

## CATALOG

**Howard Academy for the Metal Arts  
188 - 194 W. Main Street  
Stoughton, Wisconsin 53589**

**608-873-5199  
800-843-9603  
FAX: 608-873-0960**

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### ABOUT THE SCHOOL

#### I. PURPOSE AND GOALS

- A. The apprenticeship system used to train goldsmiths and jewelers since the middle ages is no longer practical. The inexperienced person seeking a position in the jewelry trade with on-the-job training, which is the modern version of an apprenticeship, will find very few opportunities. Goldsmiths or commercial jewelers just can't afford the time, extra tools, precious materials and expensive mistakes involved in training a novice. The fact is that aspiring craftsmen must have proficiency in the basic skills required before they can expect to find a job that will further improve their skills and earnings.

There are many schools which offer short courses on various jewelry techniques and procedures. Most of these are aimed at people who already have some work experience in the jewelry trade or related fields. Such courses offer condensed training spread over a one- to ten-day period with lots of handouts and lectures but little hands-on experience or practice sessions. The result for a new student is lots of theory and handouts but no gain in proficiency.

The Howard Academy for the Metal Arts was founded to provide vocational training in metal arts techniques for people seeking employment or self employment as goldsmiths, jewelers or other positions in the metal arts field. To that end, we have taken a low tech, low cost approach to teaching the various techniques and basic skills involved. The emphasis is on creating proficient craftsmen able to translate ideas and designs into finished products efficiently, profitably and with pride in craftsmanship.

Our basic curriculum focuses on mastering a foundation of basic techniques then constructing new techniques using skills already in use. Initially, students study specialized techniques and their applications to commercial jewelry or goldsmithing work. After students have learned the jewelry trade applications, we expose them to a broad spectrum of uses for their new skills in other areas of the metal arts. Sculpture, black smithing, foundry work, forge welding, minting and toolmaking are some other areas students can explore, experience and expand their abilities.

Innovation, versatility and proficiency imparted during training make our programs useful for all types of students. Anyone who wishes to enhance their creative ability by increasing their technical ability would benefit. Our cost per class hour and student to teacher ratio (12:1 max.) is one of the lowest in the country. We seek to graduate only top notch creative craftsmen for entry into a profession that really **needs** skilled professionals and is willing to pay them well.

II. CURRICULUM DESCRIPTION

BASICS, COMMERCIAL JEWELRY, GOLDSMITHING AND PRODUCTION TECHNIQUES

- A. Average course length - 3 to 14 months
- B. Average cost - \$3,000 to \$14,000 + tools and materials
- C. Counseling and assessment of your skills before making curriculum choices allows you to enroll for a full or partial course of training described below.
- D. Course content = 77+ projects relating to the following:

<u>Course Content</u>	<u>Approx. Hours:</u>
1. Filing and shaping	40
2. Saw piercing	30
3. Drilling and burr uses	40
4. Tool making and treating	20
5. Soldering and miniature welding	60
6. Riveting and other fastening methods	35
7. Sizing	60
8. Setting	40
9. Finishing, polishing, and plating	25
10. Repairs	80
11. Casting	40
12. Practical gemology - do's and don'ts	8
13. Production techniques - basic	12
14. Troubleshooting	15
15. Lectures and demonstrations	time varies;
16. Guest lectures and demonstrations	items 15 - 17
17. Observation of working shop	may = 335 hrs.
18. Semi-final project	40
19. 2nd counseling: curriculum and skill levels	n/a
20. Advanced hand tool techniques	100
21. Advanced fabrication techniques	200
22. Design for production	100
23. Solving design problems w/techniques	80
24. Hand engraving	240
25. Die making and use	120
26. Gold, silver and non-ferrous metal smithing	80
27. Black smithing	120
28. Welding for light duty and arts applications	80
29. Mold making, jig and tool making	100
30. Advanced production techniques and more	140 = 545 - 2,240 hrs.

III. INSTRUCTORS: WILLIAM L. HOWARD, Master Goldsmith AND GUEST EXPERTS

William L. Howard, our headmaster, has been working within the jewelry trade for over 35 years as a repair jeweler, diamond setter, custom goldsmith, designer, manufacturer, gem dealer, consultant, and instructor. He is intimately acquainted with the working needs of craftsmen on the wholesale and retail levels of the trade. Mr. Howard has exhibited and sold at regional, national, and international trade shows and art events across the U.S. His work is in private collections all over the world. He has observed, first hand, commercial jewelry operations and metalworking techniques in this country and abroad. In his own workshops, he has trained over 50 apprentices who have all gone on to other jobs within the jewelry trade. During the course of this experience, he designed and implemented numerous apprenticeship and training programs for various Wisconsin agencies, the Veteran's Administration, public schools, etc. He has trained hundreds of students through seminars, artist in residence projects, trade demonstrations and vocational school classes. This experience has lent his instruction techniques and performance standards a very demanding yet practical flavor which we feel will greatly benefit the serious student interested in the metal arts as a profession.

#### IV. METHOD OF INSTRUCTION

We sincerely believe that there is no better teacher than experience. Our method of instruction involves lectures and demonstrations, but concentrates on a carefully planned and designed series of bench work projects. These are designed to impart a working knowledge of the most useful and practical techniques that the student will need in actual work experience. The techniques learned in one project aid the student in mastering other more complex techniques in the next. The goal of the curriculum is to ingrain a repertoire of techniques which can be adapted and combined to better solve the problems they will encounter in the marketplace. Challenge and practice creates proficient craftsmen.

Each project will be thoroughly explained to the class as a whole followed by a demonstration. After the lecture and demonstration, if any individual student needs assistance or further explanation it will be available. Many of the demonstrations will be videotaped in color with microscopic detail for ease of review.

Observation and experimentation augment the learning process. To that end, the Academy maintains a retail venue, a custom jewelry and repair shop and a forge and sculpture studio in conjunction with the School so students may see in practice what they are learning. Many demonstrations relate to techniques involved with work in progress. It is expected that students try the demonstrated techniques in addition to assigned projects. Thus, students generate experience and problem solving skills through doing.

