



LASSEN COMMUNITY COLLEGE NRA SUMMER PROGRAM

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WELCOME!

Lassen Community College's Gunsmithing Program has been providing prepared, quality gunsmiths to the industry since the program's foundation in 1945 and is the oldest gunsmithing school in the United States. As an NRA affiliated Gunsmithing school, we also offer one and two week NRA Short Term Summer Gunsmithing Courses. Courses are offered in Basic Machine Shop, Barreling, specific firearms platforms, Law Enforcement Armorers Schools, engraving, knife making, and metal finishes.

Lassen Community College is located in Susanville, a small mountain town in northeastern California. Outdoor activities are abundant, with Sierra Nevada Mountains to the south, Cascade Range to the north, Lassen and Plumas National Forests to the west and high desert country to the east. There are numerous streams and lakes available for fishing and boating, including the renowned Eagle Lake, only 20 miles away.

Finally, it is often quite warm this time of year, so you may want to bring a fan with you. You may want to bring a clamp on a crookneck shop lamp for better illumination on close-up work. We are looking forward to an enjoyable and productive experience in the classroom and the shop.

LIVE AMMUNITION IS NOT PERMITTED IN THE CLASSROOM OR LAB

If you need to bring live ammunition for your firearms for the purpose of test firing, the ammunition shall be left in your vehicle until arrangements are made with your instructor for storage.

ANIMAL POLICY

No animals are allowed on campus with the exception of service dogs.

DORMS

Dorms are available for rent during the summer, for information about staying in the dorms, please contact the Housing Office at 530-257-6181 Ext.8879.

TOOL SOURCES

Brownells	800-741-0015	www.brownells.com
Midway	800-243-3220	www.midwayusa.com
MSC	800-645-7270	www.mscdirect.com
Modoc Steel	530-233-2655	(local steel supplier)

GSS 51.01 STOCK INLETTING

CLASS PROSPECTUS

- Tools
- Inletting Techniques
- Proper fit of different types of actions and barrels to stocks and forends.
- Inletting and installation of stock furniture

REQUIRED

Inletting Project—

- Barrel/action and a pre-carved stock OR
- Dakota type 'A' skeleton grip cap (Brownells #359-102-001) OR
- Dakota #1 two screw sling swivel bases (Brow.#359-111-001) OR
- Other projects with prior approval

REQUIRED TOOLS

- Prussian Blue (NAPA auto parts, maybe Brownell's)
- Rawhide Mallet #3 (Brown. #672-196-003)—OR--
- Softhead carvers mallet (Woodcraft #13T41 or #141039)
- Jerry Fisher inletting scraper—small (Brown.#310-150-001)
- Inletting guide screws and stockmakers handscrews if necessary for your project.
- Straight carving chisel, double bevel= #1 sweepX 8mm wide. Alternative =#1sweepx 10mm or a single bevel tool and we will grind it.
- Gouge = #8 sweep x 10mm. Alternatives = a 7mm wide gouge or a Fishtail gouge #8x10mm
- Gouge = #9 sweep x 5mm. Alts. = #9x4mm or #9x7mm or #9x5mm Fishtail

OPTIONAL TOOLS (Highly Recommended)

- Spoon Chisel = #1 sweep(straight) x 3mm. Alternate = #1 x 6mm.
- Skew chisel = 6mm wide.
- Gouge = #5 sweep x 10mm
- Beveled Edge Bench Chisel = 1" wide or at Sears, Ace, or Tru-Value Hardware stores.
- 4" or 6" sharpening stone, white Arkansas or a med. Grit
- I strongly recommend a work light. Also, an Optivisor if necessary for vision.

* You are not required to use the brand name chisel and gouges listed, but the sizes are required.

RECOMMENDED SUPPLIERS

- Brownells (800)741-0015
- Woodcraft (800)225-1153 (Pfeil-SwissMade Chisels)
- Wood Carvers Supply (800)284-6229 (Mastercarver or Lamp Brand Chisels)
- Mastercarver chisels are the best value.
- Western Gunstock Mfg. (831)688-5884
- Richards Microfit (818)767-6097

I recommend straight grained English Walnut. Claro ok. No laminate.

