
3.	Hand tools: Basic hand tool usage; maintenance procedures; basic hand tools; common hand tools knowledge command; damaged threads using a thread repair kit	23–38, 61–64
4.	Common fasteners: Fastener terms; fasteners; correct fasteners; rethreading tapped holes; rethreading damaged fasteners; seized fasteners; common fastener knowledge; specific application nonthreaded fasteners; specific application threaded fasteners; seized nut and bolt removal methods; common fastener knowledge command	53–66
5.	Related math and measuring: Basic engine principle terms; energy and motion characteristics; calculating work, power, torque, engine displacement, compression ratio; measuring terms; measuring instruments; measuring steps; vernier caliper parts; outside micrometer parts; dial indicator parts; measuring knowledge command; dial indicator settings; plain micrometer settings; vernier caliper settings; vernier micrometer settings; dial indicator; plain micrometer; related math;	38–50, 95–106, 135, 141–149



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	vernier caliper; vernier micrometer; telescoping gauge; measuring	
6.	Parts management, inventory control, and service orders: Power product equipment reference material illustrations; power product equipment reference material graphs; power product equipment reference material diagrams; power product equipment reference material tables; reference material knowledge command; reference materials; reference material competence; engine design and identification competence; customer estimate; service order; computer parts system; microfiche system; physical inventory of small engine parts; parts management, inventory control, service order competence	109–130, 258–261
7.	Engine design and identification: Basic engine principles knowledge command; engine design and identification terms; engine designs types; various engine model codes; various 4-stroke engine information forms; various 2-stroke engine information forms; firing order factors; engine cooling system types; engine design and identification knowledge command; information form on accessories and major units found on an engine	95–106, 109–130, 231–238, 258, 261,
8.	Basic engine principles and design: Problems using the formula for work; problems using the formula for horsepower; problems using the formula for torque; problems using the formula for engine cubic inch displacement; problems using the formula for compression ratio	137–138, 142–146
9.	Basic engine principles of operation of a 2-stroke engine: 2-stroke engine terms; 2-stroke engine operations; 2-stroke engine components; multi-piece crankshaft parts; 2-stroke engine operation knowledge command; 2-cycle engine operation; 4-cycle engine operation; diagnosing engine problems; engine operation competence; engine condition; inspecting 2-stroke	99–105, 254–258, 311–313



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	engine; servicing 2-stroke engine; reassembling 2-stroke engine	
10.	Basic engine principles of operations of a 4-stroke engine: 4-stroke engine terms; 4-stroke engine operations; 4-stroke engine parts; valve timing and overlap theory; 4-stroke engine operation knowledge command; 2-cycle engine operation; 4-cycle engine operation; engine problems; engine operation competence; internal components; servicing 4-stroke valve assembly, servicing connecting rod, crankcase, cylinder, piston, rings; machining engine components; reassembling 4-stroke engine	95–105, 109–130, 311–326, 329–339, 341–355, 357–368, 500
11.	Overhaul four-stroke cycle engine: Engine overhaul terms; engine parts; various engine problems; engine overhaul knowledge command; engine overhaul competence; failure analysis; failure-analysis checklist; engine failure cause; failure analysis competence; four-stroke cycle engine; inspecting and servicing a cylinder, piston, rings, and connecting rod, crankshaft and crankcase assembly, 4-stroke engine, 4-stroke valve assembly, cylinder; reassembling a four-stroke cycle engine; disassembling 4stroke engine; internal components; connecting rod; crankcase; crankshaft; machining engine components; reassembling 4-stroke cycle engine	254–258, 311–326, 329–339, 341–355, 357–368, 500
12.	Overhaul two-stroke cycle engine: Engine overhaul terms; engine parts; various engine problems; engine overhaul knowledge command; engine overhaul competence; failure analysis; failure-analysis checklist; engine failure cause; failure analysis competence; disassembling, inspecting, servicing and reassembling a two-stroke cycle engine	311–326, 329–339, 341–355, 357–368
13.	Cooling systems: Air cooled parts; water cooled system parts; cooling system competence	231–238



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14.	Fuel and lubrication systems: Fuel system terms; fuel system components; fuel supply system components; fuel system supply functions; carburetor types; fuel filter types; fuel pump functions; air cleaner types; float carburetor parts; diaphragm carburetor parts; float system functions; choke system functions; high speed system functions; mid-range system functions; slow speed functions; butterfly throttle functions; power/economy functions; accelerator pump functions; slide valve throttle functions; cv functions; altitude compensation functions; diaphragm chamber metering functions; air cleaner functions; fuel injection components; fuel injection functions; fuel systems knowledge command; engine oil application charts; 2-cycle pre-mix fuel; engine oil and filter; crankcase breather assembly; lubrication systems competence; fuel-system designs; air filter; float-type carburetor; diaphragm-type carburetor; fuel pump; fuel filter; fuel pump; sediment bowl fuel strainer; fuel system competence; air-vane governor system; mechanical governor system; internal components of mechanical governor system; air-vane governor system; mechanical governor system; governor system competence	156–166, 173–192, 215–222, 225–226, 249–250, 280–281, 387, 469–470
15.	Governor systems: Air vane governor; external components of a mechanical governor with internal flyweights; internal components of a mechanical governor with internal flyweights	187–192, 280–281
16.	Basic electricity: Electrical circuit wiring diagrams; resistance using an ohm meter; continuity; circuit amperage; voltage; problems using ohm’s law formula; basic electrical schematic symbols; ohm meter to test for defective diodes; digital voltammeter; basic electrical principle competence; ignition system; breaker points and condenser; armature; electronic ignition; ignition timing; breaker	73–91, 195–208



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	points and condenser	
17.	Ignition system: Spark plugs; contact points and condensers; flywheel; coil power test; coil, condenser, armature, and flywheel magnets; solid state ignition system; ignition system competence; ignition timing using a dial indicator; testing condenser for leakage or short	195–208, 291–297
18.	Charging system: Alternator	305–308
19.	Starting system: Recoil starting system; DC electric starting system; starting system competence; flywheel-alternator charging system; starter; starter rewind spring; vertical pull starter; charging system competence	127–128, 423–426, 303–305
20.	Exhaust system: 2-stroke exhaust system; 4-stroke exhaust system; two-cycle exhaust system components; exhaust system competence	100, 105–106, 250
21.	Troubleshooting: Charging system; ignition system; fuel system; engine condition; engine compression; problems using the small engine troubleshooting charts; troubleshooting competence	254–261, 265–268, 284–292, 295–296, 302–303, 306–308, 312, , 383, 422, 454, 498–499