Our grading system is very simple; either a project is done properly or it isn't. Students will get a pass or fail for their try on that particular project. If they wish to try again before going on to the next project, they will be encouraged to do so. When the project is completed successfully they will receive a passing mark. Time taken to complete a project while learning a new technique, quality of finish, and successful use of techniques involved are criteria recorded for future information requests from prospective employers. However, the students' grades on the projects are based solely on whether or not they completed them satisfactorily. A student must complete all the projects successfully before they will be awarded their diploma. Our records on students' grades and general progress will be available for their information so they can be constantly aware of what areas need more effort and what areas they have mastered. Credit for previous training or experience will be given once a student demonstrates they have a working knowledge of the techniques in question.

Students work at their own pace according to individual ability. We do not, as a matter of policy, expel students for unsatisfactory progress and would not deny them re-entry if they wished to try again after withdrawing from the School.

#### V. SCHOOL CALENDAR

The School is open Monday through Friday, 9:00 a.m. to 12:00 p.m. and 12:30 p.m. to 5:30 p.m.

We are closed for the following holidays: Memorial Day; Fourth of July; Labor Day; Thanksgiving Day; and during Christmas break from December 15-New Year's Day.

#### VI. SCHOOL'S GOVERNING BODY AND OFFICIALS

Owner and Chief Administrator:  
 Headmaster:  
 Teaching Assistant:  
 Associate Master:  
 Hollow Forming & Forging

WILLIAM L. HOWARD  
 WILLIAM L. HOWARD  
 TERRI GARCIA

Tim Jenson

## SCHOOL POLICIES

### I. TUITION, OTHER COSTS AND REFUNDS

- A. Tuition is computed at \$1,000.00/month with a one-month minimum charge for short-term and is prorated at the rate of \$50/day after the first month for the purpose of computing any refunds.
- B. Tuition can be paid monthly for short-term and quarterly or in full for the planned term of enrollment. **However, the number of payments cannot exceed four (4) installments beyond a down payment (if any). A down payment and its amount is optional but no installment paid afterwards can be more than twice the amount of any other payment. We do not impose any finance charges.** We cannot offer any payment plans beyond those stated or we violate the Wisconsin Consumer Act.
- C. All payments are due in advance of instruction by the first of the month or the next business day (Monday through Friday).
- D. Required tools and supplies must be paid for prior to delivery or use. The maximum cost for a set of jeweler's bench tools, materials and supplies was \$2,400 as of Jan, 1997. A list is included.
- E. The School will issue a refund within thirty (30) calendar days of any tuition owed if a student's withdrawal or dismissal is within the three-business-day cancellation period.
- F. A student who does not attend classes for ten consecutive class days and who does not provide the School with an explanation before or during the absence, is considered to have withdrawn from school after the 10th day.
- G. Partial refunds shall be made as follows:
1. No refunds will be made after 60% of the course has been completed by the student.
  2. When a student cancels their enrollment after three business days but before 60% of the course has been completed, the refund would be computed as follows:

<u>At Least</u>	<u>But Less Than</u>	<u>Tuition Refund</u>
1 unit/class	10%	90%
10%	20%	80%
20%	30%	70%
30%	40%	60%
40%	50%	50%
50%	60%	40%
60%		<b>No Refund</b>

As part of this policy, the school may retain a one-time application fee of no more than \$100. The School will make every effort to refund prepaid amounts for books, supplies and other charges. A student will receive the refund within 40 days of termination date. If a student withdraws after completing 60% of the instruction, the School may refund a pro rata amount if withdrawal is due to mitigating circumstances beyond the student's control.

3. The charge to a student who cancels enrollment during the first week will not exceed \$100.
4. Unearned tuition is refunded automatically after completion of a course.
5. Tool refunds will be made in full for tool items returned in good condition. Refunds for unused materials and supplies are made for those items in good condition.

## II. ENROLLMENT

- A. First come, first served until classroom space is filled.
- B. No discrimination regarding age, sex, race, religion, origins, or creed.
- C. Enrolled students will have first option on available space if they wish to extend their term of instruction. Students newly enrolled in the full course receive the next priority for space, followed by short-term students.
- D. Students applying for enrollment will be put on a wait list. Those wishing to pre-pay tuition will be considered enrolled and placed in a class as soon as space is available.
- E. Short-term students' option for space to extend their term can only be used when there are no full course or pre-paid students that need the space. However, short-term students will be given preference over applicants on the wait list.
- F. Wait lists for pre-paid students and applicants shall be compiled in chronological order according to date received.
- G. Students and applicants on the wait list will be given as much time as possible when an opening is available, so that they may obtain needed tools and make any personal arrangements necessary to attend the School. Students may begin a class on any day that classes are being conducted, but will find that they are behind other students in regard to the projects they are working on.

## III. DISCIPLINE AND DISMISSAL

- A. Discipline for conduct which disrupts the study of other students, interferes with the instructor's training activity, or acts which endanger other students or instructors shall be as follows:
  - 1. One verbal warning to cease such conduct or activity will be given.
  - 2. If such conduct or activity does not cease immediately, the student may be expelled from the class and premises for the remainder of the day at the discretion of the instructors.
  - 3. If a student repeats the offense and persists to the point where the instructors feel it necessary to expel him/her for a second day, he/she may either be expelled for the day or dismissed entirely.
- B. Dismissal - Permanent
  - 1. For willful destruction of school property.
  - 2. For theft of any type from school or fellow students.



#### IV. LEAVES AND ABSENCES

- A. Leaves of absence due to illness or other valid reason may be arranged with the School according to a student's needs. The student will be reinstated at the earliest possible date. However, if the leave is exceptionally long, we may require make-up projects to bring their techniques back up to the level they were prior to leaving. Additional time credited for excused absences will be added to the end of the term.
- B. Unexcused absences, tardiness, class cuts, and other unprofessional behavior is entirely the student's responsibility. There is no distinguishing between the types of absences. We wish to point out that it may be frowned on by prospective employers. We keep records on the above for future use in giving reference to employers.