GSS 77 ACCURIZING M1-M1A FOR COMPETITION

TOOL AND MATERIAL LIST

- Rifle cleaning kit: rod, brushes, patches, cleaner, lube, etc.
- Epoxy bedding compound: Devcon or Acraglas gel, (Steel Bed preferred)
- Padlock
- Rags for shop clean up
- 3-ring binder for handouts – 2 inch thick
- Denatured alcohol, lacquer thinner or acetone (for parts cleaning) no hydrocarbon cleaners are allowed in the shop
- Epoxy release agent – paintable type or aerosol type are best or Johnson's paste wax
- Artificial flower clay (used during stock bedding) available at K-Mart in flower display area.
- 1/8 inch diameter burrs (for inletting work) interrupted cut on burr is best
- Q-tips – long wooden shank type work best
- Dremel or Foredom tool
- Small smooth file (for stock bedding clean up)
- Small paint brush (for applying release agent)
- Lubricating grease (lithium grease is excellent)
- Standard gunsmithing tools: screwdrivers, pin punches, small hammers, vise jaw pads (leather, rubber, wood), etc.
- National Match rear aperture (optional)
- National Match windage knob from Springfield Inc. (optional)
- 3/4 inch or 1 inch putty knife
- 1/8 inch carbide drill bit
- #7 taper reamer for M1-M1A flash suppressor
- Eze Lap diamond hone (fine) from Brownells (IMPORTANT)
- Blue Loctite - small bottle
- .650 inch diameter straight hand reamer
- Small 3//8 inch x 4 inch long flat mill smooth file with safe edge (for sight work)
- Sandpaper (for stock refinishing) 120-220 grit
- 1 inch sandpaper (crocus cloth) 400, 600, and crocus cloth
- Spray stock finish – i.e., Polyurethane varnish, Birchwood Casey's Tufsheen, etc.

NOTE: Please bring any spare M1/M1A parts you may have. Someone may need them and the school has very few parts available.

GSS 79 Basic Correctional Armorer School

Required Firearms

- S&W Revolver
- Remington 870 shotgun
- Ruger Mini-14 rifle

Please bring at least one of each of the above firearms and if you have more that are in need of repair bring them as well.

Recommended Tool and Materials List

- Toolchest or Toolbox with lock
 - Ballpeen hammer- 2 or 4 oz.
 - Revolver Fitter's bench block
 - India stone 1/2 X 6 inches. Med (quality)
 - India stone 1/2 x 6 inches. Fine (optional)
 - Hard Arkansas 1/2 X 6 inches (optional)
 - Pin punches 1/16 to 1/4 inch by 1/16 inch increments
 - Dial Caliper- 0-6 inch.
 - Screwdrivers- 6 assorted sizes one piece (Craftsmen or Stanley 100)
 - Rawhide mallet – 8oz or heavier
 - Drift punch - brass
 - 1” paint brush
 - Safety glasses
 - Stainless steel toothbrush
 - File cleaner
 - File # 0 cut 8 inch
 - File #2 cut 8 inch
 - File round #4 cut 6 inch
 - S&W rebound tool
 - Breakfree
 - “44-40” cold blue
 - Toothpicks
 - Q-tips
 - Shop apron (optional)
 - File handles to fit files you bring
 - Dremel or Foredom tool with attachments (optional)
 - Optivisor- (optional- very useful)
 - Brownells Remington 870 Armorer’s Kit
 - Brownells S & W Revolver Armorer’s Kit (optional)
 - Ruger Factory Mini-14 gauge Kit
 - Piece of carpet for bench pad
 - Clamp on desk lamp
 - Extra padlocks for firearms lockers
- (CONTINUED ON PAGE 7)

- Dummy ammo for your firearms
- Any parts you need to replace in your firearms
- Feeler gauge set
- 12 gauge headspace gauge (optional)

Any other gauges, fixtures or special tools your institution has for the firearms you bring!

Each student should have at least one each of the following new parts to fit S&W revolvers: cylinder stop, sear and hand. Please bring the correct size to fit your revolver frame size.

GSS 82 GENERAL GUNSMITHING

FIREARMS- Bring all firearms from the list below that are available to you:

- Remington 870, 1100 or 11-87 (mandatory)
- Smith and Wesson revolver (mandatory)
- Colt type 1911 autopistol (mandatory)
- Colt double action revolver, Python, Official police, etc. (except Trooper III or V)

*Note: It is to your advantage to bring as many malfunctioning guns that you can.

TOOLS-

- 2-4 oz. ballpeen hammer
- Dial caliper, 0-6 inch
- Pin punch set
- Needle nose pliers
- Screwdrivers (minimum of 6 high quality such as Stanley 100 or Craftsman)
- Safety Glasses
- 2 Padlocks
- Bench Block
- Small Paint Brush
- Gun cleaning materials
- 6" flat bastard file with handle
- 8" mill smooth file with handle
- 6" or 8" three corner file with handle
- Honing stones, assorted shapes and sizes
- 6" steel rule
- Break-free or equivalent
- Cold blue
- Toothpicks
- Q-tips
- Any specific disassembly tools that may be needed for your firearms
- Dummy Ammunition for each firearm
- Dark sunglasses or welding goggles
- Lockable tool box for benchtop

Optional:

- Dremel or Foredom tool with attachments
- Optivisor or Bench Light

GSS 87 LEAS/DFR DOUBLE ACTION AUTO PISTOLS

FIREARMS

- S&W Autopistol (any 39 or 59 series)
- Sig Sauer Autopistol (P220-P226 style)
- Beretta Autopistol (92 type)
- Glock Autopistol
- Ruger Autopistol
- HK USP
- Extra Magazines for your pistols

*Note: It is to your advantage to bring as many malfunctioning guns that you can.

