

Finding Your Edge

Those who appreciate the charm and beauty of a custom-made knife can learn to make their own through a community college program in the heart of North Carolina.

The conveniences of mass-produced items surround us in our everyday lives. Despite the advantages of these products—such as low cost and voluminous supply—many of us still appreciate custom-made objects. By purchasing something that was made by hand, you can own something that is by its nature different from all the others around, lending an air of personalization and individuality.

However, although these can be unique and individualized to one person, they are often shaped by the hands of another. What if you were to take it one more step, to create and shape the product with your own hands?

One of the most popular custom-made and personalized products, particularly for those who appreciate the outdoors, is the fixed-blade knife. Simple and straightforward, this useful implement can be as simple or as ornate as the owner desires. And, although it might seem to be beyond the reach of the beginner, there is a place right here in North Carolina where you can learn the basics of creating your own hand-made knives.

Written by Michael O. Humphries
Photographed by Melissa McGaw

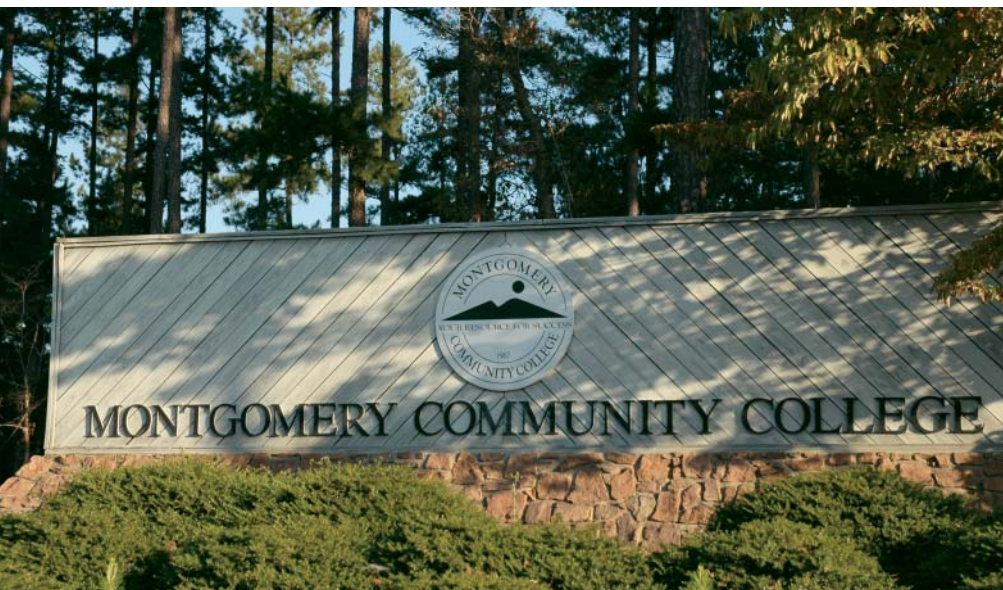


This Samuel Bell-inspired dirk (left) was forged by Jim Batson during his "Introduction to Bladesmithing" class. The custom knife (right) was created through the stock-removal process by Tommy McNabb, instructor of the "Basic Knife Making" class.

Close at Home

Montgomery Community College, a small institution located in Troy, offers a selection of knifemaking classes that are part of the school's Continuing Education & Community Services program. Created in affiliation with the National Rifle Association (NRA), the school's short-term knifemaking classes offer students the opportunity to learn the basics of knifemaking in the span of less than a week and at a cost of a few hundred dollars.

How did such a unique program come about? "There are a lot of people around here who hunt and fish," explained Michele Haywood, public information officer for Montgomery Community College. "We are right here next to the Uwharrie National Forest, and outdoor traditions are just part of the culture of the area."



Montgomery Community College in Troy offers beginners a chance to learn to make knives themselves. Batson's class (right and opposite page) teaches students how to properly heat and hammer-forg a blade from a simple carbon steel rod.



In fact, the school has a long tradition of providing outdoors skills to its students. After opening its doors in 1967, the college started its extremely popular two-year gunsmithing degree program in 1978, solidifying the school's reputation for offering a unique set of classes and programs. "Although we are the third-smallest community college in the state, our offerings have made us stand out," Haywood pointed out. "In fact, when the gunsmithing program first started, it was one of only five gunsmithing schools in the nation." And this program was no lightweight, offering 2,100 hours of hands-on instruction to students.