#### V. CERTIFICATION AND REFERENCES TO EMPLOYERS

- A. Diplomas for successful completion of a course will be awarded to those students who satisfactorily complete all of the assigned projects.
- B. No general letters of reference or recommendation will be given to students other than their diploma. **We do not offer a job placement service.**
- C. References to prospective employers will be based only on the quality and craftsmanship of the projects completed and the time taken to complete them. No personal opinions of a student's character or personality will be given.
- D. Grading is based solely on whether or not a student completes the assigned projects satisfactorily. Work habits, use of time, craftsmanship, quality of finish, and effective use of techniques will be noted but only for progress evaluation and future references to employers. They do not affect the student's grades. If a student's projects always fail, we may advise them to withdraw from the school.
- E. Permission will be required before we will give out references to prospective employers regarding a student's ability, work habits, efficiency, craftsmanship, or completion. A student can give us permission in writing before they leave, by mail, or by telephone when the occasion requires it. Student records are stored indefinitely.

#### VI. TOOL POLICY AND CHECKLIST

- A. We require that all students have the necessary personal hand tools to complete the course projects. A check list of these tools is provided on the following pages. The tools should be purchased as far in advance of the class starting date as possible. Suppliers' inventories tend to be unpredictable and delivery times usually exceed those stated in their catalogs. Back orders are more the rule than the exception. Tools can be ordered through the school.
- B. Our policy on expendable materials is the same as our tool policy. A list of required expendable materials is included following the tool list. The ordering procedure for these items is the same as for the tools. The required items are carried by local suppliers and the school.
- C. **TOOL ADVICE**

The quality of work done and the lessons learned depend on having the right tools, equipment and materials to do the job. Our Academy provides shop equipment, materials and supplies much as any employer would. **You will be required to provide you own personal bench tools, textbooks, materials or supplies as will many prospective employers.**

We do not consider ourselves in the tool business and do not require that students buy tools, books, etc. from the School but we do insist that the tools students use are the right ones. If students have tools which meet our criteria they need not purchase others, but please be aware of the dangers of uninformed tool buying. Many students over the years have wasted time and money by buying poor quality or the wrong tools entirely.

As a service to our students, we have selected and assembled complete sets of the proper bench tools which are available for purchase. These tools are high quality, practical and durable. With proper care the sets will last a lifetime. We hope students will take advantage of this service. If a student is new to metal arts and is determined to shop, PLEASE ask our advice. The quality points on tools are subtle and sometimes even invisible. A list of required tools, books, materials, and supplies is attached .

**VII. STUDENTS' PROPERTY AND SAFETY**

- A. We are not responsible for student’s personal property. Lockable steel cabinets are provided for each bench but we suggest that students obtain a lockable tool box and padlock to secure their tools, etc. when left on the premises during non-business hours. Business hours are from 9:00 A.M. to 12:00 P.M. and 12:30 P.M. to 5:30 p.m. Monday through Friday.
- B. Proper techniques and personal safety precautions will be explained and demonstrated to all students prior to their being authorized to operate school machinery, power tools, or equipment. Students must realize that there are inherent risks involved in the normal operation of heat-operated equipment, power tools, and even hand-operated machines and tools. This necessitates a responsible attitude for one's own safety. We cannot demand that students sign a waiver of liability and agree to hold us harmless in the event that you are injured, but we do ask that students sign the following statement:

**I have read the above statements regarding school policy and understand their content as relates to my role as a student at Howard Academy for the Metal Arts. I especially understand that there are inherent risks involved in the normal use of school equipment, hand tools, machinery, power tools, and equipment. I further understand that I should be responsible for my own safety when using such things and that by signing this statement I waive none of my legal rights but agree that I have been thoroughly warned.**

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Date
Signature of student / Parent or Guardian if minor

**VIII. SCHOOL CREDENTIALS**

The Howard Academy for the Metal Arts is approved and licensed annually by the State of Wisconsin, Educational Approval Board. We are bonded and fully insured. We are approved by the V.A. for those students who qualify for veterans benefits. The Wisconsin Department of Workforce Development list us as a qualified vendor for training benefits available through various programs such as DVR. The school is also certified and approved by the Immigration and Naturalization Service (INS) to accept foreign students and issue I-20 forms for student visas through SEVIS. We are also recognized by many trade and professional organizations for our training.

Howard Academy for the Metal Arts  
188 - 194 W. Main Street  
Stoughton, Wisconsin 53589

608-873-5199  
800-843-9603  
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STUDENT APPLICATION

Today's Date \_\_\_\_\_

Name \_\_\_\_\_ Daytime Phone \_\_\_\_\_

Address \_\_\_\_\_ Alternate Phone \_\_\_\_\_

City, State, Zip \_\_\_\_\_ Birth date (optional) \_\_\_\_\_

Are you allergic to metals? \_\_\_\_\_ Are you right or left handed? \_\_\_\_\_

In case of emergency, notify \_\_\_\_\_ Phone \_\_\_\_\_

Do you have time limitations for the completion of this course? (explain)

Curriculum selection(s) with estimated time and maximum cost (see page 2):

\*\* Tuition is based on \$1,000 per month with one-month minimum enrollment

\_\_\_\_\_ Full Course of Training - (14 mo. - 2,240 hours - \$14,000); Items 1 - 30

\_\_\_\_\_ Goldsmithing and Production Techniques - (6-9 mo. - 1440 hours - \$9,000); Items 19 - 30

\_\_\_\_\_ Basics and Commercial Jewelry Techniques - (3-5 mo.- 800 hours - \$5,000); Items 1 - 19

\_\_\_\_\_ Short-Term: Items \_\_\_\_\_ Estimated Time: \_\_\_\_\_ mo. \_\_\_\_\_ hrs \$ \_\_\_\_\_ max

If course is filled, choose one of the two options below:

Refund tuition and tool money immediately and put me on the wait list \_\_\_\_\_ **OR**

Apply \$ \_\_\_\_\_ as prepaid tuition and enroll me in next course opening \_\_\_\_\_

I agree to comply with the Howard Academy for the Metal Arts' methods and policies as described in its current catalog.