TOOLS-

- 2-4 oz. ballpeen hammer
- Dial caliper, 0-6 inch or 1 inch micrometer
- 6" or 8" three corner file with handle
- Set of needle files
- Pliers, needle nose
- Pliers, parallel smooth jaw
- #8 Briley Crochet hook
- Cold Blue
- Cotton Swabs
- Degreaser (denatured alcohol or mineral spirits)
- Medium and fine emory paper
- Minimum 5 shop rags
- Pin punch set
- Screwdrivers
- Safety Glasses
- 2 Padlocks
- Roll pin punch set
- Bench Block
- India Stone ½ X 6 fine
- India Stone ½ X 6 medium
- Rawhide mallet
- Brass Drift Punch
- Stainless Steel toothbrush
- Gun cleaning materials
- Dummy Ammunition for each firearm
- Any additional tools you may have in your Armory or toolkit.
- Lockable tool box
- Padlocks for storage lockers
- Bench mat

(CONTINUED ON PAGE 10)

Optional:

- Factory Armorers kits
- Dremel or Foredom tool with attachments
- Optivisor or Bench Light

GSS 88 LEAS/DFR SINGLE ACTION AUTO PISTOLS

FIREARMS

Colt Single Action Autopistol or other direct copy of the 1911 A1 type. We will also be spending time on the Browning High Power so if you have one bring it as well. Bring as many of these styles of pistols that you have, preferably ones that are malfunctioning. While we will not be fitting custom parts as part of this class, you are free to bring them and fit them as time allows. The correct and reliable fit and function of factory parts is the focus of this class. Bring magazines for the specific guns.

TOOL LIST

- Toolbox you can lock
- Notebook and pen
- 6 "or 8" flat bastard file
- 6" or 8" 3 Corner file
- 1/8 " chain saw file
- 3/16" chain saw file
- Set of needle files
- Set of pin punches
- 2 oz or 4 oz ballpeen hammer
- Screwdrivers to fit your gun
- India or Arkansas stones 1/2"x 1/2"x 6" both medium and fine
- Dremel or Foredom tools if you have them
- Safety glasses
- Pliers both needle nose and smooth jawed
- Test ammo for your gun
- Medium and fine Emory paper
- Padlocks
- Dial caliper 6"
- Gun cleaning kit
- Degreaser (denatured alcohol or mineral spirits)
- Bench mat
- Bench block
- Clamp on bench light with extra bulbs (optional)
- Extra magazines for your pistol
- Ear muffs
- Dummy ammo for function testing
- Breakfree lube or any lube you use on your firearms
- Toothpicks
- Q-tips
- 44/40 cold blue
- 5 shop rags
- 2-3 Oversize link (available from Brownells)
- Any part that you need instruction in fitting correctly
(CONTINUED ON PAGE 12)

- Soft weighted mallet
- Feeler gauge set Brownells #606 950 252AN
- Unsharpened pencil eraser

GSS 89 LEAS Full Autos

The Susanville Police Chief will store any class II/III upon request for visiting Law Enforcement Agencies. Our local sheriff will also allow you to keep them under your direct supervision if you wish. Additionally, we have individual lockers for your firearms so bring an extra padlock or two.

SUGGESTED FIREARMS

H&K MP5- all variations including suppressed

M-16- all variations

Ruger AC- series Mini-14's "Optional"

For law enforcement ONLY! Any full-auto you may wish to learn more about, any illegal full autos or suppressors that you need to familiarize yourselves with.

MAGS & AMMO ARE A MUST!

TOOL LIST

- Tool box you can lock
 - Smooth jawed pliers
 - Screwdrivers – high quality one piece (no two piece screwdriver sets)
 - Assorted files with handles
 - Needle file set
 - 2 or 4 oz ballpeen hammer
 - Pin punch set
 - Dremel or freedom tool (foot rheostat extremely helpful)
 - Assorted grinding stones and small burrs "optional"
 - Dial caliper
 - Honing stones ½ x ½ x 6" medium and fine
 - Bench mat or square of carpeting
 - Gun cleaning equipment
 - Breakfree or Gun oil
 - Pliers – (Needle nose, standard and smooth jawed)
 - Dummy rounds in calibers for your firearms
 - Safety glasses
 - Ear Muffs or plugs
 - Assorted emory paper (150, 220, 320 grit)
 - Shop rags
 - Bench light, clamp on, with exterior light bulbs
 - Cold blue
 - Degreaser (denatured alcohol or mineral spirits)
 - Round toothpicks
 - Cotton Swabs and/or pipe cleaners
 - All magazines used in your firearms or that have had any problems in your firearms
 - Any other appropriate tools – specific for the firearms you bring
 - Padlocks – for the gun lockers
- (CONTINUED ON PAGE 14)

- Ammo for the firearms you bring (You will need a minimum of 300 rounds for the firearm you want to take to the range for a final)
- Any full auto or semi-auto firearms you want to work on or study
- Any extra parts that you feel you will need instruction as to the correct fitting procedures
- Armorer kits for M-16 style and HK style rifles if you have them
- .223 and 5.56 headspace gauges

GSS 93 LEAS DFR Counter- Sniper Rifles

FIREARMS TO BRING (MANDATORY)

One bolt action rifle to bed for accuracy (bring more if you want) Bring only commercial rifle, no military bolt action please.