It was on this solid foundation that the school decided to expand its offerings and began providing NRA short-term schools, including knifemaking, gunsmithing and law enforcement armorer classes in 1995. "This was a good move for the school, as it allowed the college to build on the popularity of the gunsmithing program," Haywood said. These short-term classes give students the opportunity to study focused topics in a short time frame, expanding their skill base. They also allow the school to bring in nationally recognized experts to teach the programs.

The Basics

To find out what options are available for aspiring knifemakers at Montgomery Community College, I observed some of the school's classes in the summer of 2007. Although there are several classes from which to choose, two of them were ideal for a beginner—"Introduction to Bladesmithing" taught by Jim Batson, and "Basic Knife Making" taught by Tommy McNabb. These classes were selected because they offered a relatively quick and inexpensive way for a student to learn the basics of the two primary methods of custom knifemaking, taught by instructors renowned in their fields. Batson's class focused on forging a blade, and McNabb's taught the process of stock removal in knifemaking.

Forging, a process steeped in two millennia of tradition, revolves around the process of heating carbon steel to the point of pliability and then hammering it into the shape of a blade. This form of knifemaking takes a traditional approach and employs basic source materials such as carbon steel. Stock removal, on the other hand, is a more

modern approach that employs contemporary grinding equipment and can be used with materials such as stainless steel. With this process, you begin with a section of steel and cut away what is not wanted until the desired shape is achieved.

McNabb's background in knifemaking spans nearly three decades, starting in 1979 when he began studying blacksmithing. He eventually learned how to produce Damascus steel and was taught by knifemaker Travis Daniel how to grind knives. McNabb, who owns Carolina Custom Knives in Bethania, has developed an enviable reputation in the knifemaking world. In fact, it was his connections to the industry, and specifically the N.C. Custom Knifemakers Guild, that played a role in getting the classes started at Montgomery Community College.

"I gathered some friends and fellow knifemakers together in 1992 to form a new group," said McNabb, who was the guild's first president. "I had always been willing to share my knowledge with others through workshops." Because he had worked with the college on some past projects, McNabb asked if the new guild could hold its meetings there. Bruce Turner, then director of the college's continuing education program, asked if he would be interested in teaching a knifemaking class. McNabb agreed, and the classes grew quickly in popularity. Soon, he was able to bring in additional instructors, including Batson, to teach other classes and disciplines. "The school was extremely open to working with knifemakers," McNabb said. "They were completely willing to tailor classes to fit our needs."

Baptism by Fire

The two classes that I selected, per McNabb's advice, represented a good overview of the primary methods of custom knifemaking. Although the fee for the classes is modest, one must also take into account the tools required for each class. The short list of what is needed consists mostly of a selection of files, hammers and sandpaper in addition to a shop apron and few other odds and ends.

The first class I attended was Batson's "Introduction to Bladesmithing." Although the school's air-conditioned classroom was comfortable and modern, there was a medieval feel to the room once the gas forges were heated up. Adding to this atmosphere were the multiple anvils located in the



classroom, where students would hammer out the shapes of their blades.

“Don Fogg, one of the other instructors, made the statement that we bladesmiths have our feet in 2,000-year-old clay,” Batson told the class. He went on to explain that we would make a re-creation of a Samuel Bell dirk by learning how to employ an ancient art form that has recently been revived.

Done the old-fashioned way, the process of forging a blade starts with a piece of carbon steel that is heated in the forge to the point of pliability. Once achieved, the steel is then placed against an anvil and hammered into the rough shape of a blade. Batson explained to us that “feel” is very important in this process, explaining that it is more art than science. “The steel will resist you,” he told us, going on to explain that you can interpret the vibrations of the impact of your hammer to read what is happening with the steel. After a bit of hammering, the steel must be placed back into the forge to again make it soft enough to shape. As Batson showed us how this works, he repeated the process over and over until the general outline of a blade began to appear.

Once the class became familiar with the basics, Batson let everyone begin. As the students began to heat and shape the blades, they tried to emulate the instructor’s feel for the steel. Batson observed the process and gave a helping hand when students were having trouble or getting frustrated. “Forging is a thinking man’s sport,” he loudly proclaimed over the din of clanging hammers. “Every strike on the blade causes a change to the steel that you must read and react to.”

Throughout this process, Batson tried to relay to the class the finer points of forging—knowledge that he had gained through decades of experience. “It is always good to work in a dark shop,” he told us. “It lets you better judge the heat on the blade by the color of the steel.” And, although it seems pretty obvious after the fact, he had to remind the class that the thinner point of the blade heats more quickly than the thicker sections of the body of the blade, so the students should pass the tip completely through the forge, with only the central section of the blade receiving the bulk of the heat.