\_\_\_\_\_  
Witness

\_\_\_\_\_  
Student signature / Parent or guardian if minor)

**Note: See Customers Right to Cancel on Next Page**

**YOU MAY CANCEL THIS TRANSACTION, WITHOUT PENALTY OR OBLIGATION.**

**PLEASE READ THE NOTICE ON THE FOLLOWING PAGE ABOUT YOUR RIGHT TO CANCEL UNDER THE LAW!!!!**

**\* do not write below this line \***

\*\*\*\*\*

**HOWARD ACADEMY USE ONLY: Enrollment is not complete or accepted without the following information and an authorized signature.**

Enrollment period: \_\_\_\_\_ Beginning: \_\_\_\_\_

Date accepted: \_\_\_\_\_ Accepted by: \_\_\_\_\_

Tuition paid \$ \_\_\_\_\_ Tool money paid \$ \_\_\_\_\_ Date \_\_\_\_\_

Chief Administrator



**YOU MAY CANCEL THIS TRANSACTION WITHOUT PENALTY OR OBLIGATION.**

**PLEASE READ THE FOLLOWING NOTICE  
ABOUT YOUR RIGHT TO CANCEL UNDER THE LAW!!!!**

**CUSTOMER'S RIGHT TO CANCEL**

\_\_\_\_\_  
Date of transaction

You may cancel this transaction, without any penalty or obligation, within three business days from the above date. (Saturdays, Sundays, and holidays are not business days.)

If you cancel, any property traded in, any payments made by you under the contract or sale, and any negotiable instruments executed by you will be returned within 10 business days following receipt by the seller of your cancellation notice, and any security interest arising out of the transaction will be canceled.

If you cancel, you must make available to the seller at your residence, in substantially as good condition as when received, any goods delivered to you under this contract or sale; or you may if you wish, comply with the instructions of the seller regarding the return shipment of the goods at the seller's expense and risk.

If you do make the goods available to the seller and the seller does not pick them up within 20 days of the date of your notice of cancellation, you may retain or dispose of the goods without any further obligation.

To cancel this transaction mail or deliver a signed and a dated copy of this cancellation notice or any other written notice, or send a telegram to the seller at the following address:

Howard Academy for the Metal Arts  
188 - 194 W. Main Street  
Stoughton, Wisconsin 53589

Not later than midnight of \_\_\_\_\_  
(date)

**NOTE:** Purchase of educational goods and services offered by a school is deemed to take place when written and final acceptance is communicated to the student by the school. If the representative who enrolls you is authorized to grant written acceptance at the time you enroll, and does so, the cancellation period ends at the time specified above. If you have not been accepted in writing at the time you enroll, the cancellation period does not end until midnight of the third business day after the day you receive written acceptance by certified mail from the school.

I hereby cancel this transaction

\_\_\_\_\_

\_\_\_\_\_  
Buyer's Signature

\_\_\_\_\_  
Buyer's Name (please print)

\_\_\_\_\_  
Street Address

\_\_\_\_\_  
City, State, Zip



## **STUDENT ENROLLMENT INSTRUCTIONS**

### **STEP 1: APPLICATION**

- 1) Read carefully all of the information in the catalog.
- 2) Fill out **one** copy of the application on page **8** and fax or mail it to the HOWARD ACADEMY. **SEND NO MONEY AT THIS TIME.** We will contact you to discuss skill assessment, curriculum selection(s) counseling, tool needs and to learn about your goals as they relate to your training. To some degree this can be done over the phone but we prefer a personal interview whenever possible. A visit gives you a chance to see the facilities and arrange for housing along with other necessities.

### **STEP 2: ENROLLMENT**

- 1) Complete the tool checklist (page 11) in duplicate to let us know what tools you have if this is still required. Keep a copy for your records.
- 2) **Carefully read** the duplicate set of pages 2 through 8 provided.
- 3) Sign and send the duplicates of pages 2 through 7 and two of 8, the tool list, your tuition down payment and any tool payment to the Academy. Please send separate checks for tuition and tools and label the checks. Sending this via certified mail with a return receipt requested is a good idea. (9 signed pages and 2 checks)
- 4) Make checks payable to HOWARD ACADEMY.
- 5) Keep the duplicate copies of all completed forms for your records.
- 6) We will notify you in writing by certified mail as soon as your application has been accepted and when you may expect to start your training. Receipt of our notice at this point completes your enrollment process. Notification will include your final acceptance copy of the page 8 application.
- 7) If you have been on a wait list, notice by certified mail means an opening is available and items 1 through 6 must still be completed as soon as possible.

Thank You,

Howard Academy for the Metal Arts  
188 - 194 W Main Street  
Stoughton, Wisconsin 53589  
US: 800-843-9603  
FAX: 608-873-0960  
Phone: 608-873-5199

**FACILITIES INFORMATION FOR  
BASICS, COMMERCIAL JEWELRY, GOLDSMITHING & PRODUCTION  
TECHNIQUES**

**HOWARD ACADEMY FOR THE METAL ARTS**

188 through 194 West Main Street, Stoughton, Wisconsin is a three story, brick building which has been beautifully restored but is equipped with modern mechanical systems and wiring. Built in 1905, it is a landmark known as the "Erickson" building and is listed on the historic register.

Howard Academy occupies the second floor. Our offices are in the front 1/4 of the building and classrooms occupy the rest of the second floor. The second floor is alarmed and monitored by ADT, a central station system. It is also equipped with closed circuit audio / video monitoring. A DWD approved ventilation and make-up air system was engineered and installed for the second floor classroom and work areas. Unfortunately, historic buildings do not accommodate wheelchair access so we cannot offer handicapped access to the second floor.

At present we have set up the main student classroom for 10 student workstations which include a workbench, adjustable chair, electrical outlets, lighting, oxygen/propane torch, shared chemical cleaning unit, locking storage chest and a central audio/visual display for observing demonstrations of procedures which require magnification. We have installed a trinocular microscope with a state of the art, color video camera built into the system which can be used for live demonstrations that can be recorded for later review. We consider this to be a huge asset for training as a majority of the techniques taught require magnification to execute or observe. In the past, we had to demonstrate in steps and pass the workpiece around for individual inspection which slowed the teaching process greatly.