Test fire target at 100 yards of at least five rounds. Shoot with the most accurate load you have for that rifle. Bring at least ten rounds of the same exact load to test fire your rifle with after accurizing. Bring all necessary range equipment.

TOOL LIST

- Padlocks for the gun lockers
- Tool box that lock
- Pin punch set
- 2 oz or 4 oz ballpeen hammer
- Needle file
- Honing stones assorted shaper and sizes
- Plastic hammer
- Dial caliper
- Gun cleaning kit
- Breakfree lubricant
- Degreaser (denatured alcohol or mineral spirits)
- 44/40 cold blue
- Blue loctite
- Bench type rifle vise
- Bench mat or carpet square
- Clamp on bench light with extra light bulbs
- Magnifying glasses or optivisor if needed
- Wood chisels –various shapes for working on your stock
- Barrel channel tools – 9/16” and 3/4”
- Stock scraper
- Single blade razor blades
- Sand paper (150, 220, 320, and 400 grit)
- Safety glasses
- Ear plugs
- Scope base
- Scope and rings to mount on your rifle
- Acraglas
- Dust masks
- 5 Shop rages
- Allen wrench set
- Torx wrench set
- Dremel or Foredom with bits for wood or fiberglass

GSS 95 Basic Law Enforcement Armorer School

Required Firearms

One or more S&W semi-auto pistols (39-59 series)
One or more Colt auto pistols (1911 Style)
One or more Remington 870 shotguns
One J Frame S&W revolver
AR-15 or M4 rifle

Each student needs to bring the following parts

Sear safety lever S & W double action pistol (hammer release lever)
Ejector spring, Remington 870
Ejector, Remington 870
Ejector rivets, Remington 870

Recommended Tool and Materials List

- Notebook and pen
 - Tool chest or tool box
 - Bench block
 - Ballpeen hammer (2" or 4" oz)
 - India stone 1/2 X 6 fine
 - India stone 1/2 X 6 med (quality)
 - Hard Arkansas 1/2 X 6
 - Pin punches 1/16 -1/4" by 1/16
 - Small spring pin punches (roll pin punches)
 - Dial caliper 0-6"
 - Screwdrivers to fit your guns
 - Rawhide mallet
 - Drift punch brass
 - Small paint brush
 - Safety glasses
 - Stainless steel toothbrush
 - Gun cleaning material
 - File cleaner
 - File, # 0 cut 8" inches
 - File, # 2 cut 8" inches
 - File, barrette, # 1 cut 4" inches
 - File, round, # 4 cut 6" inches
 - S&W tool kit (optional)
 - Shop apron (optional)
 - File handles
 - Dremel tool or Foredom tool with attachments (optional)
 - Remington stock bolt wrench (optional)
- (CONTINUED ON PAGE 17)

- Remington forend nut wrench (optional)
- Remington ejector and spring riveting tool
- Remington shell latch staking tool
- Optivisor (optional)
- Bench light (optional)
- Extra padlock
- Feel gauge set Brownells #606 950 252AN
- Any AR-15 specific tools you might have
- 5.56 or .223 Remington “go, no go” and “field” headspace gauges

**Bring any and all of the firearms tools and gauges that you may have. We are especially interested in anything that you are not sure of its use.

GSS 98.02 COWBOY ACTION LONG GUNS

This class will deal with the lever action rifles, Winchester 97 shotgun and the double shotguns commonly seen in use in Cowboy Action Shooting. You will be spending 50 hours working on these long guns so I would suggest that you bring a quality rifle or shotgun to invest this time in. We will have TIG welding capabilities for repair of parts but if you have spare parts for your long guns please bring them. I would suggest that you not bring basket cases since you may not have time to complete them and will be frustrated.

The shop has all of the specialized tools you'll need as well as a Foredom tool. If you have a Foredom or Dremel tool, bring it along, as having one at your bench will be a real time saver. Bring your own bits.

Safety glasses with side shields are mandatory!

