**Introductory Hand Engraving**

*Note* In order for this course to meet the requirements for the Gunsmithing Arts Certificate, classes will run longer each day. Students should report for orientation at 8 a.m. Monday morning. Dr. Pierson will discuss extended class time at the beginning of the course.

(This course counts toward the Gunsmithing Fine Arts Certificate)

This course covers basic concepts and skills related to hammer and chisel engraving. Special emphasis will be placed on tool sharpening, pattern theory, designing, transferring, and cutting patterns.

**Dr. Michael J. Pierson** has been an academic administrator and taught technical subjects in a university setting for over 35 years. He has been engraving for 24 years, was trained by Frank Hendricks, and is a member of the Firearms Engraver’s Guild of America. He is proficient with both the hammer and chisel and pneumatic engraving techniques and a wide variety scroll patterns.

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![Dr. Michael J. Pierson](image.jpg)

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**Introductory Hand Engraving**

**Tool List**

**Required tools and supplies:**
1. Chasing hammer, 1-1/8" face from NGraver or GRS
2. Four 3/32” carbalt XD blanks from Lindsay
3. #7, #12, #20 straight liners in standard width from NGraver or #18-10 and #24-10 straight liners from GRS
4. Steel ruler, 6 inch
5. Dividers
6. Scribe
7. Ellipse template #20750 from Drafting Steals
8. Circle template #20724 from Drafting Steals
9. Stabilio # 8008 pencil from Amazon
10. Curved burnisher from Amazon
11. Dot punch set, No. 1,2,3 from NGraver or beading tool #10, #15, and #22 from GRS
12. Optivisor, #3 lens from GRS
13. Talcum powder
14. Clear packaging tape
15. Money clip, nickel silver spring tempered from Ngraver
16. One tube of oil based black etching ink from Faust or Eckersleys
17. Stainless tool holder for 3/32” graver blanks from Lindsay
18. Wet/dry silicon carbide sandpaper (220,320, & 400 grit)
19. Palm push adjustable length graver from Lindsay
20. 3/16” brass punch from MSC
21. 3/16” steel punch from MSC
22. Carbide bur set #004-511 from GRS

Contact information for tool and supply sources:
GRS Tools Web site: www.grstools.com
The Ngraver Company
Web site: Ngraver.com
Lindsay Engraving and Tools
Web site: Lindsayengraving.com

Rudolph Faust, Inc.
Web site: faustink.com

Eckersley’s Arts and Crafts
eckersleys.com

MSC Industrial Supply
Web site: mscdirect.com

OUTLINE OF COURSE CONTENT:
I. Engraving tools
   A. Types
   B. Sharpening
II. Pattern theory
   A. Spiral type
      1. Circular
      2. Elliptical
   B. Spiral characteristics
      1. Corridor type
         a. True corridors
         b. Holding corridor
      2. Relationship to other spirals
         a. Common stem spirals
         b. Overlaid spirals
   C. Spiral measurements
      1. Spiral height
      2. Corridor height
      3. Extension length
      4. Standoff
      5. Number of turns
6. Angle of departure

D. Leaf anatomy
1. Leaf types
   a. Adjacent
   b. Separated
2. Leaf parts
   a. Sweeps
   b. Buds
   c. Lobes
3. Leaf measurements
   a. Leaf height
   b. Stem thickness
   c. Sweep height
   d. Bud height
   e. Leaf meter
   f. Leaf width
   g. Leaf separation

III. Designing patterns
A. Selecting scroll style
B. Laying out the pattern
   1. Outline the panel
   2. Establish the panel’s center line
   3. Draw planning circles
   4. Establish point of origination
   5. Establish scroll height, corridor height, and rate of turn

IV. Cutting patterns
A. Hammer and chisel or chasing method
B. Borders
C. Lining
D. Backgrounds
   1. Flush
   2. Relief
E. Transfer plates
F. Transfer techniques