Surrounding the central classroom are various work areas designed to accommodate specialized technical procedures as well as a working production shop staffed by the master goldsmith and professionals employed in the retail operation. This shop provides students the opportunity to observe in practice the subjects they are learning and to acquire actual work experience as part of their training. Custom work and repairs are done for the public.

In the classroom adjacent to the student workbenches is a large general workbench equipped with vises, a bench shear, various tool holders, a light duty surface plate for pounding and a rolling mill for making sheet metal and strip. The bench is also equipped with a drawplate and tongs for making wire and tubing as well as a disc cutter and bezel punch for making components out of sheet metal. An anvil and stand with a set of hammers is provided in the classroom for heavier work. A selection of forming stakes, dapping blocks, swage blocks, various tool holders, a vise, stools, wooden stumps, pitch bowl, lead block and related materials and supplies are also provided. One end of the classroom is set up for casting procedures and includes mold curing and burnout kilns, a centrifugal casting machine, scale, calculator, oxy/propane torch, ingot molds, gas forge, a small blast furnace, movable vent hood, related hand tools and

accessories. The other side of the classroom is set up for moldmaking and wax work. The investment mold making area is equipped with a washout sink, manual, steam and ultrasonic cleaning equipment, a vacuum pump, a vibrator for investing mold flasks, investment, investment mixing tools, flasks and supplies. The wax working area is equipped with a pneumatic wax injector, electric wax working pens, a wax extrusion gun, assorted hand tools for forming and carving wax, clear rubber mold making system, a wax turning lathe, scale, calculator and assorted molds, dies, stamps, tools and supplies used to make wax models of jewelry for casting.

Between the wax area and the casting area is a separate room set up for grinding and polishing. This is a dirty area and has a door to reduce dirt migration and noise. It is equipped with two buffing machines which have dust collection systems built in, and face safety shields for student use in addition to their personal safety glasses and dust masks. There is also a fine and coarse wheel bench grinder, a belt sander, high speed polishing lathe, an oil bath diamond saw, a water fed grind stone, a precision edge sharpener, a power chop saw for steel, a band saw and related materials, accessories and supplies.

Next to the casting area is a separate area devoted to minting and engraving. It is equipped with a 4 foot precision lathe for medium size turning, facing, boring and threading work in steel or other metals. There is also a miniature toolroom lathe for small precision work. A miniature, high speed drill press, a large pedestal drill press, and a nine-ton capacity flypress for coining, diestriking and embossing. There is a tabletop engraving machine, an inside ring engraving machine and related alphanumerical templates and letter sets. Engraving equipment provided consists of graver's blocks, a power diamond hone for precision sharpening, a rotating vise stand for larger work and related materials, accessories and supplies.

Adjacent to the minting and engraving area is the master's workshop which is used for producing the work sold retail, student demonstrations and observation. This area is fully equipped but is not for student use.

During the summer we operate a retail venue at the Bristol Renaissance Faire every weekend from the end of June until the end of August. This gives students the opportunity to experience the "Sunshine Circuit" aspect of retail, jewelry marketing, observe other artists at work and enjoy themselves at the Renaissance Faire.

At this time, a black smithing shop and small scale foundry is under construction. Equipment to be installed includes a 100# power forging hammer, a 75# treadle hammer, gas and coke fired forges, large anvils, bending and forming equipment, large shears, punches, cutting and forming equipment, blast furnace, cutting and heating torches, electric welding equipment, drill presses, hydraulic forming press, compressor, pneumatic tools, grinding equipment and related hand tools and supplies. Initially, this facility will only be used for research and development of creative work but we plan to expand the curriculum in the future to include this aspect of metal working.

**Howard Academy for the Metal Arts**  
**Student Tool List & Prices 3/12/03**

**PLIERS:**

1	flat nose - 4 3/4" - box joint - smooth jaw	46.082	7.35
1	chain nose - 4 3/4" - box joint - smooth jaw	46.080	7.35
1	round nose - 4 3/4" - box joint - fine tip	46.081	7.35
1	bow tongs / ring bending - box joint	46.306	37.95
1	oblique cutters - flush cut	46.062	30.60
1	side cutters - bevel cut - 4 1/2"	46.124	27.50
1	parallel jaw - flat smooth jaw	46.512	18.50
1	World's Best solder snips	School	30.00
1	stone setting / prong bending	46.346	11.00

**HAMMERS:**

1	chasing hammer - economy - 1 1/8" face	37.0366	14.10
1	rawhide mallet - 1 1/2"	37.702	21.25
1	power hammer - flex shaft - w/ spring	34.245	135.00
3	replacement tips @ \$3.20 each	34.24101	9.60

**FILES:**

1	half round ring file 6" cut 2	31.130	22.57
1	half round ring file 6" cut 4	31.132	26.28
1	set #4 cut needle files, set of 12	31.677	93.63
1	barrette file - 6" - cut 4	31.031	22.61
1	bastard file	Local	
1	warding file - 6" - cut 0	31.394	14.00
1	round, pointed file - 6" - cut #2	31.290	12.27
1	1/2 round wide - flat tip - 2nd cut	School	4.78
6	file handles - plastic w/ screw on inserts @ \$2.40 each	37.784	14.40
1	file card - wood	33.981	5.25

**LAYOUT:**

1	precision digital caliper	35.180	59.00
1	spring divider - 3"	35.080	11.95
1	automatic center punch	47.850	41.70
1	scriber - hardened steel, double end	52.964	6.35
1	draftsman pencil	Local	
1	precision pointer	Local	
1	chinese white	Local	

**TWEEZERS:**

1	fine - locking - diamond tweezers	57.0357A	4.00
1	crosslock - soldering tweezers	57.765	3.60
1	AA - non magnetic stainless - acid proof	57.0300	2.85
1	third hand - round base	54.080	12.25
1	stone holder - 4 prongs	57.635	5.60
1	copper tongs	57.052	7.20

**BURRS:**

1	setting burrs (#1-30)	19.886	115.00
1	round burr set of 15	18.150G	17.25
1	hart burr set (12 - 15)	18.154G	29.80
1	cup burr set	18.153G	26.70
1	drill set #61-80	28.501	30.60