RECOMMENDED FIREARMS TO BRING

- A good quality Lever Action pistol caliber rifle (Marlin, Winchester or Clone)
- Winchester 97
- Shotguns and Double Shotguns used in Cowboy action shooting

TOOL LIST

- Notebook and pen
- Tool box that can be locked
- Pin punch set
- 2 oz or 4 oz ballpeen hammer
- Needle nose pliers
- 6 High quality screwdrivers assorted sizes (do not bring any two piece sets. Bring any old or damaged screwdrivers you have to make other tools and one short handled screwdriver.
- 8 Inch flat bastard file
- 8 Inch smooth file
- Three corner file 6" or 8"
- 1/8 inch chain saw file
- 3/16 inch chain saw file
- Half round file-fine
- Needle files assorted shapes, diamond files could be useful
- Honing stones assorted shapes and sizes
- Plastic hammer- 1/2 lb.
- 6 Inch steel rule
- Dial caliper
- Gun cleaning kit
- Degreaser (denatured alcohol or mineral spirits)
- Breakfree lubricant
- 44/40 Cold blue
- Toothpick

(CONTINUED ON PAGE 19)

- Q-Tips
- Pipe cleaners
- Bench mat
- Clamp on light and extra light bulbs
- Sand paper (150, 220, 320, and 400 grit)
- Bench block
- Safety glasses and welding goggles or dark sunglasses
- 1 Inch Paint brush
- Padlock for gun locker
- Machine shop tools for part fabrication if you have machine shop skills (lathe and mill) bits and measuring equipment

GSS 98.03 COWBOY ACTION SHORT GUNS

FIREARMS

A good quality single action revolver Colt, or other Colt clone or Ruger

TOOLS

- Notebook and pen
- Tool box that you can lock
- Pin punch set
- 2oz or 4oz ballpeen hammer
- Needle nose pliers
- 6 High quality screwdrivers assorted sizes. (do not bring any two-piece Brownell's or Chapman sets) also bring any old or damaged screwdrivers you may have, to form into other tools. Please bring one short handled screwdriver.
- 8" Flat bastard file
- 8" Mill smooth file
- Three corner file 6" or 8"
- 1/8 Chain saw file
- Half round file- fine
- Needle files- assorted shapes
- Honing stones- assorted shapes and sizes
- Weighted rubber or rawhide mallet
- 6" Steel rule
- Dial caliper
- Gun cleaning kit for your specific firearms with solvent
- Degreaser (denatured alcohol or mineral spirits)
- Breakfree lubricant
- 44/40 Cold blue
- Toothpicks
- Q- tips
- Pipe cleaners
- Bench mat
- Clamp on bench light and extra light bulbs
- Sand paper- 150, 220, 320, and 400 grit
- Bench block
- Safety glasses and welding goggles or dark sunglasses
- 1" Quality paint brush
- Padlock for gun locker
- Machine shop tools for part fabrication if you have machine shop skills (lathe and mill)
- Feeler gauge set Brownells #606 950 252AN
- Unfired, unprimed cases to be used as headspace gauges

GSS 98.05 DFR SMITH AND WESSON REVOLVER

The first two sections list tools and parts that *are required* for your successful participation in, and completion, of this class. Third section items are optional, but recommended.

TOOLS

- Safety glasses or face shield
- Hearing protection
- ½" X ½" X 6" Fine India stone.
- Knife edge Fine India or Hard Arkansas stone
- 4" Barrette file (#1 or #2 cut)
- Needle file set
- Yoke alignment tool(s) correct for frame size of your revolver(s)
- Yoke stretching tool
- Range rod with correct caliber head(s) for your revolver(s)
- Feeler gage set or Go/No-Go Front and Rear gage sets.
- Hollow ground screw drivers correct for your revolver(s)
- #1 Phillips screwdriver
- Cup tip punch set
- 4 oz. Or 6 oz. ball peen hammer
- Leather mallet or other soft face hammer
- Empty cartridge cases
- Inert (dummy) rounds (MUST be inspected/approved by instructor at beginning of class)
- Lubricant
- Cleaning rod & patches
- Pin punch set

PARTS :

Hand, cylinder stop, and sear – new parts to be fitted by you to your project
Any other replacement parts needed for your project.

Items below are optional, but recommended

- Forcing cone reamer
- Forcing cone plug gage appropriate to caliber of your revolver(s)
- Barrel stub facing tool and pilot(s) appropriate to your revolvers' frame size & caliber
- ½"X ½"X 6" Hard Arkansas stone
- 400 grit sandpaper or emery cloth (1 piece)
- Green Magic Cloth (1 piece)
- Trigger scale or trigger weights (Trigger weights are available in the classroom)
- Masking tape
- Short piece of 5/8" or 3/4" tool steel (O-1, W-1, 4140 etc.) to make replacement roller for tubing cutter.
- Any other tools or special fixtures you believe may be necessary to work on your revolver(s), or that you may wish to share with the class. New ideas are solicited and are *always* welcome.

GSS 98.06 LEAS/DESIGN, FUNCTION AND REPAIR OF LONG GUNS

FIREARMS- Bring all firearms from the list below that are available to you:

- Remington 870 (mandatory)
- Mossberg 500
- Benelli Super 90
- Ruger Mini 14/Mini Thirty
- Colt AR-15 type rifle
- Extra Magazines for the rifles

*Note: It is to your advantage to bring as many malfunctioning long guns that you can.

