

Intro to Bladesmithing Course

American Bladesmith Society, Inc.

Class Syllabus

The purpose of the American Bladesmith Society Inc. is to preserve the art of the forged blade, tools, and other implements. The ABS is a non-profit educational entity which strives to accomplish this goal by providing information and instruction. The following syllabus is forwarded as pertains to the Basic Bladesmithing Course.

Goals

The goal of this course of instruction is to provide the beginning student with the knowledge and skills necessary to forge, grind, heat treat and finish a carbon steel blade of excellent quality during the ten days of the course. Students should acquire the knowledge to finish the blade to the degree that it is ready to apply guard and handle material.

The students should complete the course with the ability to properly fabricate a properly forged and finished blade which will pass the ABS Journeyman Smith physical testing requirements. Overall design of finished blades should include tang and shoulder design to allow proper fitment of handles and guards. It is desirable, though not required, that a student complete and physically test two blades prior to the end of the course of instruction. A good balance of classroom to shop time is desired with an approximate 25% of classroom to 75% hours of shop time suggested as guide.

Important note- *Blades or any component of a completed knife made in any instructional class will not be eligible to be used for official performance tests or presented to the ABS Judging Panel for fit and finish examination for the rating of Journeyman Smith or Master Smith.*

I. Week 1

A. Basic Introduction:

1. Explanation of goals and definitions
2. General discussion of class procedures
3. Basic safety procedures
4. Discussion of materials, methods (steel selection and characteristics)
5. Blade and overall knife design including tang and handle considerations to prepare students blades for handle and guard installation.
6. Issue of tools, materials

B. Demonstration of proper forge lighting techniques (gas and coal)

C. Properly forging a “forged to shape” blade as defined by the ABS

FORGED TO SHAPE

- Blade profile should be forged with the point located properly. No more than one-eighth inch should be ground off any point to match the desired profile.
- Cutting edge should be straight, centered, and no thicker than a nickel.

- Distal taper should be forged for at least one-half the length of the blade.
- The tang and choil should be forged according to the design to facilitate subsequent handle and guards.
- Forging should be done at the correct temperature to control grain growth, excessive scale and decarburization.
- Normalizing and/or annealing should precede grinding and heat treatment. Heat treatment should be dictated by the intended use of the knife.

D. Introduction to grinding

1. Discussion of different types of belt grinders, disk grinders
2. Discussion of different types of available abrasives
3. Safety briefing, use of grinding machines
4. Demonstration of proper flat grind

E. Forging and grinding by students

II. Week II

A. Introduction to basic heat treating and metallurgy

1. Classroom discussion
2. Demonstration
3. Quench (harden) with standard, basic methods, geared toward Introduction to Bladesmithing.
 - a. Full quench technique
 - b. Edge hardening technique, with no less than ½” of hardened edge being displayed in the resulting hardening line.
4. Draw (temper) blade and cutting edge
5. Draw (temper) tang, ricasso and spine of blade

B. Forging, grinding review and demonstrations by second instructor

C. Proper edge geometry and sharpening of blades

D. Physical testing

1. Rope cutting (if available)
2. 2 X 4 cut
3. Shaving of hair with blade

4. Bending of blades to 90 degrees

E. Critique of blade performance

F. Blade finishing

1. Types and grades of abrasives, files, and fixtures
2. Methods (demonstration)
3. Setting up finished blade for installation of guard

G. Handle and guard design (discussion)

H. Graduation, awarding of certificates