GRAVERS:

1	#52 round bottom	36.182	8.35
1	#54 round bottom	36.184	8.35
1	#2 ongette / #2 point	36.119	8.50
1	#40 flat bottom	36.140	8.50
1	#43 flat bottom	36.143	8.50
1	14/6 lining - straight	36.249	16.25
1	18/6 lining - straight	36.766	18.45
1	#8 square script	36.588	6.60
1	#3 bevel - carbon steel	36.453	6.35
1	#2 knife	36.502	6.35
10	short 1/2 round mushroom handles (1_D x 2"L) @ \$1.20 ea	37.857	12.00
1	graver sharpening jig - Crocker	36.880	42.00
1	sharpening stone - crystolon - 4"	10.450	8.95

GENERAL HAND TOOLS:

1	FOREDOM flex shaft - R series - constant torque w/foot speed control - constant torque - metal casing w/ handpiece #30 & chuck key ( <b>not foot control 34.322</b> )	34.695	KIT. includes: 235.00
1	flex shaft accessory kit - 26 PCs.	34.602	30.00
1	bench pin & anvil	13.325	14.00
1	rubber file block & holder	13.200	13.75
	wooden ring clamp w/ groove	48.126	9.00
1	jeweler saw frame 2 1/4	49.700	13.00
1	jeweler saw frame 5"	49.705	16.00
1	ring mandrel - grooved - size calibrated	43.077	19.95
1	ring mandrel - round - size calibrated	43.076	19.20
1	burnisher - straight	18.062	6.85
1	bench block 4" square	12.319	18.00
1	beading tool set	53.160	20.35
1	solid niobium solder pick	school	7.00
1	millgrainer set - sizes 2,4,6,8,10,12 - 6 pcs, w/ handle	53.0210	46.60
1	pin vise - swivel head - 2 double ended collets (0 - 1/8")	58.221	4.25
1	*optivisor (head band) - 2 1/2 X at 8"	29.473	33.70
<b>OR 1</b>	*telesight eyeframe - 2 1/2 X @ 7"	29.763	37.00
1	10X loupe - B&L triple aplanatic	29.075	57.88
1	steel ruler - 6" - metric & inches - SS	35.510	1.85
1	non-asbestos soldering pad - 6x6 - up to 3000° F	54.210	16.20
1	hard, non-asbestos pad - 7"+ - grooved & flat - 2000° F	54.219	17.75
1	magnesia block, soft - 2000° F	54.186	3.80
1	wire guage - non ferrous wire sizes - guage & thous.	35.568	26.85
1	scraper - 3 sided to a pointed end w/ handle	52.101	7.15
1	prong lifter	53.144	6.75
1	alcohol lamp w/knob adjust & cap - glass	14.286	5.95
1	saw blades - 2/0 - 1 gross	49.446	23.50
1	saw blades - 4/0 - 1 gross	49.444	25.90
1	saw blades - 6/0 - 1 gross	49.442	31.40
1	saw blades - 8/0 - 1 gross	49.440	36.50
1	casting crucible	22.451	17.50

FINISHING:

1	Vigor super buff - 6"x 60ply x 4 row stitching	17.706	10.75
1	satin finish buff - medium - 3 ply	17.894	7.60
1	satin finish buff - fine - 3 ply	17.896	5.85
1	satin finish buff - coarse - 3 ply	17.895	10.20
1	knife edge felt lap - 4"	17.500	4.35
1	flat felt lap - 4" x 1/2" - medium	17.435	8.75
1	felt ring buff combo - flat edge wheel w/ tapered mandrel	17.340	6.62
1	white diamond tripoli - 1 lb.	47.451	4.00
1	yellow rouge - 1/2 lb - 1 lb	47.425	2.35

**GENERAL EXPENDABLES:**

1	can light oil (3 in 1)	Local	
1	2 Oz. Jar of Free Flow Flux - Hoover & Strong	school	3.00
1	hair flux brush	Local	
1	4 oz. dropper bottle	school	1.50
2	sheets each - 320, 400 & 600 grit sandpaper	Local	
1	box bandaids	Local	
1	jar powdered boric acid	Local	

**TOTAL AS OF 11-21-02**

**\$1,976.61 - \$1,982.64**  
**(at current market prices)**

**Student Supplies:**

**Metals:**

5 oz casting grain - sterling silver  
4"x 6" 18 ga. Sheet - approx 5.4oz.  
20, 18, 16, 14, & 12ga. Sterling silver wire - as needed  
hard, medium & soft silver solder - as needed  
Brass sheet - 3mm, 2mm & 1mm - as needed  
Brass wire - 3mm, 2mm, & 1mm - as needed  
Copper sheet & wire, asst'd - as needed  
Bronze sheet, asst'd - as needed  
Cold Rolled Tool Steel, asst'd - as needed  
Hot Rolled Mild Steel, asst'd - as needed  
10, 14, 18, & 24K gold, asst'd small quantities - as needed  
Assorted heads, prong settings & findings of silver & gold - as needed  
Hard, medium & easy gold solder - as needed

**Chemicals:**

Epoxy / 5 min, super glue, epoxy / special, contact cement, tapes, etc. - as needed  
Acetone, laquer thinner, spot remover, naphtha, paint thinner, denatured alcohol, etc. - as needed  
Nitric, acid, muriatic acid, sulfuric, hydrochloric, hydroflouric, sparex, etc. - as needed

**Misc. Supplies:**

See thru Mold compound - as needed  
Mold investment compound - as needed  
Abrasives & special polishing & finishing compounds - as needed

**Text Materials:**

Reference materials, tables, charts & handouts - as needed

<b>Jeweler's Bench Reference</b>	<b>62.460</b>	<b>12.95</b>
<b>The Complete Metalsmith</b>	<b>62.500</b>	<b>19.90</b>
<b>Howard Academy training manual</b>	<b>school</b>	<b>10.00</b>
Catalogs & trade publications - as needed		