TOOLS-

- 2-4 oz. ballpeen hammer
- Dial caliper, 0-6 inch or 1 inch micrometer
- Pin punch set
- Assorted files
- Screwdrivers
- Medium and fine emery paper or sandpaper 220 or 330 grit
- Safety Glasses
- 2 Padlocks
- Ear muffs or plugs
- Remington shell latch staking tool
- Roll pin punch set
- AR-15 receiver block set
- AR-15 combination wrench
- .223 or 5.56 headspace gauges (GO, NO-GO, FIELD)
- 3/8 Drive ratchet with 6" extension and 13mm socket
- Dummy Ammunition for each firearm
- Any additional tools you may have in your Armory or toolkit.

GSS 98.09 COLOR CASE HARDENING

During this one week seminar, we plan to cover the fundamentals of the charcoal method of Color Case Hardening. The most dangerous aspect of this method is that you can easily get burned during the process, so safety is a primary concern during the class. Therefore, long sleeve shirts, long pants, and shoes or boots (no sandals), and safety glasses are required. Some form of head cover (hat) should be worn.

Due to the time involved in the process; waiting for furnaces to heat up and cool down, size of crucibles, etc., We would recommend that you bring one action ready to be colored (320 finish) and something else to work on while waiting (perhaps a 2nd action or a group of parts). After every student has colored one action/set of parts, then, and only then, will we begin doing the 2nd or more actions/parts. Please do not be offended if you not are able to do multiples, our goal is to make everyone successful in coloring while they are here. As time and equipment permits, we will keep running all week.

Provided:

- Furnace
- Charcoal & parts packing container (crucible)
- Tongs

MATERIALS AND EQUIPMENT:

- White Cotton Gloves
- 1 can acetone
- 1 roll paper towels
- 5 pair latex gloves
- 150, 220, 320, 400, 600 grain sand paper. (5 sheets each)
- 1/4 “, 3/8”, 1/2” wood dowel polishing mandrels
- 1ea. hard sanding block
- 1 roll 1” masking tape
- 1 notebook and writing instrument
- 1 gun polished (to begin on Monday) – student’s responsibility
- 1 or more other guns to work on.
- safety glasses (AZSI Z87)
- face shield (recommended but not mandatory)
- welding gauntlet gloves
- welding or ball cap

This process is time consuming; ovens take time to heat up. You can color case as many items as you would like, provided we have enough time. We will not color case oil hardening steel, so leave your Winchester Model’s 94 and 95 and rifle barrels at home.

(CONTINUED PAGE 24)

NOTE-Any metal preparation you can do before coming will save time during class. A 320 finish will be more than adequate but by no means necessary.

As instructors learn as much as students do for every class, we, as time permits, will experiment with the variables of color case hardening. I hope to try different quench times and temps, and possibly using minerals in the quench tanks, to enhance or emphasize certain colors.

GSS 112 MACHINE SHOP FOR GUNSMITHS

THIS COURSE IS DESIGNED AS AN INTRODUCTION TO MACHINE SHOP TOOLS. PRIMARY EMPHASIS WILL BE PLACED ON GRINDING, LATHE OPERATION, AND MILLING MACHINE OPERATION. IF YOU ARE EXPERIENCED OR HAVE TAKEN THIS COURSE PREVIOUSLY, YOU MAY CHOOSE TO COMPLETE PROJECTS OUTSIDE OF THE BASIC COURSE ONLY WITH INSTRUCTOR APPROVAL.

REQUIRED TOOLS:

- 0-6" Dial Caliper
- 6" metal rule
- 2-4 oz. ball peen hammer
- 1 can layout fluid (Dykem)
- 10" mill file, fine or second cut, WITH HANDLE
- Scribe
- Steel protractor (machinists, not combination)
- Hacksaw with blades
- 4 – 5/16" square HSS lathe tool bits
- #3 Center drill
- Thread pitch gauge
- Calculator
- Complete drill index (fractional, numerical and lettered)
- 60° center gauge
- Thread cutting oil
- Small paint brush
- Shop apron (optional)
- Small oil can
- Tap set to 1/2"
- Pliers or vise grips
- 6" or 8" adjustable wrench
- Assorted screwdrivers
- Small honing stone
- Complete set of open end wrenches to 1"
- Complete set of allen wrenches (SAE and Metric)
- Minimum of 5 shop rags
- 2 padlocks for lockers