McNabb, who was there helping Batson conduct the forging class, explained to me that this process shares some traits with his

stock removal class, with the skills learned from the two classes complementing each other. “Forging and stock removal both have some things in common,” he said. “Although forgers hammer the heated blade into the shape they want, they often still go to the grinders. Ultimately, this is same thing that knifemakers using the stock removal process do. In fact, many of the forging students go on to take my stock removal class.”

Over the span of a few days, the students forged, shaped and heat-treated their blades, taking in decades of Batson’s knowledge in an extremely short time. And, as Batson pointed out, the results of their efforts were quite impressive. Because of the short three-day duration of the class, Batson did not include applying a handle to the blade, instead focusing on shaping the blade itself.

Shaping Perceptions

Scheduled a few weeks later, McNabb’s class felt completely different. Whereas the forging class conveyed an ancient, traditionalist feel, the stock removal class seemed much more modern. In fact, McNabb told me that the stock removal process usually appeals to machinists familiar with modern machinery.

Batson shed some light on the appeal and advantages of the stock removal process during his forging class. “Modern grinding equipment is what makes the stock removal method possible,” he said. “It also allows you to work with more modern materials, such as stainless steels, which are not as easily forged as the types of carbon steels employed in my class.” The steel chosen for this particular project was ATS-34, one which he uses a great deal because of its rust resistance and ability to hold an edge.

Once the blade shape was determined and scribed onto a chunk of steel, the rough shape was cut out on a band saw and then the grinding began. Employing belt grinders, McNabb showed the basics of how to shape the blade. He demonstrated how to create proper angles by holding the blade at the correct angle, rigidly, and then leaning into the grinder with it.

“You can feel when the proper angle of your grind has been achieved, and you can feel the blade settle against the grinder once you lay it against it,” he told me. As I contemplated the appeal of this process to machinists, I asked him if using a milling

machine was an alternative to grinding the blade by hand. He said that this approach would work, but it would be unnecessarily time-consuming to create all the jigs for the machinery. “It is just easier to do it by hand with the grinders,” he told me. “Although it does require for you to develop a feel for how the steel responds to the grinders, it gives you a great deal more flexibility.”

Over the course of four days, McNabb guided the class through the process, including shaping, heat-treating and polishing. As the class would grind the shape of the blade through each step, they would then move on to a smoother grit on the belt grinders, smoothing out the finish each time. McNabb made sure to point out that each step of this process was important, and that each smoother grade of sandpaper would remove the grinding marks of the previous process. Throughout this, he constantly made sure that we kept the original shape of the ground blade, just polishing and smoothing, minimizing reshaping to only when it was necessary.

One important way that his class differed from that of Batson’s was that McNabb taught us to finish a completed knife, handle and all. Once we selected our handle materials, he taught us how to fit them and the requisite pins and bolsters, using epoxy to attach them solidly. Once the oversized chunks of handle material were affixed to the tang of the blade, we were allowed to begin shaping them on the belt grinders to the profile of the knife’s tang area. Unlike the steel, the natural materials used for handles (bone, wood, etc.) would grind away quickly under pressure from the grinders. With a much lighter touch, we soon shaped the handles to the blade and then moved on to the final polishing of the blade and handles. Once all was said and done, we had created a knife on our own—with the instructor guiding us the whole way.

In less than two weeks, I was able to learn the two primary methods of custom knifemaking, all at the hands of instructors respected in their fields. It was an eye-opening and enjoyable experience, one that I suspect will create a lifelong interest in making handmade knives. Anyone here in the state (or elsewhere, for that matter) who has an interest in learning these processes should definitely take advantage of these intriguing programs. ◀

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McNabb’s class focuses on the stock-removal process of knife-making, in which a blade is cut and shaped from a flat of steel. The process involves cutting out the shape of the blade with a band saw, shaping it with belt grinders (above) and then polishing it.



Getting Started

Did this article inspire the hidden knifemaker in you? If so, then here is a short list of whom to contact to learn more about the classes and buy the necessary gear.

Brownells: 800-741-0015, www.brownells.com

Montgomery Community College: (910) 576-6222, www.montgomery.cc.nc.us

Or, if you are considering buying a custom knife or simply want to learn more about those who know their way around a knifemaker’s shop, then the following are good places to start. Carolina Custom Knives: (336) 924-6053, www.carolinaknives.com
N.C. Custom Knifemakers Guild: www.ncknifeguild.org