**TOTAL FOR SUPPLIES**

**\$442.85**

**TOOLS AND SUPPLIES = \$2,418.26 - \$2,424.29**

**NOTE: LOCAL AND SCHOOL ITEMS ARE IN ADDITION TO THE ABOVE QUOTE**

## Howard Academy for the Metal Arts Comparative Market Study

Schools	Public or Private	Jewelry	Engraving	Tool & Die	Forging	Foundry	Sculpture & Modeling	Multi-Media	Class Length (Days)	Total Hrs. per Course	Tools Furnished	Class-room Exper.	Prod. Exper.	Average Cost per Course	Average Cost per Hour
G.I.A.	Private	7	No	No	No	No	No	No	4	24	Yes	Yes	No	\$ 745	\$31.04
Stewart Int'l.	Private	3	No	No	No	No	No	No	5	35	Yes	Yes	No	\$ 550	\$15.71
Blair Jewelers	Private	1	No	No	No	No	No	No	5	35	Yes	Yes	No	\$ 595	\$17.00
Jewelry Inst. of America	Private	3	No	No	No	No	No	No	5	40	Yes	Yes	No	\$ 545	\$13.62
C. Bauer Studio	Private	1	No	No	No	No	No	No	5	30	Yes	Yes	No	\$ 475	\$15.83
Jewelry Arts Inst.	Private	1	No	No	No	No	No	No	9	30	No	Yes	No	\$ 425	\$14.16
Miami Jewelry	Private	11	No	No	No	No	No	No	7	35	Yes	Yes	No	\$ 495	\$14.14
Trenton Jewelry	Private	5	No	No	No	No	No	No	5	35	Yes	Yes	No	\$ 500	\$14.28
Rever Academy	Private	24	No	No	No	No	No	No	4	24	Yes	Yes	Yes	\$ 350	\$14.58
Connor Jewelry Institute	Private	5	1	No	No	No	No	No	5	35	Yes	Yes	No	\$ 595	\$17.00
Penland School of Crafts	Private	5	1	No	9	No	1	No	14	40	Yes	Yes	No	\$ 500	\$12.50
Mendocino Art Center	Public	6	No	No	No	No	2	No	2	14	Yes	Yes	No	\$ 105	\$ 7.50
Arrow Mount Sch	Public	5	No	No	No	2	2	No	4	28	No	Yes	No	\$ 195	\$ 6.96
Appalachian Ctr.	Public	2	No	No	No	2	2	1	5	35	Yes	Yes	No	\$ 185	\$ 5.28
Ne. Wis. Tech Coll.	Public	4	1	No	No	No	No	No	36	528	No	Yes	No	\$ 3,390	\$ 6.42
Cranbrook Academy	Private	0	No	No	No	No	No	1	180	900	Yes	Yes	No	\$14,600	\$16.22
Jewelry Design Institute	Private	5	No	No	No	No	No	No	5	35	Yes	Yes	No	\$ 595	\$17.00
<b>Howard Academy</b>	<b>Private</b>	<b>28</b>	<b>3</b>	<b>3</b>	<b>10</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>90-425</b>	<b>2040</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>\$ 1,000 per month</b>	<b>\$ 6.25</b>

## HOWARD ACADEMY for the METAL ARTS

### GRADING CATEGORY ##, CLASS HOURS REQUIRED & TECHNIQUES 2/13/97

##

- 1- **Hand tools** - forming, filing, shaping & step finishing by hand  
*40hrs*
- 2- **Saw piercing** - profiling, straight lines, inside cuts, kerfs, thrumming  
*30hrs*
- 3- **Drilling & burr use** - layout, precision drilling, drill press use & milling, burr applications  
*40hrs*
- 4- **Tool making** - small steel forging, hardening, tempering, spark tests, quenches  
*20hrs*
- 5- **Soldering** - silver, gold & lead, step soldering, butt, lap, sweat, dovetail, mortise & tenon, flux,  
*60hrs* poker soldering, heat sinking, capillary action, heat shields, resists & pits, fire coat
- 6- **Riveting & cold fastening** - solid, hollow & blind rivets, flanges, hinges, staples, screws,  
*35hrs* joints, inlays, catches, gluing, press fitting, tension, folding
- 7- **Sizing - rings, bezels** - forging, stretching, butt & dovetail joints, solder selection,  
*60hrs* troubleshooting for old joints, measuring, limits
- 8- **Setting Stones** - bezels, bead, britecut, beading, prongs, illusion, needlepoint, gypsy & channel  
*40hrs* mounting, ½ pearls & small cabochons - thread setting, trouble shooting gems
- 9- **Finishing** - step finishing, polishing, decorative surface treatments, plating, cleaning  
*25hrs*
- 10 **Repairs** - tips, prongs, shanks, joint pin & catches, chains, breaks, dents, hollow work,  
*80hrs* build up, restoration, patching, blending, burnishing, measuring, trouble shooting  
Ethics, take in procedures, warning customers, fixing mistakes, paying for fubars
- 11- **Casting** - wax work, carving & build up, finishing, spruing, investing, weighing, burn out,  
*40hrs* melting, casting, rubber injection mold use, injection waxes
- 12- **Practical Gemology** - general working properties of gems, heat, cold, thermal shock, steam,  
*8hrs* Ultrasound, abrasion, chipping, inclusions, imitations, synthetics, etc.,  
Dos and don'ts, ID, trouble shooting, counting, warning, rejects
- 13- **Basic Production** - metal models, see thru mold making, RTV molds, 1, 2 & 3 part molds,  
*12hrs* Cutting molds, planning parting lines, skin molds, mother molds, frames  
release agents, no-cut molds, stamps, open molds, undercuts, holes, cores
- 14- **Trouble shooting** - avoiding headaches, repair problems & gem disasters, work to refuse,  
*15hrs* when to refuse liability, how to CYA, counting, Take in & cleaning  
procedures, looking for trouble, what to look for, identifying needed work
- 15- **Lectures & Demonstrations** - all phases of instruction include class and individual L&Ds  
*part of 335hrs\**
- 16- **Guest Lectures & Demonstrations** - by various experts in various metal working skills, etc.  
*part of 335 hrs\**

