**Small Engines: Syllabus**

# Unit 1: Shop Safety

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| * Attire, Tool use, Fuels, Storage
* Fire safety
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# Unit 2: Basic Tools and Engine Tools

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| * Hand Tool use and Identification
 | * Specialty tools
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# Unit 3: Fasteners and Hardware

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| * Fastener Types and Identification
* Springs, coils, retainers, keys
* Clearances and Feelers
 | * Tap, Die, Thread gauge uses
* Rulers, Calipers, Micrometers
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# Unit 4: Electrical

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| * Basic Circuits
* Using a Multimeter
 | * Measuring Volts, Amps, Ohms
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# Unit 5: Small Engine Basics and Components

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| * 2 stroke vs. 4 Stroke
* Engine parts & components
* Engine variations
 | * Part Identification
* Pistons, Rods, crankshafts, valves
* Reading Technical Diagrams & Repair docs
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# Unit 6: Fuel/ Air/ Spark/ Horsepower!!

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| * Fuel ratios and mixing
* Sparkplugs
* Gaskets and seals
 | * Calculating and understanding Horsepower
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# Unit 7: Carburetors

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| * Carburetor types and function
* Cleaning and repair
 | * High and Low fuel/air adjustments
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# Unit 8: Troubleshooting and Repair

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| * Common Problems
* How to troubleshoot starting problems
 | * Gasket repair
* Ordering Parts
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# Unit 9: Special Projects

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| * Equipment Repair (family/friends)
* Personal project: lawnmower bike, go-kart, custom machine
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