GSS 114 BASIC RIFLE BARRELING

TOOL LIST

- Dial caliper
- Depth micrometer set 0-2" (optional)
- Feeler gauge, tapered leaf
- Cleaning rod and patches
- Lathe tool bits (two 5/16" HSS tool bits)
- 6" steel rule
- 60 Degree center gauge
- # 3 or # 4 center drill
- A few assorted open end wrenches (7/16, 9/16, 1/2, 5/8,) or large adjustable wrench
- Some live ammo for the caliber of you rifle
- Safety glasses with side shield
- A receiver mandrel and bolt mandrel for your receiver (optional)
- Protractor
- Small calculator
- Allen wrench set to 3/8"
- Needle file set
- 5 – Shop rags
- 2" paint brush
- Emery strips, 1/2" wide, at least 3' feet long or sandpaper (240, 320, & 400 grit)
- 8"-10" smooth mill file with handle
- Action and Barrel to install

MATERIALS LIST

You should bring at least one pre-turned barrel blank (select a contour that you want) and a bolt-action receiver. Just in case you finish before the five-day class is over you may wish to bring another barrel and action to get started on. Please bring only bolt-action receivers for barreling.

We will have you preparing the actions by facing off the front of the action to square it up as well as lapping the locking lugs and possibly welding and re-drilling the firing pin hole. We will then have you thread, chamber, headspace and crown your barrel. There should be sufficient time to polish and blue your barreled action as well.

The school has a small selection of the most common caliber's reamers, however we strongly suggest you check ahead of time (4 weeks minimum) what is here. Often our students simply wish to use their own reamer and headspace gauges in order to have identical chambers in several firearms. Please call if you have any questions.

GSS 117 GTAW WELDING FOR GUNSMITHS

During this two week night class you will learn different joint designs or common gun parts repair as well as tool fabrication. It will also cover the beginning of metallurgy commonly found in firearms, and how to determine what steel you are working with, and which type of filler rod to use. Metal prep and heat treat will also be discussed.

TOOL LIST

- Safety Glasses (ANZI Z87.1)
- Leather coat or heavy shirt
- 1/16" 2% Thoriated tungsten (red) (recommended)
- Welding helmet with #10 filter lens, or adjustable shade
- Leather Gloves (Tig)
- Stainless steel tooth brush
- Wire Cutters
- Needle nose pliers
- Dremmel with carbide burrs 1/8" – 3/16", any other gouging bits
- 1 or more 1/16" drill bit
- Pens and spiral notebook

GSS 119 ADVANCED RIFLE BARRELING

TOOL LIST

- Dial caliper
- Depth micrometer set 0-2"
- Feeler gauge, tapered leaf
- Cleaning rod and patches
- Lathe tool bits (two 5/16" HSS tool bits)
- 6" steel rule
- 60 Degree center gauge
- # 3 or # 4 center drill
- 10 inch flat file smooth cut
- File card cleaner
- A few assorted open end wrenches (7/16, 9/16, 1/2, 5/8,) or large adjustable crescent wrench
- Some live ammo for the caliber of you rifle
- Safety glasses with side shield
- A receiver mandrel and bolt mandrel for your receiver
- Protractor
- Small calculator
- Allen wrench set to 3/8"
- Needle file set
- 5 – Shop rags
- 2" paint brush
- Emery strips, 1/2" wide, at least 3' feet long (240, 320, & 400 grit)
- 8"-10" smooth mill file with handle
- Action and barrel to install

OPTIONAL TOOLS (BRING IF YOU HAVE THEM)

- Carbide tools bits (3/8" right and left cutting)
- Action wrenches for your actions
- Magnetic base dial indicator 0-1

MATERIALS LIST

You should bring at least one pre-turned barrel blank (select a contour that you want) and a bolt-action receiver. Just in case you finish before the five-day class is over you may wish to bring another barrel and action to get started on. Please bring only bolt-action receivers for barreling.

(CONTINUED ON PAGE 29)

We will have you preparing the actions by facing off the front of the action to square it up as well as lapping the locking lugs and possibly welding and re-drilling the firing pin hole. We will then have you thread, chamber, headspace and crown your barrel. There should be sufficient time to polish and blue your barreled action as well.

The school has a small selection of the most common caliber's reamers, however we strongly suggest you check ahead of time (4 weeks minimum) what is here. Often our students simply wish to use their own reamer and headspace gauges in order to have identical chambers in several firearms. Please call is you have any questions.

GSS 123 BASIC HARD METAL ENGRAVING

TOOLS & MATERIALS

- Safety Glasses
- Ngraver - Graver kit (includes 1 diamond graver, 1 chisel, 1 #12 liner, 1 HSS roundblank)
- Opti Visor #3 or #5
- Chasing Hammer 1 1/8" or 1 1/4" diameter
- 6 x 1/2" flexible steel ruler
- Ngraver – steel scribe
- Ngraver – set of steel dot punches, #1,2,&3
- Ngraver - #7 lining tool, standard bent
- Ngraver - #12 lining tool, standard bent (included in Graver Kit)
- Ngraver - #3 square steel Belgium style graver handles (3 ea.)
- Ngraver – 5% cobalt gravers, .085" x 2 1/2" (six pack) **OR** 1/8" x 1 1/2" cobalt lathe bits(4 ea.)
- Ngraver – M-2 HSS round graver blanks, 1/8" x 2 1/2" **OR** 1/8" x 2 3/4" drill blanks
- Norton Wet or Dry emery paper, #240 or #280, #320, #400 (5 ea.)
- Norton Wet or Dry emery Paper, #600 (2 ea.)