## GRADING CATEGORY ##, CLASS HOURS REQUIRED & TECHNIQUES

##

**17- Observation of working shop** - daily show and tell on work in progress & demonstrations etc.  
*part of 335hrs\**

**18- Semi-Final project** - designed to demonstrate what student has learned from training thus far  
*40hrs*

~~~~~(1 thru 18 for diploma in commercial jewelry techniques)~~~~~

**20- Hand tool techniques - advanced** - decorative filing, filigree, scrolls, repousse, engraving  
*100 hrs* surface treatments, raising, sinking, embossing, coining,  
stamping, dapping, fusing, roll printing, forging, etc.

**21- Fabrication, advanced** - 3D forms, cage work, sheet applique, open work, hollow forms,  
*200 hrs* Bas-relief, combining casting, married metals, mokume, folding,  
18KY, platinum, fusing, welding, soldering, jigs, investment soldering  
Granulation, niello, inlay etc.

**22- Design for production** - planning work steps for casting & fabrication - making recipes that fit  
*100 hrs* your techniques and efficiently reproduce multiples of your design

**23- Design problems** - solving design problems by adapting & combining your techniques to make it  
*80 hrs*

**24- Hand Engraving Techniques** - lettering alphabets, monograms & inlay, niello work,  
*240 hrs* seals, printing plates

**25- Diemaking & applications** - steel cutting, die cutting, stamp making, coining dies, embossing  
*120 hrs* dies, cutting dies, forming dies, spring tools, fullers, machine tool  
use, grinding, punching, hammer use, power engravers, hot striking,  
cold striking, embossing, metal behavior, collars, jigs, etc.

**26- Metal smithing, advanced** - non-ferrous cold and hot forging, raising & sinking, “anaclastic”  
*80 hrs*

**27- Blacksmithing** - forging, drawing, upsetting & welding with traditional coke forge, gas forge,  
*120 hrs* ornamental iron work, sculpture work, damascus steel, armor, bladesmithing, etc.

**28- Welding** - Oxy/acetylene torch, MIG, TIG and forge welding for light duty and arts applications  
*80 hrs*

**29- Jig, tool & mold making - advanced** - for cast bronze and foundry work, production jigs for  
*100 hrs* forged work and making machine tools for shop use

**30- Advanced Production techniques** - cupola furnace making & use in cast iron, core casting  
*140 hrs* for sculpture work, metal molds, sand casting for undercut  
designs, large scale work, making scale models, enlarging  
work to scale, lost foam casting etc. and by request.

**Total hrs = 545 to 2,240 hrs** (Mark no. Hours in ## column on progress sheet)

- 2 of 2 -

## **SEMINAR INFORMATION**

Howard Academy for the Metal Arts is more than happy to conduct private seminars for jewelers, goldsmiths and groups of jewelry professionals. This can be done on a one on one basis or in groups on weekends, weekdays or evenings (weekends are excluded during the Renaissance Faire). Private seminars are done on an appointment only basis so that we can properly schedule your training. Just call for an appointment.

You can choose the topic, the time and the duration of the seminar! We will work with you to design the training session to meet your goals or those of your employer and make the most use of the time available.

For example, you have been wanting to find a seminar on mokume gane, granulation and platinum, prong tipping but you haven't been able to find the three together. Now you can.

We offer private seminars in all areas of the metal arts, from basics to advanced and creative techniques. If you are already in the trade and just want to pick up some new tricks then this is for you. If your boss wants to expand the shop to include a casting and mold making operation this is for you. We can even help you select the right type & size equipment.

### **EMPLOYERS & SHOP OWNERS TAKE NOTE:**

**Training expenses are tax deductible**

**Seminar costs are only \$150 per day per person**

**You learn what you want to learn not just what is offered**

**We are not like most schools - we don't have semesters - we don't have prerequisites**

**You can come virtually any time and study anything you want**

**Young and old are welcome ages 8 to 80 - children younger than 8 will be duck taped**

**Beginners and pros are welcome**

**Special arrangements can be made for seminars in remote locations**

### **ASK ABOUT OUR PLANS FOR VACATION SEMINARS !!!**

**SUNNY MEXICO IN FEBRUARY SOUND GOOD?**

Call 800-843-9603 , 608-873-5199 or fax 608-873-0960

email: [goldsmith@howard-academy.com](mailto:goldsmith@howard-academy.com)

website: [www.howard-academy.com](http://www.howard-academy.com)

Frequently Asked Questions  
Of  
Howard Academy for the Metal Arts

**School Calendar**

School hours: 9:00 - 12:00 A.M. 12:30 - 5:30 P.M. Monday - Friday

**SCHOOL WILL BE CLOSED THE FOLLOWING DAYS:**

July 4<sup>th</sup> Memorial Day Labor Day Easter

Thanksgiving Day Christmas break New Years Day

**\*\*CHRISTMAS BREAK IS DEC .15 THRU JAN.1\*\***

**Length and Cost of Programs**

At Howard Academy, our students may start anytime as we do not have set semesters. Students learn at different levels with an individualized curriculum set up to best suit their needs. We offer **Full Course Training-14 months, Goldsmithing & Production Techniques - 6 to 9 months** and **Basic & Commercial Jewelry Techniques - 3 to 5 months**. Cost of tuition is **\$1000 per month**. **Tools and supplies** are purchased separately with the help of the instructor for a cost of about **\$2000 and \$400 respectively**.

This is a one time cost for top of the line tools that will last a lifetime.

**Housing**

At this time, student housing is not available. However, there are rooms for rent in private homes at \$250 - \$400 per month and motels for seminars and short stays. In the future, we hope to offer dorm style living to our students.

**Graduation**

Graduates of the **Full Course Training program** receive a **goldsmithing diploma**.

**Commercial jewelry certification** is awarded upon completing the shorter programs.

Although we do not provide job placement, we receive job announcements from jewelers all over the country. Students and graduates are encouraged to evaluate and respond to these opportunities.

**ARE YOU STILL INTERESTED?  
PLEASE CALL FOR MORE DETAILED INFORMATION.  
WE HOPE TO HEAR FROM YOU SOON!**