OPTIONAL:

- Ngraver – Thin line pencil and pen (included in scroll master kit)
- Ngraver – Scroll Master Kit
- Ngraver – Layout pencil set
- “The Art of Engraving” by James B. Meek (excellent resource)
- 3 ring binder, plain paper, lined paper, tracing paper, graph paper, if available
- A drafting light and bulb, extension cord, and multi-plug outlet
- Tool Box
- Seat cushion
- Eraser
- Pictures you would like to engrave (birds, animals, scenes, etc.)

GSS 134 CAUSTIC BLUING

TOOLS

- Safety glasses with solid sideshields (AZSI Z87)
- Ballpeen hammer-2 oz or 4 oz.
- Plastic or rawhide mallet
- 1 Set pin punches
- 5 Assorted screwdrivers to fit firearms you bring
- Gun cleaning kit
- W D – 40
- Roll of bailing wire
- 10 Inch fine cut flat file (with handle)
- sandpaper (220, 320, 400, 600 grit wet and dry)
- Shop rags
- One roll of paper towels
- Small parts basket- mild steel or stainless steel
- Dust masks
- 1/4, 3/8, and 1/2 wood dowel polishing mandrels.

Recommended

- Rubber gloves (heavy black rubber)
- Shop apron
- Small bottle vinegar
- 2 Each 1 inch sanding belts (220 and 320 grit) 42 inches

GSS 147 LEAS ADVANCED RIFLE ASSEMBLY AND TUNING OF GAS OP RIFLES

FIREARMS

AR-15 or Clone

TOOLS

- Screwdrivers
- Assorted files (**INCLUDING ONE 4" SMOOTH CUT WITH SAFE SIDE**)
- 2 or 4 ounce ball peen hammer
- Pin punch set
- Honing Stones
- Eze-Lap Diamond hone (fine) Brownells
- 1" Emory cloth strips (fine)
- Dummy rounds in calibers for your firearms
- Safety glasses
- Ear muffs or plugs
- Any other appropriate tools
- Breakfree lube and cleaner
- Magazines for guns you are working on
- Bench light (clamp on style)
- Padlock

GSS 148 ADVANCED CORRECTIONAL ARMORER

Required Firearms

- Remington 700 sniper rifle
- Colt AR-15 Rifle
- MP-5 submachine gun
- Beretta 92 semi-auto pistol
- If your Dept. uses a Glock or Ruger handgun bring them.

Recommended Tool and Materials List

- Tool chest or Toolbox with lock
 - Ballpeen hammer- 2oz or 4 oz.
 - India stone 1/2 X 6 inch. Med (quality)
 - India stone 1/2 x 6 inch. Fine (optional)
 - Hard Arkansas 1/2 X 6 inches. (optional)
 - Pin punches 1/16 to 1/4 inch. by 1/16 inch increments
 - #1 roll pin punch
 - Dial Caliper- 0-6 inch.
 - Feeler gauge set
 - Screwdrivers- 6 assorted sizes one piece
 - Jeweler's screwdrivers to fit Remington 700 trigger group
 - Rawhide mallet- 8 oz or heavier
 - Drift punch - brass
 - Chip brush- (1" paint brush)
 - Safety Glasses
 - Stainless steel toothbrush
 - File cleaner
 - File # 0 cut 8 inch
 - File #2 cut 8 inch
 - File round #4 cut 6 inch
 - #7 Briley crochet hook (Berretta trigger spring)
 - "Breakfree"- lube/cleaner
 - Denatured alcohol
 - "44-40" cold blue
 - Toothpicks
 - Q-tips
 - Loctite (blue) # 242
 - Shop apron (optional)
 - File handles to fit files you bring
- (CONTINUED ON PAGE 34)

- Dremel or Foredom tool with attachments (optional but very useful)
- Optivisor- (optional- very useful)
- Piece of carpet for bench pad
- Clamp on desk lamp
- Extra padlocks for firearms lockers
- Dummy ammo for your firearms
- Any parts you need to replace in your firearms
- Any other gauges your institution has for the firearms you bring
- Any color model paint- (to seal Remington 700 Trigger screws after adjustment)
- Range equipment (sandbags or bipods for sniper rifle, targets, stapler and staples, ear protectors and shooting glasses)
- Any specialized tool kits for your firearms

**Bring sufficient Test Ammo- for each firearm you bring!!! Ammo amounts are desired but not mandatory! This is per firearm!

MP-5- 200 rds, Rem 700 -20 rds, Berretta 92 -40 rds, CAR-15- 200 rds.